# B.F. Sisk Dam Safety of Dam Modification Project Environmental Impact Statement / Environmental Impact Report

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### B.F. SISK SAFETY OF DAMS MODIFICATION PROJECT Biological Survey Report

Prepared for U.S. Bureau of Reclamation California Department of Water Resources October 2018

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## B.F. Sisk Dam Safety of Dams Modification Project

Biological Survey Report

Prepared for U.S. Bureau of Reclamation California Department of Water Resources October 2018

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## CHAPTER 1 Introduction

## 1.1 Background and Purpose

B.F. Sisk Dam is part of the San Luis Joint-Use Complex, which was designed and constructed by the federal government and is operated and maintained by the California Department of Water Resources (DWR). The complex was constructed to provide supplemental irrigation water storage for the federal Central Valley Project (CVP) and storage of municipal and industrial water for the California State Water Project (SWP).

The dam impounds San Luis Reservoir, which, with a total water storage capacity of more than 2 million acre-feet, is one of the largest off-channel storage facilities in the country and a key component of the water supply system in California. Water is lifted into the reservoir for storage by the Gianelli Pumping–Generating Plant from the California Aqueduct and is diverted from the Delta-Mendota Canal via O'Neill Forebay.

The dam and reservoir are located in an area of high potential for severe earthquake loading from active faults. A recent series of studies and analyses, including a probabilistic seismic analysis completed in 2006, determined that corrective actions were justified at B.F. Sisk Dam to reduce risk to the downstream public. The U.S. Bureau of Reclamation (Reclamation) and DWR seek to mitigate potential safety concerns identified in previous and ongoing studies by modifying water retention structures at B.F. Sisk Dam in order to reduce the seismic, static, and hydrologic risk.

The project will involve two main components: stability berms (buttresses) and a dam raise. Project construction will require a large amount (on the order of between 2 million and 20 million cubic yards) of earth material, all of which would be obtained from a number of borrow sites within the project boundary.

This report presents the findings of focused vegetation and wildlife surveys performed in September 2018 to identify the potential presence and distribution of special-status plant and wildlife species, and natural communities in the project footprint for the B.F. Sisk Safety of Dams Modification Project (project). The intent and scope of this document is to characterize sensitive biological resources in the area where the proposed project will be implemented, and those resources that may be affected by the project.

## 1.2 Study Area Location

The study area for the B.F. Sisk Safety of Dams Modification Project is located on the west side of California's Central Valley, near the community of Santa Nella, approximately 12 miles west of Los Banos. It is located in the San Luis Dam, California 7.5-minute U.S. Geological Survey

quadrangle. The 3,905-acre "study area" described in this report includes the immediate footprint of proposed facilities, access routes, construction staging areas, borrow areas, and other lands that may be accessed to complete the project (see Figure 1-1).<sup>1</sup>

### **1.3 Summary of Biological Survey Findings**

Biological surveys performed by ESA biologists for the B.F. Sisk Safety of Dams Modification Project included a combination of walking surveys to identify and characterize vernal pool branchiopod habitat, elderberry shrubs, and small mammal burrows; day and nighttime aquatic surveys to document amphibian use; fixed point surveys to characterize site use by songbirds and raptors, including tricolored blackbird, Swainson's hawk, and burrowing owl; day and nighttime driving surveys to identify use by reptiles, raptors, and mammals; and the use of baited camera stations to study large carnivores, including American badger and San Joaquin kit fox. In addition, a single emergence and acoustic bat survey was performed. The findings of these surveys are summarized below.

<u>Vernal Pool Branchiopods</u>. Three pool areas comprising a total of eight pools were identified that may support the federally listed vernal pool fairy shrimp or vernal pool tadpole shrimp. One area includes an alkali pool located on grasslands near the dam face and the other areas occur north of the DWR maintenance yard. One of these features was mapped as a seasonal wetland in the 2018 wetland delineation and the other features are non-wetland areas that may support listed branchiopods. No vernal pool branchiopod habitat was identified outside of the areas immediately below B.F. Sisk Dam or near the DWR maintenance yard.

<u>Valley Elderberry Longhorn Beetle</u>. Forty (40) elderberry shrubs were identified in the study area with stems greater than 1-inch diameter, principally located near Basalt Quarry. No evidence of valley elderberry longhorn beetle presence, such as larval exit holes or adult beetles, was observed on any of the generally poor-to-fair health shrubs. Shrubs occurred in 5 general stands. The largest elderberry/buffaloberry stand northwest of Basalt Quarry numbered greater than 25 shrubs. Four smaller stands were found in the Basalt Quarry area comprising at least 10 shrubs. Aside from these occurrences, elderberries were not identified elsewhere in the study area. However, two elderberry shrubs occur several feet outside the study area, at the sewage holding ponds located 0.5-mile northeast of Basalt Campground.

<u>California Tiger Salamander</u>. Two potential aquatic breeding sites for California tiger salamander were identified in the study area and three such features were identified within 1.2 miles; generally west, south and southeast of Basalt Quarry. The California tiger salamander may be encountered in select upland and aquatic areas south of the reservoir. Aquatic habitat that may support breeding California tiger salamander does not occur west of B.F. Sisk Dam or in the Medeiros Use Area.

<u>California Red-legged Frog</u>. The California red-legged frog was previously not known or expected in the study area. For the current assessment, focused daytime surveys were performed at all perennial aquatic sites in the study area to assess habitat conditions, and nighttime surveys

<sup>&</sup>lt;sup>1</sup> Note that figures are provided at the end of each chapter.

were performed at Willow Spring and Domengine Spring. A California red-legged frog breeding population was identified at Willow Spring, on the edge of the study area and can likely be avoided by the project. California red-legged frogs may be encountered in select areas south of the reservoir and precautions are warranted to avoid impacts to this species. Potential breeding habitat for this species was also identified at four ephemeral and perennial ponds located between 0.3 and 1.2 miles from Basalt Quarry. This species is not expected near Basalt Campground, below B.F. Sisk Dam, or at the Medeiros Use Area.

<u>Burrowing Owl and Swainson's Hawk.</u> Despite extensive surveys, no burrowing owls, active owl burrows, or burrowing owl sign were identified in the study area. Annual grasslands in the Medeiros Use Area and throughout the study area provide high quality foraging and breeding habitat for this species

Swainson's hawks were not identified during the survey, possibly due to the late season timing of the field review. Potential Swainson's hawk nesting habitat occurs in the Medeiros Use Area eucalyptus grove, and near Basalt Campground (both documented in the California Natural Diversity Database), and in trees below B.F. Sisk Dam. Grasslands throughout the study area provide potential foraging habitat.

<u>American Badger and San Joaquin Kit Fox.</u> Spotlighting surveys and camera scent stations were used to identify American badger and San Joaquin kit fox in the study area. The San Joaquin kit fox was not detected during surveys. However, kit foxes are expected to use grassland portions of the study area on an intermittent and irregular basis.

State Park rangers anecdotally report American badgers south of the reservoir, north of Basalt Quarry. The CNDDB also reports badgers in the Medeiros Use Area. During surveys, a badger was observed near the intersection of Basalt Road and Gonzaga Road and a badger skull was found in a cattail marsh area below B.F. Sisk Dam. This species is expected in annual grasslands throughout the study area.

*Bat Species*. A bat habitat assessment was performed throughout the study area and nighttime emergence surveys were done at a concrete tunnel structure located near the Basalt Quarry. Acoustic surveys verified the presence of three bat species. Yuma myotis and Mexican free-tailed bat roosting was verified in the concrete tunnel. A second concrete structure near Basalt Quarry also provides roosting habitat for these species. In addition, the western red bat was detected during surveys and may roost in foliage at day use areas throughout the study area.

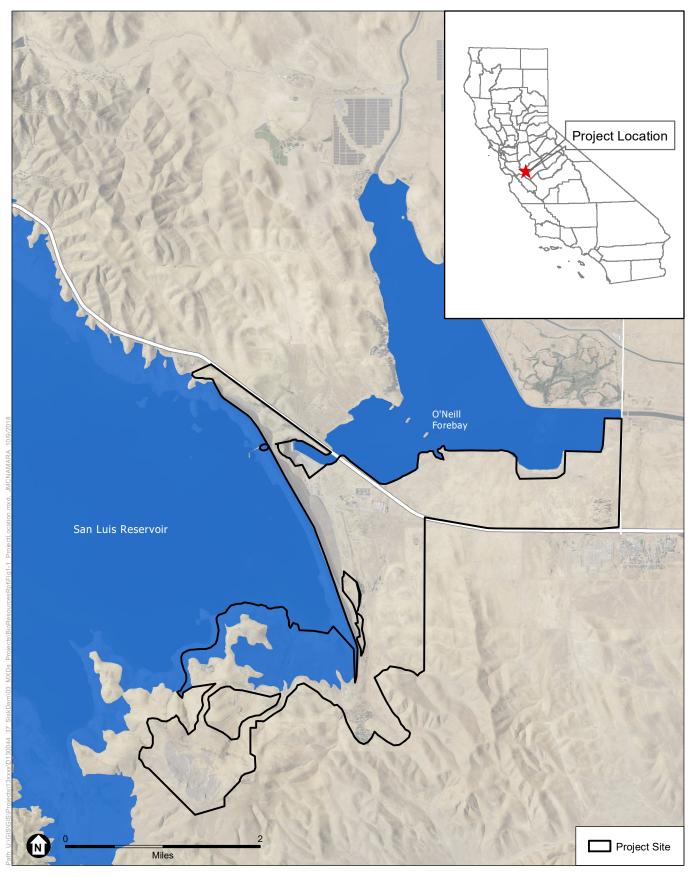
<u>Special-Status Plants</u>. Several areas were identified where future in-season botanical surveys are warranted to search for rare plants. These include alkali grasslands near the dam face and grasslands located north of the DWR maintenance yard (same areas described for vernal pool branchiopods). The construction area for B.F. Sisk Dam was reviewed using aerial photographs from the mid-1960s, and areas that were not subject to earth disturbance or borrow activities during construction may provide potential for the occurrence of rare plant species.

<u>Species Not Identified</u>. No high quality aquatic habitat was identified in the study area that would support western pond turtle. The pond at Willow Spring provides low to moderate quality habitat,

but turtles were not observed at this location during repeated surveys. This species is unlikely to be encountered.

No San Joaquin coachwhip were identified during surveys. However, habitat for this species is present throughout grasslands in the study area.

No tricolored blackbirds were identified during the survey, possibly due to the late season timing of the field review. Habitat for tricolored blackbird is present in cattail stands below the dam and at Willow Spring, though use of these areas is not known.



SOURCE: USDA, 2016; CDFW, 2018; USFS, 2017; CDM, 2018; ESA, 2018

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B.F. Sisk Dam Safety of Dams Modification Project

## CHAPTER 2 Vernal Pool Branchiopods

### 2.1 Summary of Findings

This chapter presents the results of a focused site assessment that was performed for listed branchiopod<sup>2</sup> species that occur in the regional vicinity of the study area. These species include the federally-listed threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and federally-listed endangered vernal pool tadpole shrimp (*Lepidurus packardi*). An occurrence of longhorn fairy shrimp (*Branchinecta longiantenna*) is generally mapped in a 4-quadrangle, 13-mile by 17-mile area that includes the entirety of the Gustine, Stevinson, Ingomar, and San Luis Ranch USGS quadrangles. The species occurrence is in association with alkali habitat at the San Luis National Wildlife Refuge (San Luis NWR), greater than 10 miles northeast of the study area (CDFW, 2018). Similarly, the Conservancy fairy shrimp (*Branchinecta conservatio*) is documented greater than 10 miles from the study area. Neither longhorn fairy shrimp nor Conservancy fairy shrimp are expected in the study area due to their limited distribution and restricted habitat requirements (USFWS, 2007). The site assessment finds that potential aquatic habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp occurs in several areas within the project study area. These findings are summarized in **Table 2-1**.

Area	Habitat Suitability <sup>a</sup>
Six Pools North of DWR Maintenance Yard (Fig. 2-2)	High quality habitat for VPFS and VPTS occurs in six seasonal alkali pools. Ostracod shells and algal mats are present, with <i>Eryngium</i> sp. and <i>Atriplex</i> . and American pillwort ( <i>Pilularia americana</i> ).
One Pool West of DWR Maintenance Yard (Fig. 2-2)	Single, moderate quality pool with evidence of algal mats and <i>Eryngium</i> sp.
One Pool in Grasslands Below B.F. Sisk Dam (Fig. 2-3)	Single, moderate quality pool with evidence of algal mats and saltgrass ( <i>Distichlis spicata</i> ).

TABLE 2-1
SUMMARY OF LISTED BRANCHIOPOD HABITAT

<sup>a</sup> VPFS = vernal pool fairy shrimp; VPTS = vernal pool tadpole shrimp

Source: ESA

<sup>&</sup>lt;sup>2</sup> The term "branchiopod" describes the taxonomic group of crustaceans that includes both fairy shrimp and tadpole shrimp.

## 2.2 Species Accounts

#### Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp is endemic to the grasslands of the central valley, the Central Coast Mountain range, and South Coast Mountains, occurring in a variety of habitats. This species is described from high quality clear-water sandstone depressions and grassy swales, but also occurs in abundance in unvegetated roadside depressions and tire ruts.

The nearest vernal pool fairy shrimp record is a 1993 observation from San Luis NWR, approximately 13 miles northeast of the study area (CDFW, 2018). This species is well described from alkali sink and alkali grassland habitats, as found in the San Luis NWR. The study area is not within designated critical habitat for this species.

Typical habitat for vernal pool fairy shrimp includes vernal pools and seasonal wetlands within relatively undisturbed annual grasslands, seasonal wetlands, or wet depressions. The vernal pool fairy shrimp persists in some of the shortest-lived pools of any listed fairy shrimp species. In the warmer spring months this species can reproduce in pools that persist for as few as three to four weeks (USFWS, 1994; 2003; 2005a; 2005b; 2006).

## Vernal Pool Tadpole Shrimp

The vernal pool tadpole shrimp is endemic to grasslands in the central valley, occurring at scattered localities in the San Joaquin Valley from San Joaquin County to Madera County (CDFW, 2018). No vernal pool tadpole shrimp occurrences are known or reported within 10 miles of the study area. The majority of populations occur in the Sacramento Valley, though an isolated population also occurs in the east San Francisco Bay Area near the City of Fremont. The nearest record is a 2003 observation 10.7 miles east of the study area (CDFW, 2018).

The vernal pool tadpole shrimp has been documented from a variety of seasonally ponding habitats, including vernal pools, alkali pools, roadside ditches, and tire ruts (Belk and Eriksen, 1999). This species tolerates a range of habitat conditions, from barren pools to well-vegetated sites. Pools range in size from small puddles measuring a few square meters to seasonal lakes that cover several acres. This species tolerates turbidity conditions ranging from relatively clear water to highly turbid pools USFWS, 1994; 2003; 2005a; 2005b; 2006)

## 2.3 Survey Methods

ESA senior wildlife biologist and fairy shrimp specialist Brian Pittman, CWB, was the lead biologist for large branchiopod site assessment. Mr. Pittman has held a USFWS 10a(1)(A) recovery permit for listed branchiopods since 2000 (Recovery Permit #TE-027422-5). Focused surveys of the study area were performed by B. Pittman and Kelly Bayne from September 10 to 14, 2018.

Because branchiopod habitat can vary widely between seasons and years, and it is easily overlooked during the dry season, the USFWS has not issued formal guidance in identifying

potential habitat for listed branchiopods during the dry season. In the absence of formal guidance, this assessment presents the best judgment of ESA's large branchiopod specialists B. Pittman and K. Bayne in describing the potential distribution of listed brachiopods within the study area. In addition, the USFWS generally considers that listed branchiopods within 250 feet of a proposed action may be subject to direct or indirect effects; hence, this assessment considered, the potential occurrence of habitat within 250 feet from the study area boundaries.

As part of this evaluation, the following actions were performed to identify potential habitat for listed branchiopods on or near the B.F. Sisk Safety of Dams Modification Project:

- A review of aerial photographs on Google Earth from August 1998 through March 2018 showing the extent of potential habitat, grading and site uses.
- A review of historical and recent large branchiopod distribution records from the California Natural Diversity Database (CNDDB) (CDFW, 2018) and scientific literature to create a list of special status fairy shrimp species that may occur at the site (Figure 2-1).
- A focused habitat assessment survey that included direct review of upland and aquatic habitat on the study site. Walking transects were performed in areas of interest to characterize aquatic features.

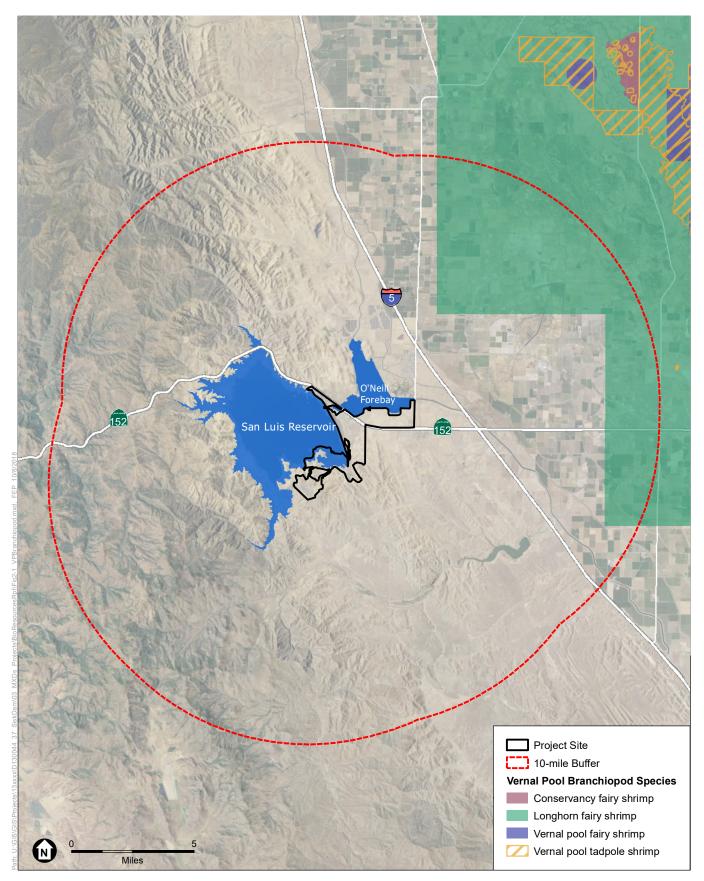
The focused site assessment survey included identification and mapping of appropriate seasonal pools in the study area.

## 2.4 Survey Results

Potential listed branchiopod habitat was identified in two general areas comprised of seven small pools north of the California Department of Water Resources (DWR) maintenance yard, and one area below B.F. Sisk Dam (see **Figures 2-2** and **2-3**). Each of these features is considered to provide potential habitat based on observed hydrologic indicators and ponding depth, the absence of flow-through water, alkali conditions, algal matting, the presence of aquatic invertebrates. Based on these indicators, each of the four observed features that were characterized as potential habitat during this dry season assessment are estimated to pond greater than 3 to 6 weeks out of the year, which is sufficient to support the life cycle of vernal pool fairy shrimp and vernal pool tadpole shrimp.

Neither vernal pool fairy shrimp nor vernal pool tadpole shrimp are reported within 10 miles of the study area and no other listed branchiopods occur within 10 miles of the study area. However, based on the presence of potentially suitable habitat, there is a moderate likelihood that these species occur within one or more of the aquatic depression features that were identified occur onsite. The largest of these features located north of the DWR office measures approximately 75 feet by 150 feet and may pool to an average depth of 6- to 8-inches, with a maximum depth estimated at between 14 and 16 inches (**Figure 2-4**). Ostracod shells and algal mats, both indicators of long-standing ponded water during winter, were evident in this and other observed

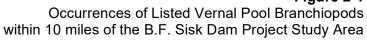
pools (**Figure 2-5**). These indicators show adequate ponding capacity to support vernal pool fairy shrimp maturation.



SOURCE: USDA, 2016; CDFW, 2018; CDM, 2018; ESA, 2018

B.F. Sisk Dam Safety of Dams Modification Project

#### Figure 2-1







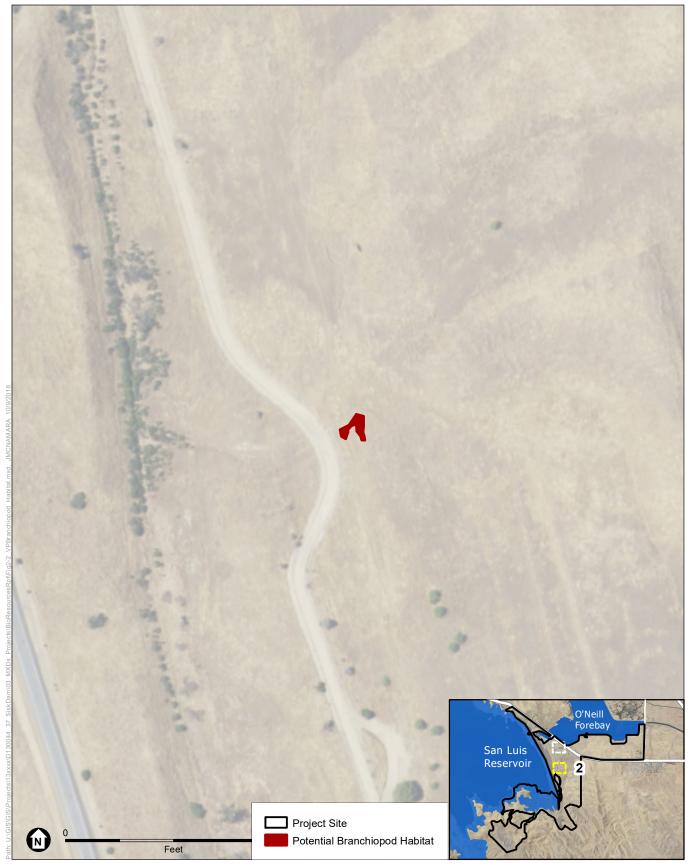
SOURCE: USDA, 2016; CDFW, 2018; CDM, 2018; ESA, 2018



Figure 2-2 Location of Potential Vernal Pool Branchiopod Habitat



ESA 



SOURCE: USDA, 2016; CDFW, 2018; CDM, 2018; ESA, 2018

ESA

B.F. Sisk Dam Safety of Dams Modification Project

Figure 2-3 Location of Potential Vernal Pool Branchiopod Habitat



B.F. Sisk Safety of Dams Modification Project. 130314.04
 Figure 2-4

Source: ESA

Seasonal Pools North of the DWR Maintenance Yard may Support Large Branchiopods; Algae Mats, Soil Cracking and Ostracod Shells are Present Photo date: September 12, 2018



B.F. Sisk Safety of Dams Modification Project. 130314.04

Source: ESA Figure 2-5 Detail of Pools North of the DWR Maintenance Yard, showing Algae Growth (Top); and Two Pools in the Vicinity (Bottom) Photo date: September 12, 2018

## CHAPTER 3 Valley Elderberry Longhorn Beetle

### 3.1 Summary of Findings

This chapter summarizes the findings of a focused site assessment that was performed by Environmental Science Associates biologists for the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (VELB) within the study area. The purpose for the 2018 VELB survey was to identify potential VELB habitat that may be affected by proposed future actions in the study area.

The site assessment found 40 elderberry shrubs in the study area with stems greater than 1-inch diameter, principally located near the Basalt Quarry area. However, no evidence of VELB presence such as larval exit holes or adult beetles were observed on any of the generally poor-to-fair health elderberry shrubs. The VELB is considered to have a low potential to occur on inspected plants and a low to moderate potential to occur on approximately 5 to 10 inaccessible elderberry shrubs. These findings are summarized in **Table 3-1**, below.

Stem Size	Total Number of Stems
1 to 3 inches Diameter	42
3 to 5 inches Diameter	63
> 5 inches Diameter	16
Total Stems with VELB Exit Holes	0
Shrubs Not Reviewed for Exit Holes	4 shrubs, numerous stems
Total Stems within Riparian Habitat	0

TABLE 3-1 SUMMARY OF ELDERBERRY SHRUB FINDINGS

SOURCE: ESA

### 3.2 Species Account

Valley elderberry longhorn beetles are unique insects that spend most of their lives within the stems of elderberry (*Sambucus* spp.) trees and shrubs. Females lay their eggs within the bark, where larvae hatch and bore into the stems. Larvae remain within the stems for one to two years. In March, when the elderberries begin to flower, they pupate and emerge as adults. Mating usually occurs in June. Often, the only indicators of their presence are the distinctive small oval-shaped openings that are left after larvae pupate and emerge (U.C. Berkeley, 2005; USFWS, 2018).

Valley elderberry longhorn beetles utilize elderberry shrubs with a minimum stem diameter of at least 1 inch (at ground level) (USFWS, 2005). In the Central Valley, elderberry shrubs are fairly common in riparian forests and adjacent uplands (U.C. Berkeley, 2005). Elderberry shrubs are typically found growing in association with other riparian species, but they also occur as isolated shrubs in upland areas.

Western Merced County is within the described potential range of the VELB (USFWS, 1999), with one reported occurrence in the western portion of the county (CDFW, 2018). Critical habitat for VELB is designated along the American River in Sacramento County, more than 50 miles from the study area (USFWS, 2002). The nearest documented VELB occurrence to the study area is a 1987 collection of two adult beetles from North Fork Los Banos Creek, about 5.3 miles southeast of the Basalt Campground (CDFW, 2018). No other occurrences are reported within 20 miles of the study area.

### 3.3 Survey Methods

VELB habitat surveys were conducted from September 10 to 13, 2018 by ESA biologists Even Holmboe, Julie McNamara, K. Bayne, and B. Pittman. The survey focused on identifying elderberry shrubs within borrow and construction areas within the project study area shown in Figure 1-1. ESA biologists identified and inspected all elderberry shrubs and recorded the number of stems measuring at least a 1-inch in diameter at the base. Data collected for each shrub included the number of stems, diameter class, whether or not they had exit holes. No identified shrubs were located within riparian habitat, therefore, such information was not collected.

## 3.4 Survey Results

The survey focused on elderberry shrubs within the study area shown in Figure 1-1 and areas within 250 feet. The Basalt Quarry area contained the largest concentration of elderberry shrubs. A large mixed elderberry stand was identified northwest of Basalt Quarry, numbering greater than 25 shrubs. Shrub locations are shown in **Figures 3-1 and 3-2**. Data on stem size and the presence of valley elderberry longhorn beetle (VELB) activity (i.e., presence of exit holes) is shown in **Table 3-2**. No VELB activity was noted; however, due to the extremely dense structure within the largest identified mixed elderberry stand, perhaps five to ten shrubs could not be closely inspected to ascertain potential VELB activity.

In addition, a smaller elderberry stand was noted comprising nine shrubs (Figure 3-1a). Aside from these occurrences, elderberries are not present elsewhere in the study area. A single elderberry shrub was found several feet outside the study area, at the sewage holding ponds located 0.5-mile northeast of the Basalt Campground. The characteristics of identified shrubs are presented in Table 3-2.

	Number of Stems by Size Class			Canopy		Presence of Exit Holes or
Shrub Number	1"-3"	3" to 5"	>5"	Diameter in Feet	General Health	other VELB Evidence
1		4	2	15	Fair	None
2		2		8	Fair	None
3			3	14	Poor	None
4				12	Poor	None
5	1			4	Poor	None
6		9		14	Poor	None
7	4			10	Poor	None
8		1		5	Fair	None
9		2	2	12	Poor	None
10	4			8	Poor	None
11	5			8	Poor	None
12		2		8	Poor	None
13		1	2	10	Fair	None
14	1	1	1	10	Fair	None
15	1			6	Fair	None
16	1			6	Fair	None
17	2			6	Fair	None
18		3		5	Fair	None
19			1	5	Inaccessible	N/A
20		12 (estimated)	2	45	Inaccessible	N/A
21		10 (estimated)		20	Inaccessible	N/A
22			1	10	Inaccessible	N/A
23			1	10	Fair	N/A
24	2			8	Fair	None
25		2		8	Fair	None
26		1		5	Fair	None
27		2		6	Fair	None
28	3			7	Fair	None
29	2			10	Fair	None

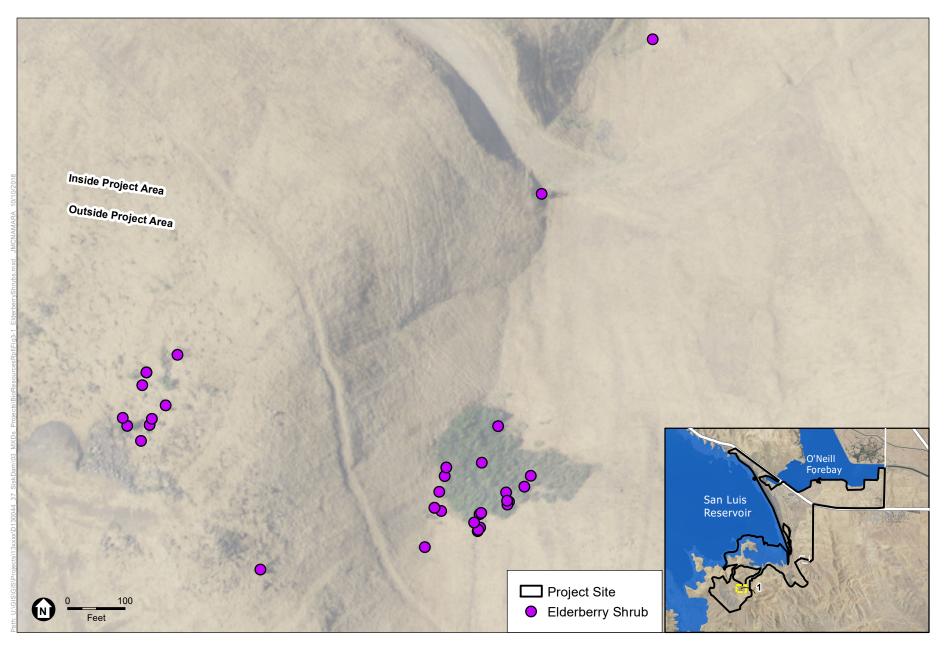
## TABLE 3-2 ELDERBERRY SHRUB CHARACTERISTICS

	Number of Stems by Size Class			Canopy		Presence of Exit Holes or
Shrub Number	1"-3" 3" to 5"		>5"	Diameter in Feet	General Health	other VELB Evidence
30	5	3		10	Fair	None
31	5	1		9	Fair	None
32	1			3	Poor	None
33	2			5	Poor	None
34	1	1		10	Fair	None
35		2		8	Fair	None
36	1			2	Poor	None
37			1	17	Poor	None
38			6	6	Poor	None
39	1		1	1	Poor	None

TABLE 3-2 ELDERBERRY SHRUB CHARACTERISTICS (CONTINUED)

SOURCE: ESA

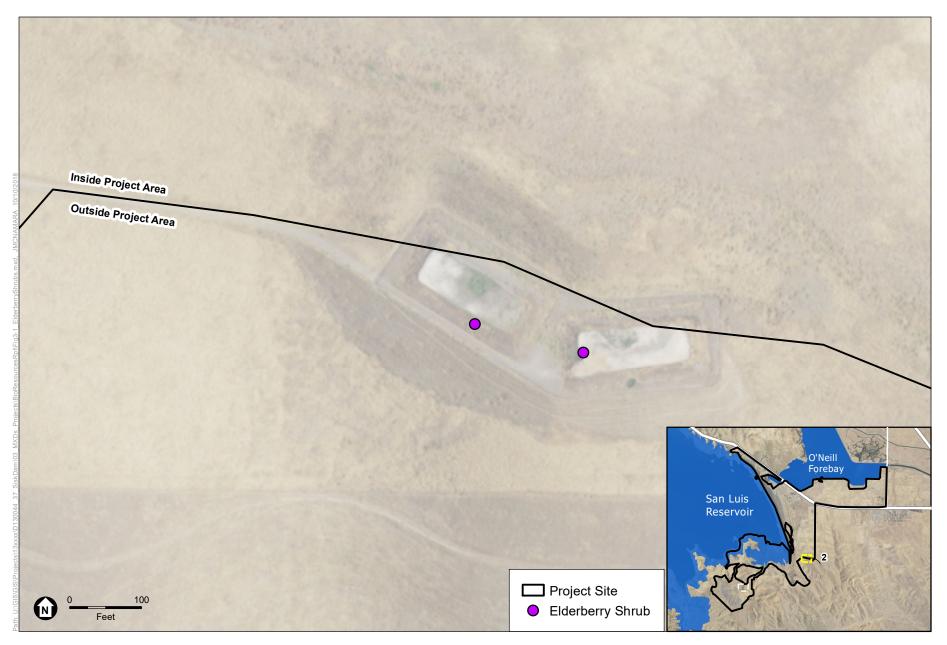
A single VELB occurrence is reported within 20 miles of the study area: a 1987 species collection from North Fork Los Banos Creek, about 5.3 miles southeast of the Basalt Campground (CDFW, 2018). Each of the elderberry shrubs observed during the assessment are growing on dry slopes and were considered to be in generally poor health conditions. Upon reviewing 39 elderberry plants, no VELB exit holes were observed on any of the inspected plants. An additional four shrubs were identified but could not be inspected due to access limitations. These shrubs could potentially support VELB. If VELB were present within identified elderberry shrub thickets, evidence of their presence would have been evident on the inspected plants. This species is considered to have a low potential to occur on inspected plants and a low to moderate potential to occur on inaccessible elderberry shrubs.



SOURCE: USDA, 2016; CDFW, 2018; CDM, 2018; ESA, 2018

B.F. Sisk Dam Safety of Dams Modification Project

Figure 3-1 Location of Elderberry Shrubs in the B.F. Sisk Dam Project Study Area



SOURCE: USDA, 2016; CDFW, 2018; CDM, 2018; ESA, 2018

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**Figure 3-2** Location of Elderberry Shrubs in the B.F. Sisk Dam Project Study Area



B.F. Sisk Safety of Dams Modification Project. 130314.04 Source: ESA Figure 3-3 Individual and Clumped Elderberry Shrubs were Identified in Poor to Moderate Health near the Basalt Quarry Area Photo date: September 13, 2018



- B.F. Sisk Safety of Dams Modification Project. 130314.04

Figure 3-4 Two Views of the Mixed Elderberry Thicket near the Basalt Quarry Photo date: September 13, 2018

Source: ESA

# CHAPTER 4 California Tiger Salamander

## 4.1 Summary of Findings

A focused review was performed by ESA biologists within the study area to examine potential breeding habitat for the California tiger salamander (*Ambystoma californiense*). This review considered the sites described in a North State Resources, Inc. (NSR) (2010a) California tiger salamander site assessment, and additionally considered two off-site stock ponds in the regional vicinity. Potential California tiger salamander breeding habitat was identified in two locations in the study area, both near Basalt Quarry, and at two sites located to the south. The potential on-site breeding areas include Willow Spring stock pond located north of Basalt Quarry and a seasonal pool in the same general vicinity. Potential off-site aquatic breeding habitat was identified at three locations: a spring-fed stock pond located 0.8-mile southeast of Basalt Quarry (Off-site Pond #1); a seasonal impoundment approximately 0.6-mile south of Basalt Quarry (Off-site Pond #2); and stock ponds located 0.3-mile and 1.2-miles west of Basalt Quarry (Off-site Pond #3, and #4, respectively). The Willow Spring stock pond provides high quality breeding habitat for the California tiger salamander and is a possible source of adult tiger salamanders that have been anecdotally reported in the Basalt Use Area (U.S. Bureau of Reclamation and California Department of Parks and Recreation, 2005).

A full species account for the California tiger salamander was provided in NSR (2010a) and is not repeated in this report.

# 4.2 Survey Methods

California tiger salamander specialist B. Pittman, CWB, was the lead surveyor for the assessment, with assistance from species experts K. Bayne and E. Holmboe. Mr. Pittman holds a USFWS 10a(1)(A) recovery permit for California tiger salamander. Aquatic features in the study area were reviewed on by the above personnel on September 10 to 13, 2018, with assistance from wildlife biologist J. McNamara.

In advance of the survey, ESA biologists performed the following tasks:

- Review of aerial photographs on Google Earth from August 1998 through March 2018 to examine the ponding characteristics of aquatic sites and locations of perennial water.
- Examine the NSR (2010a) California tiger salamander site assessment report to locate prior survey areas, pond locations, and ascertain ponding conditions.

• A review of historical and recent California tiger salamander distribution records from the California Natural Diversity Database (CNDDB) (CDFW, 2018) and scientific literature (Figure 4-1).

Following this desktop review, a daytime field review was performed of select aquatic sites to examine their size, ponding characteristics, and seasonal hydrology. The day survey included direct review of aquatic sites using the methodology described in the 2003 *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or A Negative Finding of the California Tiger Salamander*, jointly issued by the USFWS and CDFW (USFWS, 2003). The habitat assessment prepared by NSR was relied upon for the descriptions of all habitat features in the study area; excepting two that that provide potential breeding habitat.

# 4.3 Survey Results

Two potential aquatic breeding sites for California tiger salamander were identified in the study area (**Figures 4-2 and 4-3**), and two such features were identified outside of the study area, southeast of the Basalt Quarry and Basalt Campground area (**Figure 4-4**; also see **Figure 5-4**). The first two sites are within B.F. Sisk Safety of Dams Modification Project area and the other two are within the typical movement range of the California tiger salamander. Three of the features directly reviewed, and the fourth off-site area is considered to provide potential breeding habitat based on a review of aerial photographs and review using binoculars from approximately 0.25-mile. These sites are further described in **Table 4-1**.

The California tiger salamander has not been verified within the Study Area; however, has been anecdotally described from the Basalt Use Area (U.S. Bureau of Reclamation and California Department of Parks and Recreation, 2005).

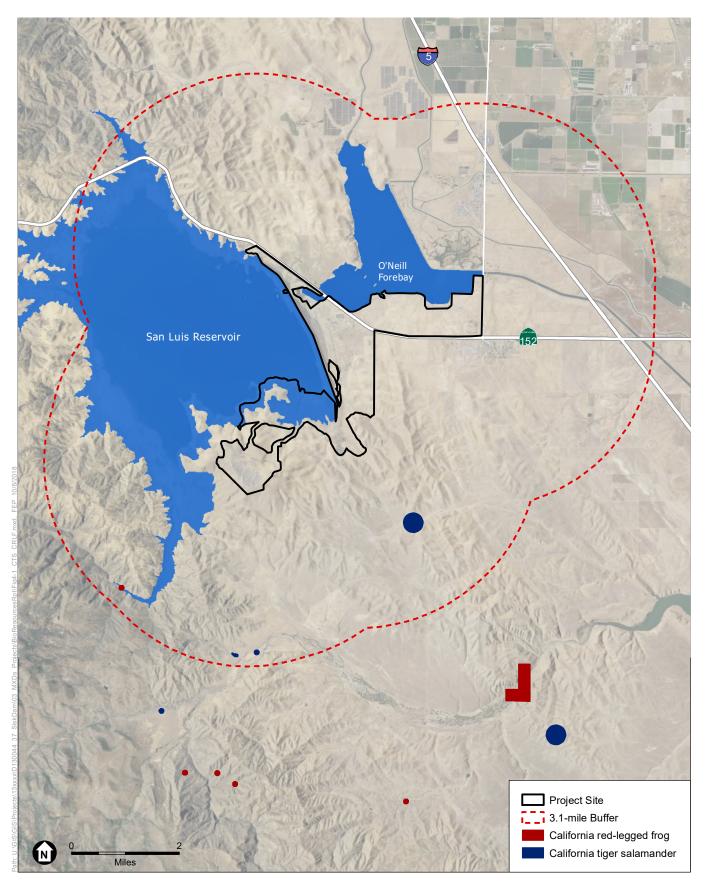
The California tiger salamander should be presumed to use Willow Spring pond, which additionally supports California red-legged frog breeding. In areas where the range of the California tiger salamander and California red-legged frog overlap, numerous accounts of sympatry are often reported from perennial and ephemeral ponds (Alvarez et al., 2013). California tiger salamanders should also be presumed to breed in each of the other three sites noted in this assessment, unless separate field surveys verify the absence of appropriate ponding conditions during a normal rainfall year. Based on resource agency guidance, this species has bene described in upland habitat up to 2 km (1.24 miles) from aquatic breeding sites under optimal movement conditions. Aside from the steep topography of the area, there are no barriers to California tiger salamander movement into or within the study area.

#### TABLE 4-1

#### POTENTIAL CALIFORNIA TIGER SALAMANDER BREEDING SITES

Pond Identification	Size	Habitat Conditions	Hydrology
Willow Spring Pond	0.17 acre	Spring-fed stock pond with dense cattails in the center surrounded by a broad ring of aquatic habitat. Duckweed seasonally provides cover within ponded areas. An extensive California ground squirrel colony is present upslope from the pond, providing hundreds of potential refuge burrows. California red-legged frog present at this site.	Perennial water; greater than 1.5 feet in numerous locations
Basalt Quarry Pond	0.04 acre	Seasonal impoundment perched on the hillside. Numerous small mammal burrows on the surrounding hillside. No emergent vegetation.	Seasonal pond that appears to have borderline hydrology to support the CTS aquatic life cycle. The upslope area is seasonally wet from natural seepage and may sustain suitable aquatic breeding conditions.
Off-site Pond #1; 0.8-mile Southeast of Basalt Quarry	0.15 acre	Seasonal impoundment perched on the hillside. Numerous ground squirrel burrows on the surrounding hillside. Feature is fed by an upslope spring that lengthens the duration of ponding. No emergent vegetation Subject to cattle grazing. Also considered potential for California red- legged frog.	Seasonal pond that retains water into summer months. An upslope seep provides shallow year-round pooled water in cattle hoof depressions.
Off-site Pond #2; 0.6-mile south of Basalt Campground	0.18 acre	Seasonal impoundment that could not be reached for surveys, but appears to provide appropriate conditions of breeding. No emergent vegetation; grazed.	Seasonal pond that retains water into summer months.
Off-site Pond #3; 0.3-mile west of Basalt Quarry	0.08 acre	Seasonal impoundment that could not be reached for surveys, but appears to provide appropriate conditions of breeding. No emergent vegetation; grazed.	Seasonal pond that retains water into summer months.
Off-site Pond #4; 1.2-miles west of Basalt Quarry	0.50 acre	Perennial impoundment that could not be reached for surveys, but appears to provide appropriate conditions of breeding. Extensive cattail growth; grazed.	Perennial water

Source: ESA



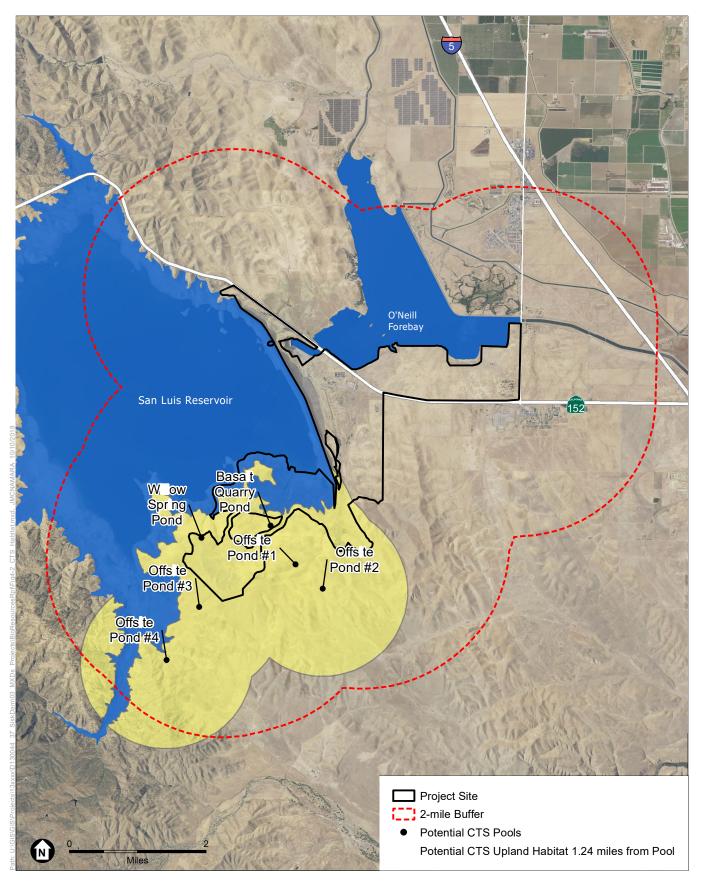
SOURCE: USDA, 2016; CDFW, 2018; CDM, 2018; ESA, 2018

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#### Figure 4-1

Occurrences of California Tiger Salamander and California Red-legged Frog within 3.1 miles (5 km) of the B.F. Sisk Dam Project Area



SOURCE: USDA, 2016; CDFW, 2018; USFS, 2017; CDM, 2018; ESA, 2018

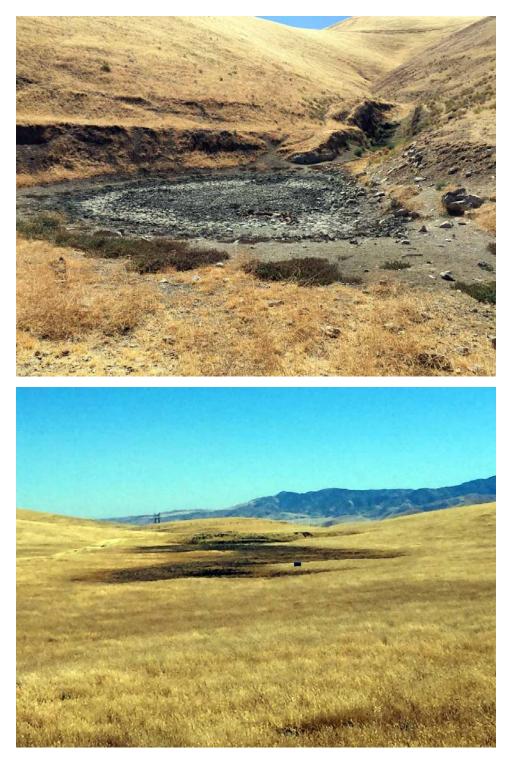
B.F. Sisk Dam Safety of Dams Modification Project

**Figure 4-2** Location of Potential California Tiger Salamander Habitat within 2 miles of the B.F. Sisk Dam Study Area





B.F. Sisk Safety of Dams Modification Project. 130314.04 Source: ESA Figure 4-3 Potential California Tiger Salamander Breeding Habitat at Willow Spring Pond (top) and "Basalt Quarry Pond" (bottom) Photo date: September 13, 2018



- B.F. Sisk Safety of Dams Modification Project. 130314.04

Figure 4-4 Potential California Tiger Salamander Breeding Pools at Off-site Pond #1, 0.8-mile Southeast of Basalt Quarry (top) and Off-site Pond #2, 0.6-mile South of Basalt Campground (bottom). Photo date: September 13, 2018

Source: ESA

# CHAPTER 5 California Red-legged Frog

## 5.1 Summary of Findings

A focused review was performed by ESA biologists within the study area to examine perennial aquatic sites as potential California red-legged frog (*Rana draytonii*) habitat. This review considered the sites described in a North State Resources, Inc. (NSR) (2010b) California red-legged frog habitat assessment, and additionally considered one off-site stock pond in the regional vicinity. During non-protocol day and night spotlighting surveys, a California red-legged frog population was detected in the study area at the Willow Spring pond located north of Basalt Quarry. Potential high quality aquatic breeding habitat was also identified in a spring-fed stock pond, Off-site Pond #1 located 0.63-mile northeast of the Basalt Hill summit, and Off-site Pond #3 located 0.3-mile west of Basalt Quarry. The survey confirmed NSR (2010b) findings that California red-legged frogs are unlikely to be encountered in other aquatic habitat associated with Domengine Spring, near Basalt Campground, was also surveyed and is considered unlikely to support this species. A full species account for the California red-legged frog was provided in NSR (2010b) and is not repeated in this report.

### 5.2 Survey Methods

California red-legged frog specialists K. Bayne and B. Pittman, CWB, were the lead surveyors for the assessment. Ms. Bayne and Mr. Pittman each hold USFWS 10a(1)(A) recovery permits for California red-legged frog. Focused day and nighttime surveys of aquatic features in the study area were performed by B. Pittman, K. Bayne, J. McNamara, and E. Holmboe from September 10 to 13, 2018.

In advance of the survey, ESA biologists performed the following tasks:

- Review of aerial photographs on Google Earth from August 1998 through March 2018 to examine the ponding characteristics of aquatic sites and locations of perennial water.
- Examine the 2010 NSR habitat assessment report to locate prior survey areas, pond locations, and ascertain ponding conditions.
- A review of historical and recent California red-legged frog distribution records from the California Natural Diversity Database (CNDDB) (CDFW, 2018) and scientific literature.

Following this desktop review, day and nighttime field surveys were performed at select aquatic sites. The day survey included direct review of upland and aquatic habitat at perennial aquatic

sites to verify on-site aquatic habitat and survey for amphibian populations. Surveyors used the visual-encounter survey method, as described in the USFWS (2005) survey protocol. This method entails walking the survey area while repeatedly scanning and listening for amphibians.

Day surveys were conducted on September 10-13, 2018 between 9 am and 5 pm. Night surveys were conducted at two locations on September 13, 2018 between 2040 hours to 2200 hours. Surveys were performed under optimal visibility and weather conditions, under dry, calm and relatively warm conditions. Wind speed was generally under 2 to 3 mph and the air temperature ranged from 70 to 75 degrees Fahrenheit. All encountered amphibians were identified with 100 percent certainty. During night surveys, each surveyor used a 230-lumen Nite Lite Wizard II LED headlamp (a 6-volt, a Service-approved light for California red-legged frog surveys) and 10x42 binoculars.

### 5.3 Survey Results

The CNDDB reports the nearest California red-legged frog as approximately 6 miles to the east and 5 miles to the south of the study area. In addition, the NSR (2010b) habitat assessment concluded no potential for species occurrence in the study area. Perennial water seepage drains below B.F. Sisk Dam were reviewed for their potential to provide California red-legged frog habitat. Aquatic habitat is present in some features, as noted in the NSR (2010b) report; however, these perennial aquatic sites are either small, provide no cover for frogs, or are isolated and not considered accessible to red-legged frogs.

Based on the desktop review and daytime review of field sites, nighttime surveys were performed at two high quality perennial aquatic sites: Willow Spring and Domengine Spring. A California red-legged frog breeding population was identified during surveys at the Willow Spring stock pond (37.02791N, -121.10020W) (Figures 5-1, 5-2, and 5-3). One adult and eight subadult California red-legged frogs were identified in the pond during the night survey. Details for this occurrence are provided in the CNDDB reporting form in Appendix A.

In addition, potential habitat for this species was identified during daytime surveys in a spring-fed stock pond located approximately 0.63-mile northwest of the Basalt Hill summit (see Figures 5-1 and 5-3). This seasonal pond is fed by a perennial spring. It is believed that the pond may serve as a suitable California red-legged frog breeding site, drying by mid-summer. The adjacent spring provides year-round non-breeding aquatic habitat that, in combination with the pond and regionally-occurring California red-legged frog populations, could support a breeding population. This pond is located outside of the B.F. Sisk Safety of Dams Modification Project area, on grazing land owned by Reclamation.

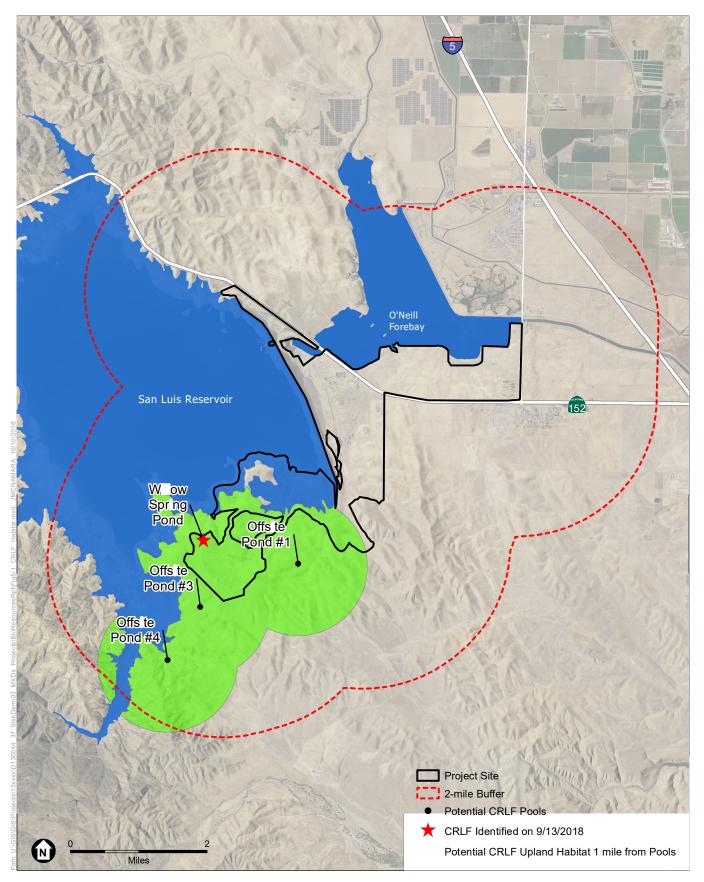
Pond Identification	Size	Habitat Conditions	Hydrology
Willow Spring Pond	0.17 acre	Spring-fed stock pond with dense cattails in the center surrounded by a broad ring of aquatic habitat. California red-legged frog present at this site.	Perennial water; greater than 1.5 feet in numerous locations
Off-site Pond #1; 0.8-mile Southeast of Basalt Quarry	0.15 acre	Seasonal impoundment perched on the hillside. Numerous ground squirrel burrows on the surrounding hillside. Feature is fed by an upslope spring that lengthens the duration of ponding. No emergent vegetation Subject to cattle grazing. Also considered potential for California tiger salamander.	Seasonal pond that retains water into summer months. An upslope seep provides shallow year-round pooled water in cattle hoof depressions.
Off-site Pond #3; 0.3-mile west of Basalt Quarry	0.08 acre	Seasonal impoundment that could not be reached for surveys, but appears to provide appropriate conditions for breeding. No emergent vegetation; grazed.	Seasonal pond that retains water into summer months.
Off-site Pond #4; 1.2-miles west of Basalt Quarry	0.50 acre	Perennial impoundment that could not be reached for surveys, but appears to provide appropriate conditions of breeding. Extensive cattail growth; grazed. High likelihood of species' presence.	Perennial water; depth unknown

#### TABLE 5-1

#### POTENTIAL CALIFORNIA RED-LEGGED FROG BREEDING SITES

Source: ESA

Based on survey findings, the California red-legged frog may be encountered in select aquatic sites and surrounding upland habitat near Basalt Quarry, south of the reservoir. This species could potentially enter active work areas both from the Willow Spring pond to the north of the work area, or from Off-site Pond #1 or Pond #3 to the south and west of the study area (if present at these locations). Hence, precautions are warranted to avoid impacts to this species.



SOURCE: USDA, 2016; CDFW, 2018; USFS, 2017; CDM, 2018; ESA, 2018

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#### Figure 5-1

Location of Known and Potential California Red-legged Frog Habitat within 2 miles of the B.F. Sisk Dam Study Area



— B.F. Sisk Safety of Dams Modification Project. 130314.04 Figure 5-2

Source: ESA

Surveyed Habitat in the Study Area included Two Spring-fed Drainages: Domengine Spring near Basalt Campground (top) and Willow Spring Pond (bottom). Photo date: September 12, 2018



- B.F. Sisk Safety of Dams Modification Project. 130314.04

Figure 5-3

Source: ESA

A Breeding Population of California Red-legged Frogs was Detected at the Willow Spring Pond. Photos show an Adult Frog (top) and Subadult Frog (bottom). Photo date: September 13, 2018



- B.F. Sisk Safety of Dams Modification Project. 130314.04

Figure 5-4

Source: ESA

Two Views of Potential CRLF Habitat in a Spring-fed Off-site Pond #1, 0.63-mile Northwest of the Basalt Hill Summit. Top Photo Shows Perennial Standing Water. Photo date: September 13, 2018

# CHAPTER 6 Burrowing Owl and Swainson's Hawk

# 6.1 Summary of Findings

This chapter presents the results of a habitat assessment for burrowing owl (*Athene cunicularia*) and Swainson's hawk (*Buteo swainsoni*) within the study area defined in Chapter 1. The purpose of the habitat assessment is to identify active and potential burrowing owl and Swainson's hawk foraging and nesting habitat.

To summarize survey findings, no burrowing owls, active burrows, or burrowing owl sign was identified in the study area. In addition, State Parks employees do not report any recent burrowing owl sightings in the study area. Low annual grassland habitat with extensive ground squirrel burrows occurs throughout the area below the dam and provides high quality nesting and foraging habitat for this species. Annual grasslands near the Medeiros Use Area and throughout the study area provide intermittent, high quality habitat for this species.

No Swainson's hawks were observed during surveys, possibly due to the late, post-migration survey timing. The CNDDB reports recent nesting in two trees stands in the Medeiros Use Area grassland area and trees near Basalt Campground. Individual tree and tree stands in the Medeiros Use Area and similar habitat west of SR 152 provide suitable foraging habitat for Swainson's hawk.

# 6.2 Species Accounts

### **Burrowing Owl**

Western burrowing owls are relatively small, semicolonial owls, and are mostly residents of open dry grasslands and desert areas. These owls use burrows excavated by ground squirrels and other small mammals during the breeding and non-breeding season. In areas where the number and availability of natural burrows is limited, owls may occupy human-made burrows such as drainage culverts, cavities under piles of rubble, discarded pipe, and other tunnel-like structures (Zeiner et al., 1990a). Burrowing owls hunt from perches and are opportunistic feeders. They consume arthropods, small mammals (e.g., meadow voles), birds, amphibians, and reptiles. Insects are often taken during the day, while small mammals are taken at night (Zeiner et al., 1990a).

The CNDDB (2018) confirms a local burrowing owl record from 2003, with two wintering owls observed about one mile southeast of the California Department of Forestry and Fire Protection (CAL FIRE) station, near the intersection of Basalt Road and Gonzaga Road. Twelve additional occurrences are reported by the CNDDB within 10 miles of the study area (**Figure 6-1**). Burrowing owl nesting has not been observed or reported in the study area.

### Swainson's Hawk

This large migratory hawk nests throughout North America and winters in southern South America. Swainson's hawks begin arriving in California in late February and depart for their wintering grounds in early September (Woodbridge, 1998). Nests are typically constructed in sturdy trees within or near agricultural lands, riparian corridors, and roadside trees. Nests are composed of a platform of sticks, bark, and fresh leaves. Swainson's hawks reside in the Central Valley from March through October, with eggs typically laid in April and early May (peaking in late April).

The Swainson's hawk nesting range is restricted to portions of the Central Valley and Great Basin regions, where suitable habitat is still present. The highest density currently is in the Central Valley, between Sacramento and Modesto, and in the northern San Joaquin Valley (Woodbridge, 2004).

The CNDDB reports Swainson's hawk nesting in the study area, with three active nest sites reported in 2006 including two in Medeiros Use Area grasslands and one at Basalt Campground. Additionally, numerous Swainson's hawk nesting attempts are reported at the O'Neill Forebay Wildlife Area managed by CDFW from 2001 top 2015 (CDFW, 2018).

# 6.3 Survey Methods

The burrowing owl survey and habitat assessment was performed from September 10 to 13, 2018 by ESA biologists E. Holmboe, K. Bayne, and B. Pittman, with assistance from J. McNamara. The lead surveyors each have more than a 15 years of focused burrowing owl and Swainson's hawk survey experience.

In advance of the survey, ESA biologists performed the following tasks:

- A review of aerial photographs on Google Earth from August 1998 through March 2018 to examine nesting areas and review off-site nesting areas.
- An inventory of historical and recent burrowing owl and Swainson's hawk occurrence records from the California Natural Diversity Database (CNDDB) (CDFW, 2018) and scientific literature (Figure 6-1).

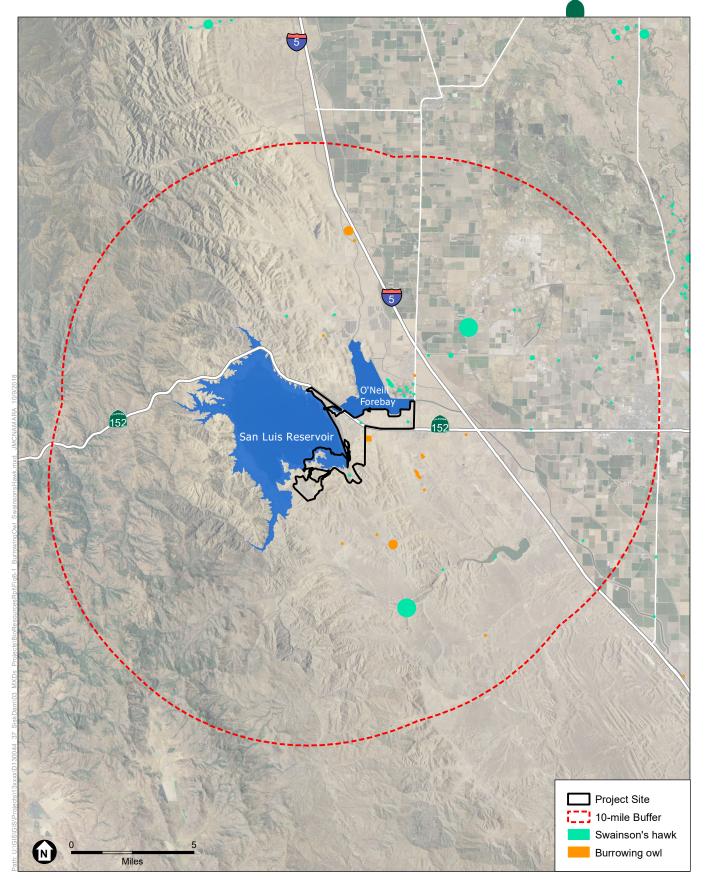
The burrowing owl assessment followed the survey guidelines described in the California Department of Fish and Wildlife (CDFW) Staff Report on Burrowing Owl Mitigation (herein referred to CDFW Staff Report) (CDFW, 2012). The description of habitat conditions in the study area includes an assessment of the presence and extent of potential burrowing owl nesting habitat (burrows) and foraging habitat (annual grasslands). The work completed and described in this report fulfills the Habitat Assessment and Reporting criteria as described in the CDFW Staff Report (CDFW, 2012).

The Swainson's hawk habitat assessment was performed outside of CDFW's recommended survey period for this species, which generally runs from April 1 through July 15 (CDFW, 2010). Birds were likely Hence, a survey for individual birds could not be performed. Surveyors reviewed individual trees and tree groves for evidence of nesting and recorded evidence of nesting great homed owls, red-tailed hawks, red-shouldered hawks and other potentially competitive species.

### 6.4 Survey Results

Potential burrowing owl nesting and foraging habitat was identified in grasslands throughout the study area; however, no evidence of burrowing owl presence was noted during transect surveys within the highest quality habitat areas. Based on the field review, the distribution of potential burrowing owl nesting habitat is shown in **Figure 6-2**.

While Swainson's hawk nesting was not observed in the study area, eucalyptus, cottonwoods and other trees provide potential nesting habitat. Grasslands throughout the study area provide potential foraging habitat. The distribution of potential Swainson's hawk nesting and foraging habitat is also shown in Figure 6-2.



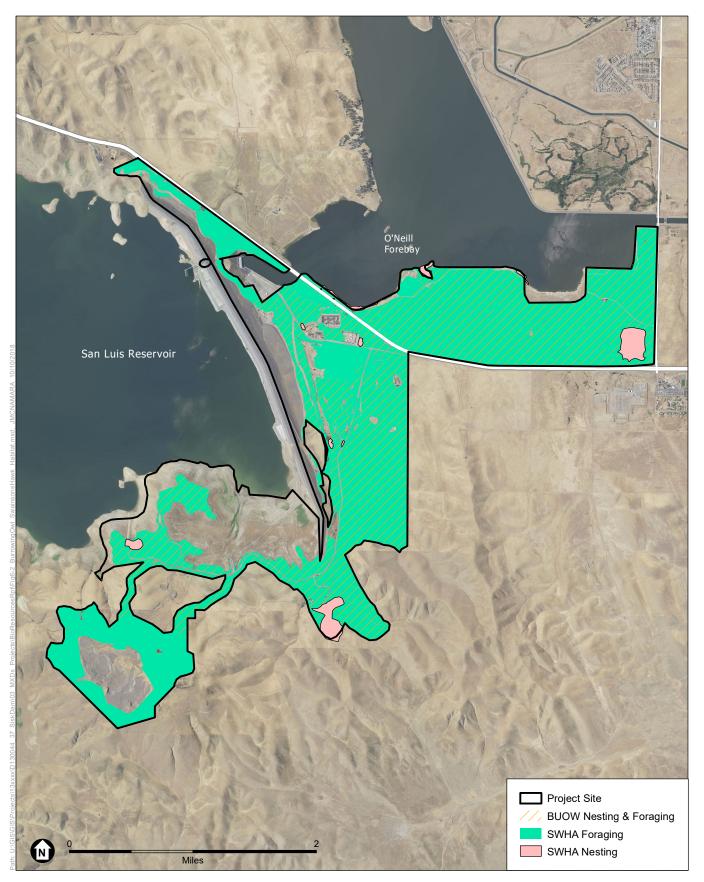
SOURCE: USDA, 2016; CDFW, 2018; CDM, 2018; ESA, 2018

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#### Figure 6-1

Occurrences of Burrowing owl and Swainson's Hawk within 10 miles of the B.F. Sisk Dam Project Study Area





SOURCE: USDA, 2016; CDFW, 2018; CDM, 2018; ESA, 2018

B.F. Sisk Dam Safety of Dams Modification Project

**Figure 6-2** Location of Potential Burrowing Owl and Swainson's Hawk Habitat in the B.F. Sisk Dam Project Study Area





– B.F. Sisk Safety of Dams Modification Project. 130314.04 Figure 6-3

Source: ESA

Much of the Study Area Supports Annual Grasslands that are Suitable for Burrowing Owl Nesting; seen from atop B.F. Sisk Dam looking toward O'Neill Forebay (top) and in Greater Detail (bottom). Photo date: September 12, 2018



- B.F. Sisk Safety of Dams Modification Project. 130314.04

### Figure 6-4

Grasslands in the Medeiros Use Area are Suitable for Burrowing Owl Nesting. The CNDDB Reports Recent Swainson's Hawk Nesting in the Eucalyptus Grove in this Area. Photo date: September 12, 2018

Source: ESA

# CHAPTER 7 American Badger and San Joaquin Kit Fox

# 7.1 Summary of Findings

Spotlighting surveys were conducted on four consecutive nights in September 2018, totaling 10 survey hours within the study area (2.5 hours each). Surveys resulted in the identification of 94 animals in the study area comprising 10 identified species, and one unidentified canid that was observed at a great distance. San Joaquin kit were not observed during the spotlighting survey. An American badger was detected during spotlighting surveys near the intersection of Basalt Road and Gonzaga Road.

Neither American badger nor San Joaquin kit fox were identified at 12 camera scent stations that were established throughout the study area.

## 7.2 Species Accounts

### American Badger

American badgers are rather large, robust, short-legged mammals with broad bodies. They have a short bushy tail, small eyes and ears, shaggy grayish fur, and distinct white and black markings on the face. Badger front feet are large, with claws measuring about 1-inch long that are used for digging. Badgers prey primarily on gophers, ground squirrels, marmots, and kangaroo rats, but will also eat a variety of other animals, including mice, woodrats, reptiles, birds and their eggs, bees and other insects. In California, American badgers occupy a diversity of habitats. Grasslands, savannas, and mountain meadows near the timberline are preferred, though they can be found in deserts as well. The principal requirements seem to be sufficient food, friable soils, and relatively open, uncultivated ground.

In California, badgers range throughout the state, except for the humid coastal forests of northwestern California in Del Norte County and the northwestern portion of Humboldt County (Williams, 1986).

This species is expected to occur in moderate densities in grassland habitats throughout the study area, with individuals observed during the survey below the dam, and anecdotally reported by State Parks staff in the Basalt Day Use area, north of Basalt Quarry.

### San Joaquin Kit Fox

The San Joaquin kit fox is a permanent resident of arid grasslands and open scrubland, where friable soils are present. Dens are required year-round for reproduction, shelter, temperature regulation, and protection from predators (USFWS, 1998). Historically their habitat included native alkali

marsh and saltbush scrub of the valley floor, but the availability of such habitats has diminished markedly due to agricultural conversion. Grasslands with friable soils are considered the principal habitat for denning, foraging, and dispersal, while open woodland areas and agricultural lands provide foraging and dispersal habitat. Kit foxes will use habitats that have been extensively modified by humans, including grasslands and scrublands with active oil fields, wind turbine fields, and agricultural matrices (USFWS, 1998).

San Joaquin kit fox diet characteristics vary subtly in the northern portion of their range from other portions of their range. In the Altamont region, the kit fox diet varies seasonally and by locality based on local prey availability. While kangaroo rats (*Dipodomys* spp.) are an important component of the kit fox diet in their southern range, kit foxes in the Altamont region preferentially prey upon California ground squirrel, insects, cottontails (*Sylvilagus auduboni*), black-tail jackrabbits (*Lepus californicus*), and small rodents such as voles, rats and mice (Hall, 1983; Orloff et al., 1986). Other prey that may be taken opportunistically includes ground-nesting birds, reptiles, and insects (Laughlin, 1970).

San Joaquin kit foxes occur only in and around the Central Valley, inhabiting open habitat in the San Joaquin Valley and surrounding foothills. Kit fox population densities are greatest in the southern portion of their range. Kit fox populations in the northern portion of their range are highly fragmented and sparsely distributed, where foxes occupy foothill grasslands because much of their former habitat on the valley floor has been eliminated.

At least 24 San Joaquin kit fox sightings area reported within 10 miles of the study area (CDFW, 2018), including multi-year observations of numerous individuals. Within 0.75 to 5.5 miles to the south of the study area, a single CNDDB occurrence includes sightings of 185 individuals between 1984 to 2005 (**Figure 7-1**). The next nearest sighting to the south describes 291 individuals observed from 1972 to 2003 (CDFW, 2018). Most of the recently documented kit fox sightings are pre-2005, and occur south and southeast of the study area, with scattered occurrences to the northeast (Figure 7-1).

# 7.3 Survey Methods

A detailed San Joaquin Kit Fox Evaluation report prepared by North State Resources (2010c) characterized the quality and distribution of potential habitat for his species in the study area, and the location of spotlighting activities in the regional area. The habitat characterization describes present-day conditions within the study area and surrounding region. The present non-protocol survey and site assessment was performed to identify the potential presence of large carnivores, including San Joaquin kit fox and American badger, through spotlighting surveys and the placement of camera scent stations.

*Spotlighting Surveys.* Spotlighting surveys were conducted each night between Monday, September 10 and Thursday, September 13 following the following the CDFW Region 4 Approved Survey Methodologies for Sensitive Species (1990). Surveys began each night between 1930 hours and 2000 hours and continued for 2 to 3 hours. Weather conditions during the surveys were optimal, with wind speed generally under 2 to 3 mph and air temperature ranging from 70 to 75 degrees Fahrenheit. The moon phase was new moon on September 10, and waxing crescent for other survey days.

One team of two to four biologists conducted the surveys. Survey personnel are identified in Table 7-1. Surveys were performed from paved and dirt roads within the study area, with the vehicle survey routes shown in **Figure 7-2**. A high-clearance vehicle was used to ensure unobstructed views of the surrounding areas. Surveyors used two high-output (1,000,000-candlepower) spotlight per vehicle. Survey routes were driven at speeds under 10 miles per hour.

Survey Date	Lead Biologists	Assistant
September 10, 2018	Brian Pittman	Julie McNamara
September 11, 2018	Brian Pittman	Julie McNamara
September 12, 2018	Brian Pittman Even Holmboe Kelly Bayne	Julie McNamara
September 13, 2018	Brian Pittman Even Holmboe Kelly Bayne	Julie McNamara

TABLE 7-1
SPOTLIGHTING PERSONNEL

Wildlife species that were identified during surveys were identified using 10x42 power binoculars, and their locations were generally recorded on data sheets. All wildlife observations were confirmed by multiple observers.

*Camera Stations*. Camera stations were established at twelve locations situated throughout the study area (Figure 7-2). The 1999 USFWS survey protocol recommends using a minimum density of 8 cameras per 640 acres. Due to the large size of the study area, cameras could not be placed at the recommended number. Hence, the survey was intended to be informational in nature and not intended as a presence-absence survey. Cameras were operated for four nights, with four cameras relocated during the survey to coincide with small mammal activity identified during spotlighting surveys.

Each camera station consisted of four Cabela's Outfitter 14MP infrared trail cameras and four Wildgame Innovations 14MP infrared trail cameras. Each camera was mounted to a wooden stake and baited with cat foot. Cameras were set up to high resolution and moderate sensitivity, with a series of three photos taken for each trigger event. The camera delay was set to 1 minute between successive trigger events. The date and time of each photograph was digitally stamped on the photograph.

## 7.3 Survey Results

*Spotlighting Surveys.* Spotlighting surveys were conducted on four consecutive nights in September 2018, totaling 10 survey hours within the study area (2.5 hours each). Surveys resulted in the identification of 94 animals in the study area comprising 10 identified species, and one unidentified canid that was observed at a great distance (**Table 7-2**). San Joaquin kit were not observed during the spotlighting survey. An American badger was detected during spotlighting surveys near the intersection of Basalt Road and Gonzaga Road. Details for this occurrence are provided in the CNDDB reporting form in **Appendix A**.

No other special-status wildlife species were observed during spotlighting surveys.

Tule elk (*Cervus canadensis nannodes*) were the most abundant mammal observed during surveys, followed by black-tailed jack rabbit (*Lepus californicus*) and Audubon's cottontail (*Sylvilagus audubonii*). Adult and juvenile coyote (*Canis latrans*) were noted during surveys south and west of SR 152; though this species was not identified in Medeiros Use Area grasslands.

One small canid was observed in the western portion of the Medeiros Use Area grasslands, but was observed from a distance (greater than 0.25-miles) and could not be confirmed to species. Due to the animal's distance from the observation point, only the eye shine and faint outline were observed. But its small size and gait were suggestive of a fox species and not a coyote.

*Camera Stations*. A total of 32 camera station nights were deployed during the survey effort comprised of eight cameras over the course of 4 nights. All eight cameras were set up on September 10, 2018 and operated for three days. Following the identification of an unidentified canid species during spotlighting surveys in the Medeiros Use Area, four cameras were subsequently moved to areas where small mammal activity was noted.

Cameras were set up on September 10 and taken down on September 14, 2018. During this period, camera stations detected common raven, raccoon, black-tailed jackrabbit, California ground squirrel, domestic cat, striped skunk, black-tailed deer, and small birds, as shown in **Table 7-3** and **Figures 7-3**, **7-4**, **7-5**, **and 7-6**. Neither San Joaquin kit fox nor American badger were observed during camera surveys.

Species Name	Sept. 10	Sept. 11	Sept. 12	Sept. 13	Total # Observations
American badger	0	0	0	1	1
Taxidea taxus					
Tule elk	10+	10+	10+	10+	40+
Cervus canadensis nannodes					
Black-tailed jack rabbit	10+	10+	1	10+	30+
Lepus californicus					
Barn owl	1	1	1	1	4
Tyto alba					
Great horned owl	2	0	0	0	2
Bubo virginianus					
Coyote	4	1	0	1	6
Canis latrans					
Audubon's cottontail	10+	0	1	1	12+
Sylvilagus audubonii					
Black-tailed deer	0	2	0	4	6
Odocoileus hemionus					
Raccoon	1	0	0	0	1
Procyon lotor					
Domestic cat	0	0	1	0	1
Felis catus					
Unknown canid <sup>a</sup>	0	0	1	0	1

TABLE 7-2 WILDLIFE OBSERVATIONS DURING SPOTLIGHTING SURVEYS

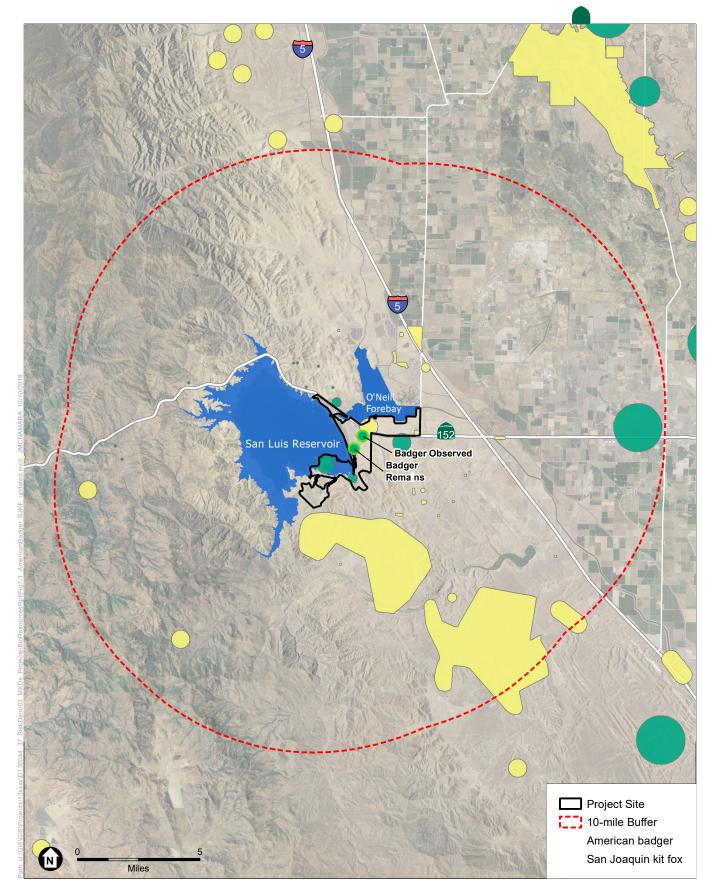
<sup>a</sup> The unidentified canid was observed in western portion of the Medeiros Use Area on September 12, 2018. Two trail cameras were subsequently deployed to this area, but species identification could not be confirmed. Source: ESA

Camera Station	Survey Dates	Number of Survey Days	Results
1	Sept. 10-14	4	Common raven, raccoon
2	Sept. 10-13	3	Black-tailed jackrabbit, red-tailed hawk, common raven, California ground squirrel, western meadowlark, small rodents
3	Sept. 10-14	4	Raccoon, striped skunk, domestic cat, coyote
4	Sept. 10-14	3	Black-tailed deer, meadowlark, violet-green swallow, loggerhead shrike
5	Sept. 10-13	3	No observations
6	Sept. 10-13	3	No observations
7	Sept. 10-14	4	No observations
8	Sept. 10-14	4	No observations
9	Sept. 13-14	1	No observations
10	Sept. 13-14	1	No observations
11	Sept. 13-14	1	No observations
12	Sept. 13-14	1	No observations

# TABLE 7-3 SUMMARY OF WILDLIFE OBSERVATIONS DURING SPOTLIGHTING SURVEYS

<sup>a</sup> The unidentified canid was observed in western portion of the O'Neill Forebay grasslands

Source: ESA



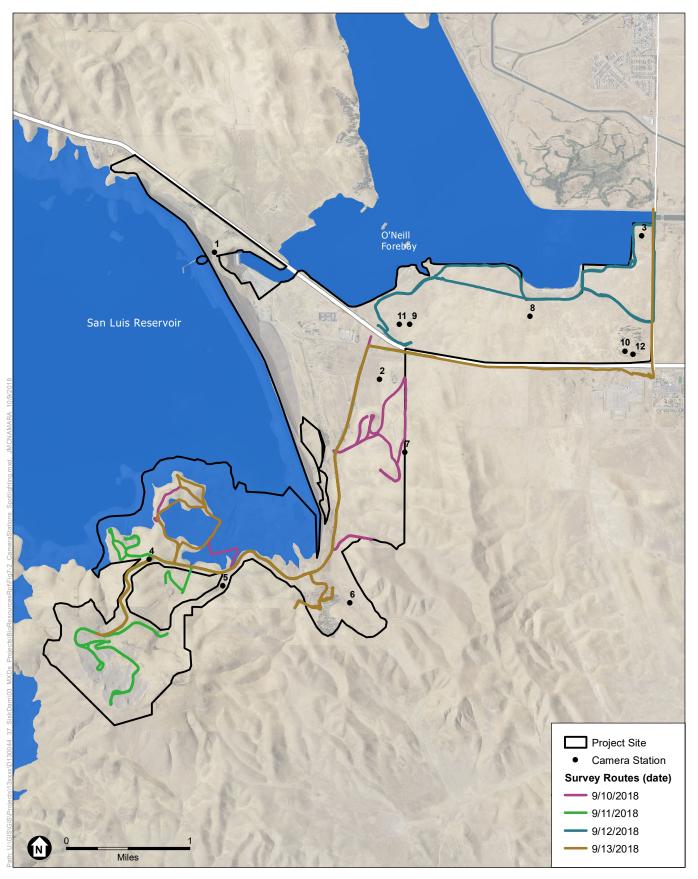
SOURCE: USDA, 2016; CDFW, 2018; CDM, 2018; ESA, 2018

B.F. Sisk Dam Safety of Dams Modification Project

### Figure 7-1

Occurrences of American Badger and San Joaquin Kit Fox within 10 miles of the B.F. Sisk Dam Project Study Area





SOURCE: USDA, 2016; CDFW, 2018; CDM, 2018; ESA, 2018

B.F. Sisk Dam Safety of Dams Modification Project





Source: ESA

– B.F. Sisk Safety of Dams Modification Project. 130314.04 Figure 7-3

One Station Examined Wildlife Movement across the B.F. Sisk Dam (top); as Noted in the NSR (2010c) Report, Potential Kit Fox Dens occur Throughout the Study Area. Photo date: September 10, 2018



- B.F. Sisk Safety of Dams Modification Project. 130314.04

Source: ESA Figure 7-4 Camera Station Photos Showing a Black-tailed Jackrabbit at Station 2 and Coyote at Station 3. Photo dates: September 11 and 14, 2018



B.F. Sisk Safety of Dams Modification Project. 130314.04
 Figure 7-5

Camera Station Photos Showing a Striped Skunk and Domestic Cat at Station 3 Photo dates: September 12 and 13, 2018

Source: ESA



- B.F. Sisk Safety of Dams Modification Project. 130314.04

Source: ESA Figure 7-6 Camera Station Photos Showing a Raccoon at Station 3 and Black-tailed Deer at Station 4. Photo dates: September 12, 2018

# CHAPTER 8 Special-Status Bats

## 8.1 Summary of Findings

This chapter details the findings of a special-status bat habitat assessment that was performed in the study area from September 10 to 14, 2018, and nighttime emergence surveys and acoustic monitoring that were performed at a concrete tunnel structure located near the Basalt Quarry on September 11, 2018. The assessment found potential tree roosting habitat for the western red bat (*Lasiurus blossevillii*) in day use areas and other locations in the study area. Yuma myotis (*Myotis yumanensis*) and Mexican free-tailed bat (*Tadarida brasiliensis*) roosting was verified in a cavernous concrete structure near the Basalt Quarry, though the structure itself will not be subject to direct project impacts. Potential bat roosting was identified in a second, similar concrete structure within the study area near the quarry.

## 8.2 Survey Methods

Daytime roost assessment surveys were performed on September 10-13, 2018 by E. Holmboe, with assistance from B. Pittman, K. Bayne, and J. McNamara. Structures within the study area were examined, including all crevices, cavities, and entrances, and other potential roost features to identify evidence of past or present bat activity, including staining, characteristic odor, fecal pellets, and live bats. In addition, eucalyptus, cottonwood, Chinese pistache, and other trees were examined within the Basalt Day Use Area and Basalt Campground, and in the Medeiros Use Area to identify suitable bat roost habitat in the form of cavities, crevices and exfoliating bark.

Bat emergence surveys and nighttime acoustic monitoring were performed on September 12, 2018, at a single man-made cave located north of Basalt Quarry (**Figures 8-1 and 8-2**). E. Holmboe was lead biologist for the nighttime bat emergence survey, with assistance from B. Pittman and J. McNamara. This site was selected for emergence surveys because bat sign was noted and bats were observed in crevices during daytime surveys using a 230-lumen Nite Lite Wizard II LED headlamp and 10x42 binoculars.

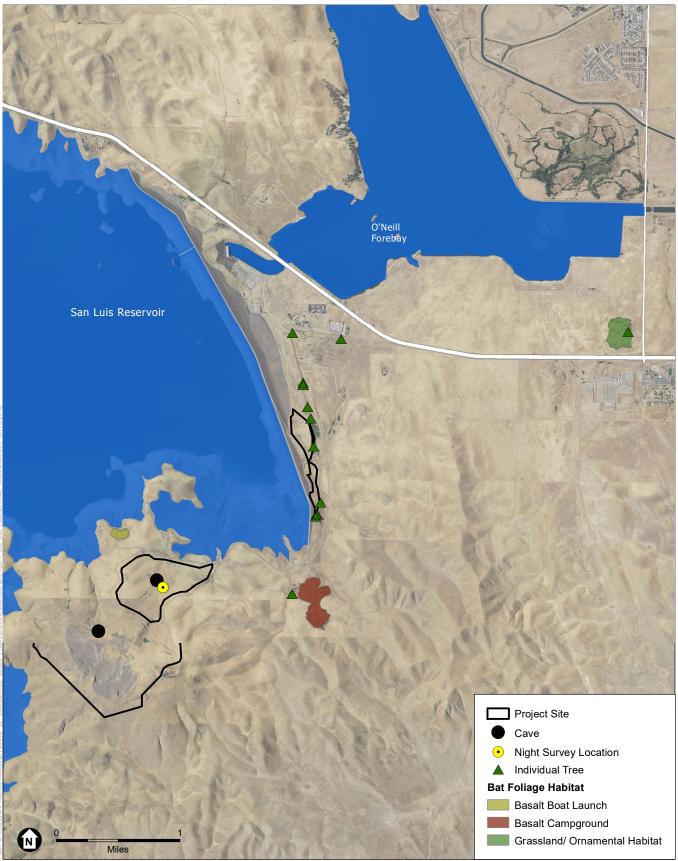
Bat emergence survey was performed between 1930 hours and 2030 hours on September 12, 2018. Surveys were performed under optimal visibility and weather conditions, under dry, calm and relatively warm conditions. Wind speed was generally under 2 to 3 mph with an air temperature of 85 degrees Fahrenheit.

Acoustic surveys were concurrently performed using a Wildlife Acoustics EM3+ bat detector. Acoustic data was post-processed using Sonobat version 3.2.1 to identify calls to species.

## 8.3 Survey Results

The Wildlife Acoustics EM3+ bat detector survey was performed at a single man-made cave for a single night survey. The meter identified a total of 951 bat call files and identified three species with 99% to 100% likelihood of presence.

The assessment found potential tree roosting habitat for the western red bat (*Lasiurus blossevillii*) in day use areas and other locations in the study area, as shown in Figure 8-1. Yuma myotis (*Myotis yumanensis*) and Mexican free-tailed bat (*Tadarida brasiliensis*) roosting was verified in a cavernous concrete structure near the Basalt Quarry, though the structure itself will not be subject to direct project impacts. Potential roosting by Yuma myotis and Mexican free-tailed bat are suspected at a second, similar concrete structure within the study area near the quarry. This location of all features discussed in this chapter is shown in Figure 8-1.

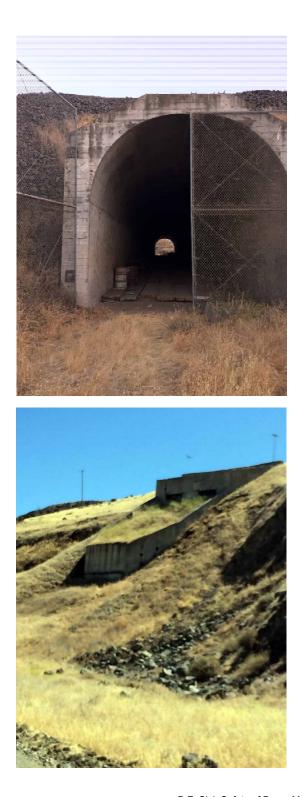


SOURCE: USDA, 2016; CDFW, 2018; CDM, 2018; ESA, 2018

B.F. Sisk Dam Safety of Dams Modification Project



ESA



B.F. Sisk Safety of Dams Modification Project. 130314.04 Source: ESA Figure 8-2 Two Cavernous Features in the Basalt Quarry Area Support Bat Roosts. Monitoring at the Tunnel (top) Confirmed Yuma Myotis and Mexican Free-tailed Bat Roosting. Photo date: September 12, 2018





- B.F. Sisk Safety of Dams Modification Project. 130314.04

Source: ESA

Figure 8-3 Individual Trees and Tree Stands at the Medeiros Use Area, Basalt Day Use Area, Basalt Campground, and Below B.F. Sisk Dam Provide Bat Roosting Habitat Photo date: September 12, 2018

# **CHAPTER 9** Vegetation Communities and Special-Status Plants

## 9.1 Natural Communities

This chapter provides the environmental baseline for natural communities and special-status plant species in the study area. During the survey, natural communities and habitat types were identified within the study area, including sensitive plant communities. These communities and habitat types include lacustrine, freshwater emergent wetland, seasonal wetland, blue elderberry stands, coyote brush scrub, purple needlegrass grasslands, annual grasslands, ornamental, valley foothill riparian, and developed/disturbed habitat.

The natural community classification presented herein is based on direct field observations, prior habitat mapping for the San Luis Low Point Improvement Project and the B.F. Sisk Safety of Dams Modification Project, and the state's standard for alliance-level vegetation classification, A Manual of California Vegetation (Sawyer, Keeler-Wolf, and Evens, 2009). The distribution of vegetation communities in the Study Area is presented in **Figure 9-1** and the extent of each natural community or habitat type (for non-vegetated areas) is presented in **Table 9-1**.

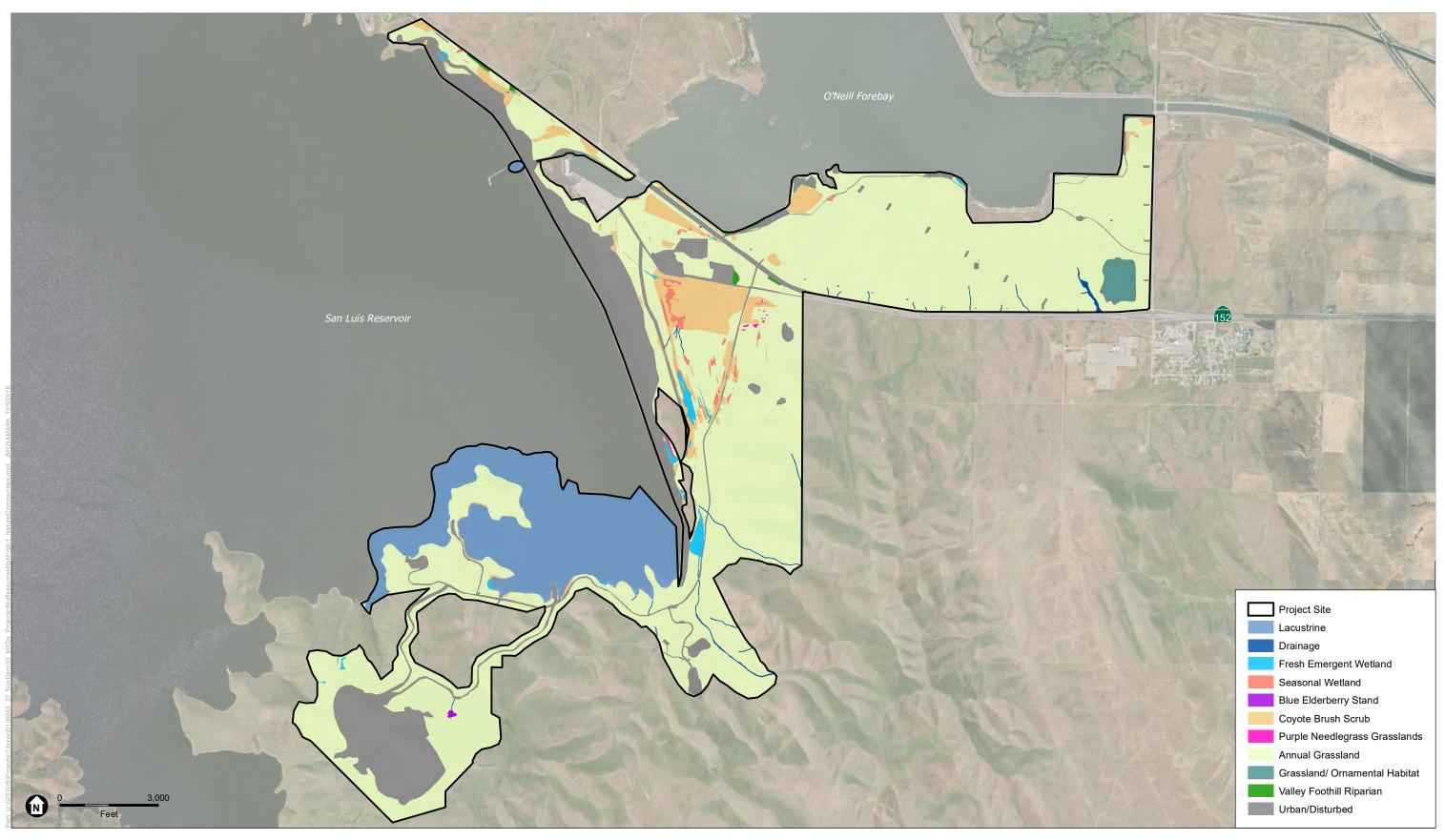
NATURAL COMMUNITY		AREA (ACRES)
Lacustrine		523.0
Drainage		4.6
Freshwater Emergent Wetland		24.1
Seasonal Wetland		16.8
Blue Elderberry		0.89
Coyote Brush Scrub		189.3
Purple Needlegrass Grassland		1.54
Annual Grassland		2552.9
Grassland/Ornamental Tree		28.3
Valley Foothill Riparian		3.2
Urban/Disturbed		605.4
	Total Area	3,952.3

TABLE 9-1
NATURAL COMMUNITY ACREAGE IN THE STUDY AREA

SOURCE: ESA

## 9.2 Special-status Plants

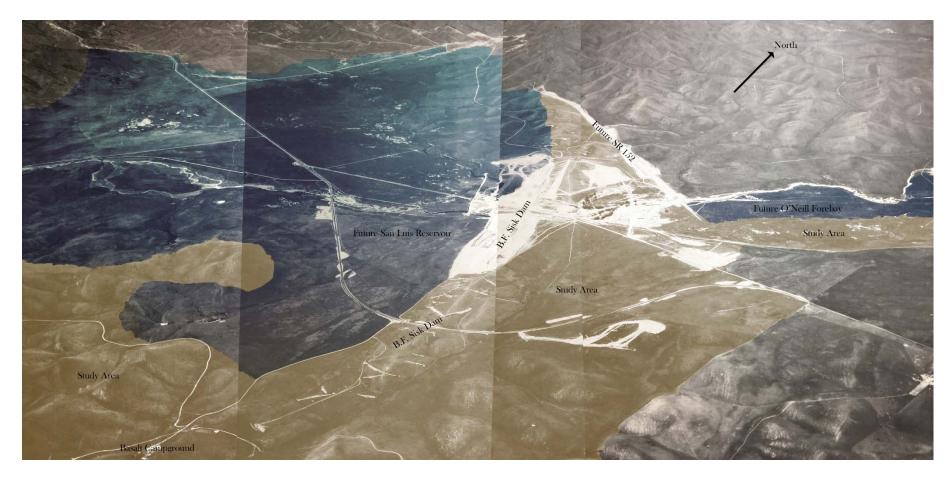
Due to the late timing of ecological surveys performed in September 2018, focused in-season surveys for special-status plants could not be performed. A key objective of the survey was the identification of areas may support special-status plants. As shown in **Figure 9-2**, much of the study area was not disturbed during the 1963 to 1968 construction of B.F. Sisk Dam. Surveyors observed small pockets of unique habitats in scattered locations throughout the study area where native grasses and forbs persist, and where special-status plants may be encountered. Plant species identified during surveys are presented in **Appendix B**. Such habitats include purple needlegrass grasslands, annual grasslands, seasonal wetlands, some of which are slightly alkaline. Based on the September 2018 field review, areas that should be evaluated during appropriately-timed botanical surveys are shown in **Figure 9-3**. Focused botanical surveys should include purple needlegrass grasslands, annual grasslands, and seasonal wetlands.



SOURCE: USDA, 2016; CDM, 2018; ESA, 2018

B.F. Sisk Dam Safety of Dams Modification Project

**Figure 9-1** Distribution of Natural Communities In the Study Area

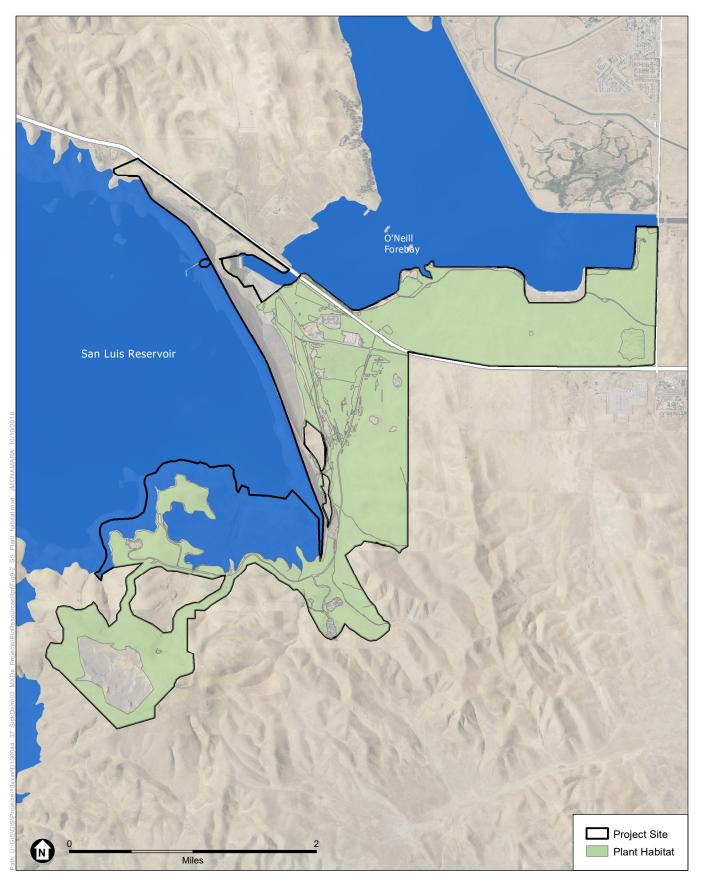


- B.F. Sisk Safety of Dams Modification Project. 130314.04 Figure 9-2

Aerial Photo Composite of B.F. Sisk Dam Under Construction, ca. 1965.

Presently Inundated Areas Are Approximately Shown in Blue. Undisturbed Portions of the Study Area, Shaded in Sepia, Informed the Assessment of Potential Rare Plant Distribution Shown in Figure 9-3

Source: ESA



SOURCE: USDA, 2016; CDFW, 2018; CDM, 2018; ESA, 2018

ESA

B.F. Sisk Dam Safety of Dams Modification Project

**Figure 9-3** Location of Potential Special-status Plant Habitat in the Study Area

# CHAPTER 10 Other Considered Wildlife Species

## **10.1 Introduction**

During field surveys, specific attention was given to the identification of habitat for western pond turtle (*Actinemys marmorata*), San Joaquin coachwhip (*Masticophis flagellum ruddocki*), tricolored blackbird (*Agelaius tricolor*). These species were not detected during surveys; however, potential habitat for each was identified within the study area, as described below.

## 10.2 Western Pond Turtle

Western pond turtles are moderate-sized aquatic turtles that feed on plants, insects, worms, amphibians, crustaceans, and carrion. Mating usually occurs in late April or early May, but may occur year-round. Hatchling turtles are thought to emerge from the nest and move to aquatic sites in the spring (Jennings and Hayes, 1994; Stebbins, 2003; Zeiner et al., 1988).

Western pond turtles are commonly found in ponds, lakes, marshes, rivers, streams, and irrigation ditches with rocky or muddy substrates surrounded by aquatic vegetation. These watercourses usually are within woodlands, grasslands, and open forests, between sea level and 6,000 feet in elevation. Turtles bask on logs or other objects when water temperatures are lower than air temperatures. Nests are located at upland sites, often up to 0.25-mile from an aquatic site (Jennings and Hayes, 1994; Stebbins, 2003; Zeiner et al., 1988).

Pond turtles are not reported within San Luis Reservoir and are not expected to regularly occur in this waterbody. Pond turtles are reported within at Los Banos Reservoir, 5.8 miles south of the study area, and in stock ponds located west of San Luis Reservoir, about 5 miles west of the study area (CDFW, 2018). Within the study area, no aquatic features or drainages are known to support western pond turtle. The perennial seep-fed pond at Willow Spring provides moderate quality habitat for this species. Pond turtles were not observed at this location during two surveys of this area, and basking habitat is limited in this pond due to extensive cattail growth. This species has a low to moderate potential to occur at the Willow Spring pond.

## 10.3. San Joaquin Coachwhip

San Joaquin coachwhips are energetic diurnal foragers. They become active later in the spring than other snakes, and are mostly active during warm periods of the day. They forage primarily on lizards, bird eggs and young, and small mammals, occasionally foraging on carrion. Mating is thought to occur in May, and oviposition in June or early July. Life history information on this

subspecies is poorly known and much information has been taken from similar subspecies (Jennings and Hayes, 1994).

The San Joaquin coachwhip uses open, dry areas with little or no tree cover. In the western San Joaquin Valley, they occur in valley grassland and saltbush scrub associations and are known to climb shrubs and bushes to view prey and potential predators. They use small mammal burrows for refuge and probably for egg-laying sites as well (Jennings and Hayes, 1994).

San Joaquin coachwhips range from the eastern edge of the San Joaquin Valley from Colusa County southward to Kern County and into the inner South Coast Ranges, with an isolated population in the Sutter Buttes. Western Merced County is within the documented range of the San Joaquin coachwhip, with eleven reported sightings in the western portion of the county. Seven records were reported in 1985 and 1988 near Los Banos Reservoir and Los Banos Creek, about 4 to 7 miles south of the study area. The study area and surrounding grasslands provides suitable open grassland habitat for San Joaquin coachwhips and this species can be expected at low densities in grassland habitat throughout the study area.

## 10.4 Tricolored Blackbird

The tricolored blackbird is a state-listed threatened species. This species is common throughout the Central Valley and coastal areas south of Sonoma County. They may occur during the breeding and nonbreeding season, sometimes within groups of red-winged blackbird (*Agelaius phoeniceus*).

Tricolored blackbirds are a colonial nesting species that construct their nests in dense vegetation in and near freshwater wetlands. When nesting, tricolored blackbirds generally require freshwater wetland areas large enough to support colonies of 50 pairs or more. They prefer freshwater emergent wetlands with tall, dense cattails or tules for nesting, but also breed in thickets of willow, blackberry, wild rose, or tall herbs. During the nonbreeding season, flocks are highly mobile and forage in grasslands, croplands, and wetlands (Zeiner et al., 1990a).

Tricolored blackbirds are often a sporadic resident species that may breed in different locations in successive years. The CNDDB describes four tricolored blackbird occurrences within the study area, with 25 nesting pairs documented in 2005 near Domengine Spring; 150 non-nesting adults reported in 1998 near the reservoir edge north of Basalt Quarry; more than 500 birds observed in 2006 and 2007 on the south shore of O'Neill Forebay; and consistent nesting reported in cattail marsh areas below B.F. Sisk Dam, consisting of 100 to 5,000 adults per year from 1998 to 2012.

Though not observed during surveys, seasonal wetlands and other aquatic habitat in the study area provide suitable nesting habitat for this species during both the breeding and nonbreeding season.

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## **5.2 Document Preparation**

Prepared by: Brian Pittman, *Certified Wildlife Biologist* Environmental Science Associates 1425 N. McDowell Blvd., Ste 200 Petaluma, CA 94928

#### Other Contributors

Gerrit Platenkamp, Principal Ecologist Kelly Bayne, Senior Wildlife Ecologist Even Holmboe, Senior Wildlife Ecologist Julie McNamara, Associate Ecologist Eryn Pimentel, GIS Specialist

# APPENDIX A CNDDB Reporting Forms

## **California Native Species Field Survey Form**

Mail to:	For Office Use Only	
Natural Diversity Database	Source CodeQuad	
California Department of Fish and Game	Code	
1807 13 <sup>th</sup> Street, Suite 202	Elm Code Occ. No.	
Sacramento, CA 95814		
Sacramento, CA 93814	EO Index No.   Map Index No.	
Date of Field Work: 09-13-2018		
month (mm) - date (dd) - year (yyyy)		
Scientific Name: Rana draytonii		
Common Name: California red-legged frog		
Species Found? 🛛 Yes 🗆 No	Reporter: Brian Pittman	
If not, why?	Address: Environmental Science Associates	
Total No. of Individuals: )	1425 N. McDowell Blvd., Ste. 200	
Subsequent visit? 🗌 Yes 🖾 No	Petaluma, CA 94954	
Existing NDDB occurrence:	Email address: bpittman@esassoc.com	
If yes, Occ. #	Phone: 707-795-0915	
Collection? $\square$ Yes $\boxtimes$ No If yes, # and location:	<b>1 Holle</b> . 707-795-0915	
Plant Information	Animal Information	
	Age Structure: 1 8	
Phenology:		
% vegetative % flowering % fruiting	# adults # juveniles # unknown	
	breeding wintering burrow site rookery nesting other	
	breeding wintering burlow site rookery nesting burlet	
<i>Location</i> (please also attach or draw map)		
County: Merced	Landowner / manager: State Parks	
Quad Name: San Luis Dam, CA	<i>Elevation</i> : 959 ft	
T 2 S R 3 E NE <sup>1</sup> / <sub>4</sub> of NW <sup>1</sup> / <sub>4</sub> of Section	T R <sup>1</sup> / <sub>4</sub> of <sup>1</sup> / <sub>4</sub> of Section	
UTM: Zone 10	Point Accuracy: 3 Meters	
Source: Garmin ETrex/Google Earth	Datum: NAD 83	
Site Coordinates: UTM: 4099656N, 668984E		
Habitat Description (plant communities, dominants, associates, substrates		
Habitat includes a perennial, spring-fed cattle stock pond measuring 90' by 140 impoundment is formally named "Willow Spring" on the USGS San Luis Dam	7.5 minute guadrangle. The center of the pond has dense cattails surrounded	
by a broad, 8' to 10' wide ring of aquatic habitat. Duckweed seasonally provide	es cover within nonded areas. Pond water levels were at full canacity and	
spilling when observed in September 2018, with water depth of approximately		
Other rare species?		
Site Information Overall site quality: Excellent Good	🗌 Fair 🔲 Poor	
<i>Current / surrounding land use</i> : Grazing land. Upslope rock quarry site to the s		
Visible Disturbances / possible threats: Construction activities from the proposed B.F. Sisk Dam Safety Project may pose a short-term hazard to moving		
adults and juveniles; though the spring and pond will likely be unaffected.	, , , , , , , , , , , , , , , , , , ,	
Comments: One adult California red-legged frog and eight subadults were ident	tified in the pond on September 13, 2018. No other amphibians were observed	
during the survey.		
[		
<b>Determination:</b> (check one or more, and fill in blanks)	Photographs: (check one or more) Slide Print	
Keyed (cite reference):	Plant / animal $\Box$	
Compared with specimen housed at:	Habitat 🗆 🛛	
Compared with photo / drawing in:	Diagnostic feature	
<b>By another person:</b>		
□ Other: Verified by B. Pittman and Kelly Bayne	May we obtain duplicates at our expense?	
	🛛 yes 🔲 no	

Attachments: Survey Report Figures 5-1, 5-2, and 5-3

## **California Native Species Field Survey Form**

Mail to:	For Office Use Only	
Natural Diversity Database	Source Code Quad	
California Department of Fish and Game	Code	
1807 13 <sup>th</sup> Street, Suite 202	Elm Code Occ. No.	
Sacramento, CA 95814	EO Index No. Map Index No.	
,		
Date of Field Work: 09-12-2018		
month (mm) - date (dd) - year (yyyy)		
Scientific Name: Taxidea taxus		
Common Name: American badger		
Species Found? 🛛 Yes 🗆 No	Reporter: Brian Pittman	
If not, why?	Address: Environmental Science Associates	
Total No. of Individuals: )	1425 N. McDowell Blvd., Ste. 200	
Subsequent visit? 🗌 Yes 🖾 No	Petaluma, CA 94954	
Existing NDDB occurrence: $\square$ No $\square$ Unk.	Email address: bpittman@esassoc.com	
If yes, Occ. #	Phone: 707-795-0915	
Collection? <b>Yes No</b> If yes, # and location:		
Plant Information	Animal Information	
Phenology:	Age Structure: 1	
% vegetative % flowering % fruiting	# adults # juveniles # unknown	
	breeding wintering burrow site rookery nesting other	
<i>Location</i> (please also attach or draw map)		
County: Merced	Landowner / manager: State Parks	
Quad Name: San Luis Dam, CA	Elevation: 297 ft	
T 2 S R 3 E NE <sup>1</sup> / <sub>4</sub> of NW <sup>1</sup> / <sub>4</sub> of Section	T R <sup>1/4</sup> of <sup>1/4</sup> of Section	
UTM: Zone 10	Point Accuracy: 50 Meters	
Source: Garmin ETrex/Google Earth	Datum: NAD 83	
Site Coordinates: UTM: 4102943N, 673181E		
Habitat Description (plant communities, dominants, associates, substrate	os/sails_sspects/slope)	
Annual grassland comprises the majority of terrestrial habitat below B.F. Sisk		
short non-native annual grasses interspersed with coyote brush and forbs. Exte		
ground squirrel as a major species. Dominant vegetation species are wild oat (	Avena fatua) and soft chess (Bromus hordeaceus).	
Other rare species?		
Site Information Overall site quality: 🛛 Excellent 🗌 Good 🗌 Fair 🗌 Poor		
Current / surrounding land use: State Parks SRA grazed by tule elk. The badg		
Visible Disturbances / possible threats: Construction activities from the propo- badgers.	sed B.F. Sisk Dam Safety Project may pose a short-term hazard to moving	
	ad, 50 feet east of the road and approximately 200 feet south of the intersection	
with Gonzaga Road. No photographs were taken of the individual.		
<b>Determination:</b> (check one or more, and fill in blanks)	Photographs: (check one or more) Slide Print	
Keyed (cite reference):	Plant / animal	
Compared with specimen housed at:	Habitat 🗆 🛛	
Compared with photo / drawing in:	Diagnostic feature	
By another person:		
Other: Verified by B. Pittman, Kelly Bayne, and Even Holmboe	May we obtain duplicates at our expense?	
	🛛 yes 🗌 no	

Attachments: Survey Report Figure 7-1

# APPENDIX B

Plant and Wildlife Species Observed During Surveys

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#### TABLE B-1

#### WILDLIFE SPECIES OBSERVED IN THE STUDY AREA, SEPTEMBER 10-14, 2018

	SCIENTIFIC NAME
AMPHIBIANS	
California toad	Anaxyrus boreas ssp. halophilus
Sierran treefrog	Pseudacris sierra
California red-legged frog	Rana draytonii
REPTILES	
gopher snake	Pituophis catenifer
western fence lizard	Sceloporus occidentalis
BIRDS	
red-shouldered hawk	Accipiter striatus
spotted sandpiper	Actitis macularius
western grebe	Aechmophorus occidentalis
red-winged blackbird	Agelaius phoeniceus
mallard	Anas platyrhynchos
western scrub-jay	Aphelocoma californica
great blue heron	Ardea herodias
great horned owl	Bubo virginianus
cattle egret	Bubulcus ibis

#### TABLE B-1 (CONTINUED)

#### WILDLIFE SPECIES OBSERVED IN THE STUDY AREA; SEPTEMBER 10-14, 2018

	SCIENTIFIC NAME
red-tailed hawk	Buteo jamaicensis
least sandpiper	Calidris minutilla
Anna's hummingbird	Calypte anna
turkey vulture	Cathartes aura
killdeer	Charadrius vociferus
northern harrier	Circus hudsonius
American crow	Corvus brachyrhynchos
Common raven	Corvus corax
snowy egret	Egretta thula
Horned lark	Eremophila alpestris
Brewer's blackbird	Euphagus cyanocephalus
prairie falcon	Falco mexicanus
American kestrel	Falco sparverius
American coot	Fulica americana
greater roadrunner	Geococcyx californianus
bald eagle	Haliaeetus leucocephalus
loggerhead shrike	Lanius Iudovicianus
western gull	Larus occidentalis
gull sp.	Larus sp.

#### TABLE B-1 (CONTINUED)

#### WILDLIFE SPECIES OBSERVED IN THE STUDY AREA; SEPTEMBER 10-14, 2018

COMMON NAME	SCIENTIFIC NAME
belted kingfisher	Megaceryle alcyon
common merganser	Mergus merganser
northern mockingbird	Mimus polyglottos
brown-headed cowbird	Molothrus ater
ruddy duck	Oxyura jamaicensis
osprey	Pandion haliaetus
English sparrow	Passer domesticus
American white pelican	Pelecanus erythrorhynchos
double-crested cormorant	Phalacrocorax auritus
yellow-billed magpie	Pica nuttalli
pied-billed grebe	Podilymbus podiceps
black phoebe	Sayornis nigricans
yellow warbler	Setophaga petechia
Forster's tern	Sterna forsteri
Eurasian collared dove	Streptopelia decaocto
western meadowlark	Sturnella neglecta
tree swallow	Tachycineta bicolor
violet green swallow	Tachycineta thalassina
greater yellowlegs	Tringa melanoleuca

#### TABLE B-1 (CONTINUED)

#### WILDLIFE SPECIES OBSERVED IN THE STUDY AREA; SEPTEMBER 10-14, 2018

	COMMON NAME	
	barn owl	Tyto alba
	mourning dove	Zenaida macroura
MAMMALS		
	Coyote	Canus latrans
	Tule elk	Cervus canadensis nannodes
	black-tailed jackrabbit	Lepus californicus
	western red bat	Lasirurs blossevillii
	Yuma myotis bat	Myotis yumanensis
	California ground squirrel	Otospermophilus beecheyi
	black-tailed deer	Odocoileus hemionus
	Audubon's cottontail	Sylvilagus audubonii
	Mexican free-tailed bat	Tadarida brasiliensis
	American badger	Taxidea taxus
	Botta's pocket gopher	Thomomys bottae

#### TABLE B-2

#### PLANT SPECIES OBSERVED IN THE STUDY AREA, SEPTEMBER 10-14, 2018

PLANT FAMILY	COMMON NAME	SCIENTIFIC NAME
Adoxaceae	blue elderberry	Sambucus nigra ssp. caerulea
Amaranthaceae	prickly Russian thistle	Salsola tragus
Apiaceae	fennel	Foeniculum vulgare
Apocynaceae	narrowleaf milkweed	Asclepias fascicularis
Asteraceae	coyote brush	Baccharis pilularis
	mule fat	Baccharis salicifolia
	glandular big tarweed	Blepharizonia laxa
	Italian thistle	Carduus pycnocephalus
	yellow star-thistle	Centaurea solstitialis
	Fitch's spikeweed	Centromadia fitchii
	stinkwort	Ditrichia gravendens
	western goldenrod	Euthamia occidentalis
	gumplant	Grindelia sp.
	bristly oxtongue	Helminthotheca ichioides
	telegraphweed	Heterotheca grandiflora
	yellow tarweed	Holocarpha virgata
	prickly lettuce	Lactuca serriola
	Mediterranean milk thistle	Silybum marianum
	wirelettuce	Stephanomeria sp.

#### TABLE B-2 (CONTINUED)

#### PLANT SPECIES OBSERVED IN THE STUDY AREA, SEPTEMBER 10-14, 2018

PLANT FAMILY	COMMON NAME	SCIENTIFIC NAME
Asteraceae	rough cocklebur	Xanthium strumarium
Boraginaceae	salt heliotrope	heliotropium curassavicum
Brassicaceae	field mustard	Brassica rapa
	mustard	Hirschfeldia sp.
	Perennial pepperweed	Lepidium latifolium
	wild radish	Raphanus sativus
Calitrichaceae	twoheaded water-starwort	Callitriche heterophylla
Casuarinaceae	Australian pine	Casuaria sp.
Convolvulaceae	field bindweed	Convolvulus arvensis
Cyperaceae	purua grass	Bolboschoenus maritimus
	sedge	<i>Cyperus</i> sp.
Elaeagnaceae	buffaloberry	Shepherdia argentea
Euphorbiaceae	doveweed	Croton setigerus
Fabaceae	honey mesquite	Prosopis glandulosa
Fagaceae	coast live oak	Quercus agrifolia
	blue oak	Quercus douglasii
	valley oak	Quercus lobata
	interior live oak	Quercus wislizeni
Frankeniaceae	alkali heath	Frankenia grandiflora

#### TABLE B-2 (CONTINUED)

#### PLANT SPECIES OBSERVED IN THE STUDY AREA, SEPTEMBER 10-14, 2018

PLANT FAMILY	COMMON NAME	SCIENTIFIC NAME
Geraniaceae	broadleaf filaree	Erodium botrys
	dove's-foot crane's bill	Geranium molle
Lamiaceae	black sage	Salvia melifera
	vinegarweed	Trichostemma lanceolata
Marsileaceae	American pillwort	Pilularia americana
Myrtaceae	blue gum eucalyptus	Eucalyptus globulus
	eucalyptus	Eucalyptus sp.
Phytolaccaceae	pokeweed	Phytolacca decandra
Pinaceae	stone pine	Pinus pinea
Plantaginaceae	buck's-horn plantain	Plantago coronopus
Poaceae	common wild oat	Avena fatua
	stiff brome	Brachypodium distachyon
	ripgut brome	Bromus diandrus
	soft brome	Bromus hordeaceus
	foxtail brome	Bromus Madritensis
	Bermuda grass	Cynodon dactylon
	salt grass	Distichlis spicata
	Italian ryegrass	Festuca perennis
	hare barley	Hordeum murinum

#### TABLE B-2 (CONTINUED)

#### PLANT SPECIES OBSERVED IN THE STUDY AREA, SEPTEMBER 10-14, 2018

PLANT FAMILY	COMMON NAME	SCIENTIFIC NAME
Poaceae	sprangletop	Leptochloa sp.
	purple needlegrass	Nassalla pulchra
	dallis grass	Paspalum dilatatum
	bulbous bluegrass	Poa bulbosa
	annual beard grass	Polypogon monspeliensis
Polygonaceae	curly dock	Rumex crispus
Roseaceae	Holly-leaved cherry	Prunus ilicifolia
Salicaceae	Fremont cottonwood	Populus fremontii
	narrowleaf willow	Salix exigua
Salicaceae	willow	<i>Salix</i> sp.
Scrophulariaceae	mullein	Verbascum sp.
Solanaceae	sacred datura	Datura wrighti
	tobacco tree	Nicotiana glauca
Typhaceae	narrowleaf cattail	Typha angustifolia
	Broadleaf cattail	Typha latifolia

Source: ESA



## memorandum

dateMarch 30, 2018toB.F. Sisk Safety of Dams Project File D130314.04fromBrian Pittman and Rebecca AcostasubjectB.F. Sisk Dam SRA Vegetation Survey

Environmental Science Associates' (ESA) surveyed the B.F. Sisk Dam and surrounding San Luis State Recreation Area (referred to as the "project site") to identify vegetation types in the vicinity of the Sisk Dam and reservoir. Wildlife and special status species observed during the survey were also noted.

ESA wildlife biologists Julie Remp and Rebecca Acosta surveyed the project site on June 13 and 14, 2016, to characterize vegetation types and ground-truth vegetation mapping based on analysis of aerial photographs. The biologists surveyed all vegetation cover in places which were visible from publicly accessible paths or roadways. The vegetation types identified were:

- California sagebrush (Artemisia californica) scrub
- Blue oak (Quercus douglasii) woodland
- Cottonwood (Populus fremontii) stand
- California buckeye (Aesculus californica) grove
- Coyote brush (Baccharis pilularis)- silver lupine (Lupinus albifrons) scrub
- Non-native grassland

Wildlife species observed included endemic tule elk (*Cervus canadensis nannodes*), western burrowing owl (*Athene cunicularia*), a California species of special concern, and Swainson's hawk (*Buteo swainsoni*), a California Threatened species. The full list of wildlife observed is below.

- California ground squirrel (Otospermophilus beecheyi)
- Tule elk (Cervus canadensis nannodes): 12-15 individuals on east side of dam on slope
- American Crow (Corvus brachyrhynchos): crow nests visible in power towers
- Common raven (*Corvus corax*)
- Turkey vulture (Cathartes aura)
- Red-tailed hawk (Buteo jamaicensis): juvenile
- Western burrowing owl (Athene cunicularia hypugaea): perched in grassland south of reservoir
- Loggerhead shrike (Lanius ludovicianus)
- Brewer's blackbird (*Euphagus cyanocephalus*)
- Western kingbird (Tyrannus verticalis)
- Mourning dove (Zenaida macroura)

# ESA

#### Page 2

- Western meadowlark (Sturnella neglecta)
- California horned lark (Eremophila alpestris actia)
- Yellow-billed magpie (Pica nuttalli)
- Oriole sp. (Icterus sp.)
- Black phoebe (Sayornis nigricans)
- Swainson's hawk (Buteo swainsoni)
- Cottontail rabbit (Sylvilagus sp.)
- California quail (Callipepla californica)
- Great blue heron (Ardea Herodias)
- Great egret (Ardea alba)
- Snowy egret (Egretta thula)
- Killdeer (Charadrius vociferous)
- Mallard (Anas platyrhynchos)
- Scrub jay (Aphelocoma californica)
- Bald eagle (Haliaeetus leucocephalus): west of reservoir
- White pelican (*Pelecanus erythrorhynchos*)
- House finch (Haemorhous mexicanus)
- Monarch butterfly (Danaus plexippus)



#### DEPARTMENT OF THE ARMY

U.S. ARMY ENGINEER DISTRICT, SACRAMENTO CORPS OF ENGINEERS 1325 J STREET SACRAMENTO CA 95814-2922

REPLY TO ATTENTION OF

June 23, 2010

Regulatory Division SPK-2010-00683

Patti Clinton Bureau of Reclamation 1243 N Street Fresno, California 93721-1813

Dear Ms. Clinton:

We are responding to your May 21, 2010 request for a preliminary jurisdictional determination (JD), in accordance with our Regulatory Guidance Letter (RGL) 08-02, for the Sisk Dam Corrective Action site. The approximately 2,578.80-acre site is located on San Luis Creek at San Luis Reservoir, in Sections 13, 26, 27, 28, 33, and 34, Township 10 S, Range 9 E, and an unsectioned portion of the San Luis Dam USGS 7.5 minute quadrangle, near Latitude 37.04872°, Longitude -121.07453°, Merced County, California.

Based on available information, we concur with the estimate of potential waters of the United States, as depicted on the January 5, 2010, Figures 4a-e, entitled *Preliminary Boundaries of Waters of the United States, Including Wetlands*, prepared by North State Resources, Inc. The approximately 28.728 acres of wetlands and 893.085 acres of other water bodies present within the survey area may be jurisdictional waters of the United States. These waters may be regulated under Section 404 of the Clean Water Act.

A copy of our RGL 08-02 Preliminary Jurisdictional Determination Form for this site is enclosed. Please sign and return a copy of the completed form to this office. Once we receive a copy of the form with your signature we can accept and process a Pre-Construction Notification or permit application for your proposed project.

You should not start any work in potentially jurisdictional waters of the United States unless you have Department of the Army permit authorization. You may request an approved JD for this site at any time prior to starting work within waters. In certain circumstances, as described in RGL 08-02, an approved JD may later be necessary.

You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This preliminary determination has been conducted to identify the potential limits of wetlands and other water bodies which may be subject to Corps of Engineers' jurisdiction for the particular site identified in this request. A Notification of Appeal Process and Request for

Appeal (RFA) form is enclosed to notify you of your options with this determination. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*.

Please refer to identification number SPK-2010-00683 in any correspondence concerning this project. If you have any questions, please contact Zachary Simmons at our California South Branch, 1325 J Street, Room 1480, Sacramento, California 95814-2922, email Zachary. M.Simmons@usace.army.mil, or telephone 916-557-6746. For more information regarding our program, please visit our website at www.spk.usace.army.mil/regulatory.html.

Sincerely,

#### **ORIGINAL SIGNED**

Paul Maniccia Chief, California South Branch

Enclosure(s)

Copy furnished without enclosure(s):

 Scott Goebl, North State Resources, Inc., 11321 20th Street, Sacramento, California 95814-4233 Dale Harvey, Central Valley Regional Water Quality Control Board, 1685 E Street, Fresno, California 93706-2007

Jason Brush, U.S. Environmental Protection Agency, Region IX, Wetlands Regulatory Office (WTR-8), 75 Hawthorne Street, San Francisco, California 94105-3901

# B.F. Sisk Dam Corrective Action Project Delineation of Waters of the United States

B.F. Sisk Dam Central Valley Project, California



Draft March 2010



U.S. Department of the Interior Bureau of Reclamation



State of California Department of Water Resources

# Mission of the Bureau of Reclamation

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.

## Department of Water Resources Mission Statement

To manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments.

## B.F. Sisk Dam Corrective Action Project Delineation of Waters of the United States

B.F. Sisk Dam Central Valley Project, California

**Prepared by:** 

North State Resources, Inc.

North State Resources, Inc. 5000 Bechelli Lane, Suite 203 Redding, CA 96002

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5.1.3 Seasonal wetlands (SW30, SW31, FEW1, FEW2, SW27, SW5, SW32,
SW1, SW2, SW3, SW28, SW26, SW29, SW21, SW22, SW6, SW20,
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Appendix C:	Figures 4a – 4e, Preliminary Boundaries of Waters of the United States,
	Including Wetlands

## Chapter 1 Summary

On behalf of the U.S. Bureau of Reclamation (Reclamation), North State Resources, Inc. (NSR) conducted a delineation of waters of the United States occurring within the 2,578.80-acre B.F. Sisk Dam Corrective Action Project site (study area). The study area is located on lands surrounding the B.F. Sisk Dam, San Luis Reservoir, and O'Neill Forebay, approximately 12 miles west of the city of Los Banos, Merced County, California.

The field delineation was conducted by NSR between August 31 and September 18, 2009. A total of 921.813 acres of waters of the United States were mapped within the study area. Waters of the United States occur as lacustrine (891.000 acres), ephemeral and intermittent streams (0.335 acre, 6,401.77 linear feet), ditches (1.656 acres, 15,149.17 linear feet), fresh emergent wetlands (16.559 acres), and seasonal wetlands (12.169 acres).

This delineation of waters of the United States is subject to verification by the U.S. Army Corps of Engineers (Corps). NSR advises all parties to treat the information contained herein as preliminary until the Corps provides written verification of the boundaries of its jurisdiction.

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## **Chapter 2 Project Location**

The study area is located approximately 12 miles west of the city of Los Banos, California on State Route (SR) 152 (Figure 1). It is in the *San Luis Dam, California* 7.5-minute U.S. Geological Survey (USGS) quadrangle, Township 10S, Range 8E, Sections 13, 27, 28, 33, and 34 Mount Diablo Base and Meridian, and portions of the Gonzaga land grant (Figure 2). The center of the study area is located at approximately UTM 10 S 672239m E, 4101640m N (NAD 83 datum).

#### 2.1 Acreage

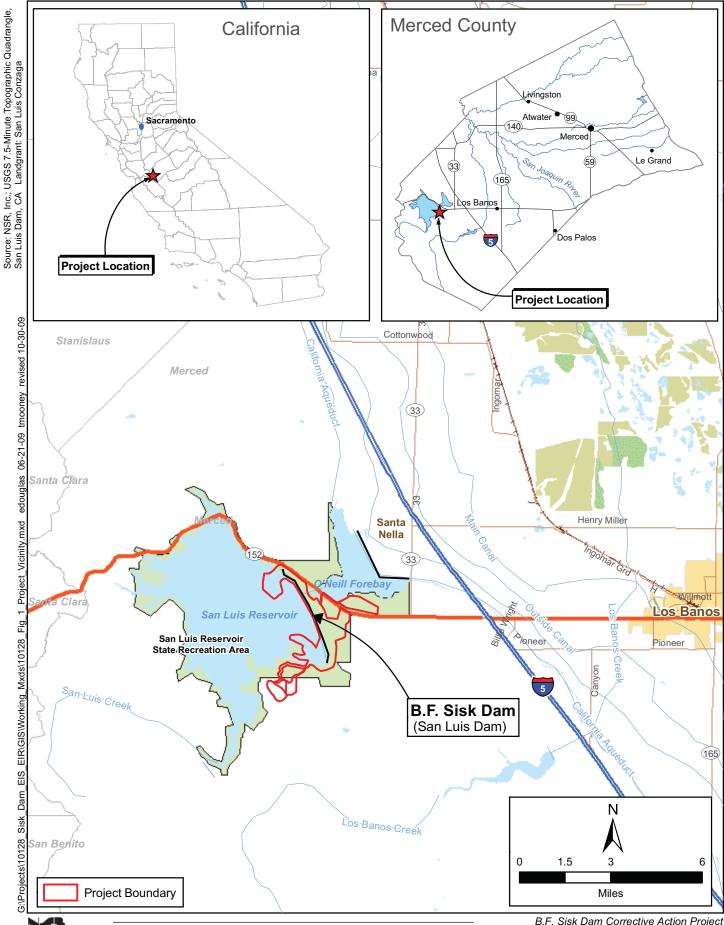
The study area encompasses 2,578.80 acres.

### 2.2 Proximity to Major Highways and Streets

The study area corresponds to the area surrounding the B.F. Sisk Dam, which is a large dam visible from miles to the east. To reach the site, exit Interstate Highway 5 at SR 152 and head west. Travel on SR 152 for approximately 2.5 miles to the SR 33/Gonzaga Road intersection. From the SR 152 exit ramp, turn left, then right at the stop sign and follow Gonzaga Road west. Pass through the intersection with Basalt Hill Road and proceed forward to the security booth. Authorization to proceed on site is required. Contacts include: Mandeep Bling [(209) 827-5110; Department of Water Resources], Lee Sencenbaugh [(209) 826-1197; Department of Parks and Recreation], and Patti Clinton [(559) 487-5127, Reclamation].

### 2.3 USGS Hydrologic Unit

The study area is located within the *Panoche-San Luis Reservoir* USGS Hydrologic Map Unit (Cataloging Unit Number 18040014).



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B.F. Sisk Dam Corrective Action Project

Source: NSR, Inc.; USGS 7.5-Minute Topographic Quadrangle, San Luis Dam, CA Landgrant: San Luis Conzaga

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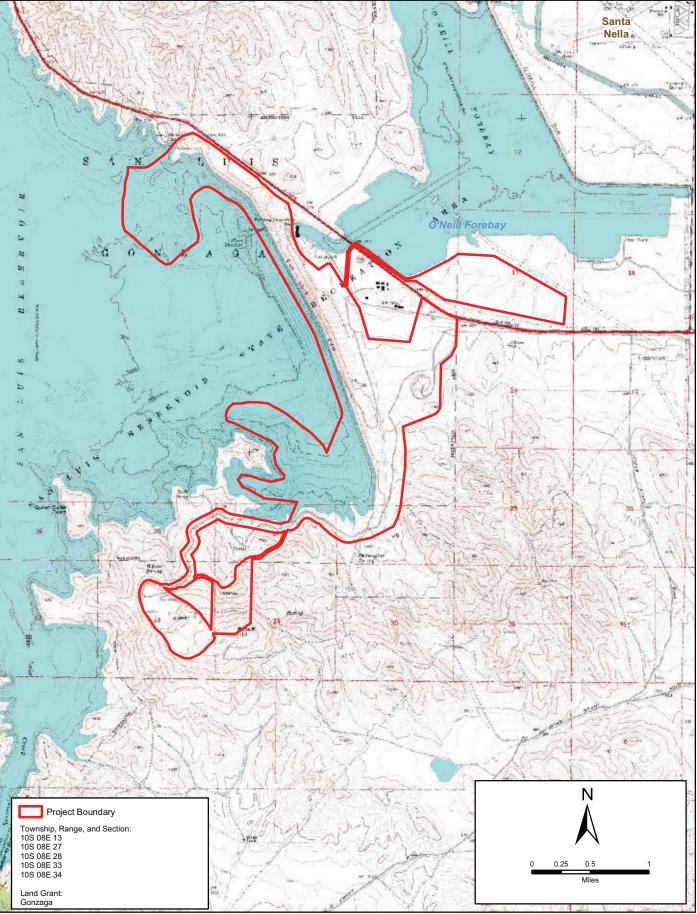
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Dam

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## Chapter 3 Environmental Setting

### 3.1 Current/Recent Land Use

The San Luis Reservoir functions as an out-of-channel water storage/hydropower generation facility. Waters are pumped into the reservoir from the California Aqueduct for agricultural or power generation uses when needed. Aquatic recreation, such as windsurfing, fishing, and motor boating, occurs on the reservoir. Camping, hunting, picnicking, and other land-based uses occur as allowable within the state and federally owned and managed lands surrounding the reservoir. Sisk Dam is part of the San Luis Joint-Use Complex, which is owned by Reclamation and is operated and maintained by the California Department of Water Resources (DWR).

### 3.2 Site Topography and Elevation

The topography of the site varies significantly from relatively flat or gently rolling in the northeast sections of the study area, to steep and mountainous in the southwest. The elevation of the study area ranges between 230 feet above mean sea level (msl) near O'Neill Forebay to almost 1,600 feet above msl in the quarry near Basalt Hill.

#### 3.3 Climate

Climate within the study area is as follows:

*Type.* The study area is characterized by a climate with cool, moist winters and hot or warm, dry summers.

*Precipitation.* Precipitation in the study area primarily falls as rain. Average annual rainfall is approximately 9.5 inches (Western Regional Climate Center 2009). For the period between August 31, 2008 and August 31, 2009, 7.89 inches of precipitation (rain) was recorded, which is 83 percent of normal; 2009 was the third year of an on-going statewide drought.

*Air Temperature.* Air temperatures in the study area range between an average January high of 55 degrees Fahrenheit (°F), and an average July high of 96 °F. The year-round average high is approximately 76 °F (Western Regional Climate Center 2009).

*Growing Season.* The growing season (i.e., 70 percent probability of an air temperature of 28 °F or higher) in the study area is between 200 and 280 days and occurs from February through October. The soil temperature regime is thermic (USDA Soil Conservation Service 1990).

### 3.4 Hydrology/Hydrologic Features

The study area lies within the San Luis Creek watershed, which historically drained to the San Francisco Bay via the San Joaquin River. Today, however, the hydrology of the watershed has been significantly altered by the development of the B.F. Sisk Dam and O'Neill Forebay. Since completion of San Luis Dam, runoff from San Luis Creek has been captured in San Luis Reservoir and diverted for State Water Project and Central Valley Project purposes.

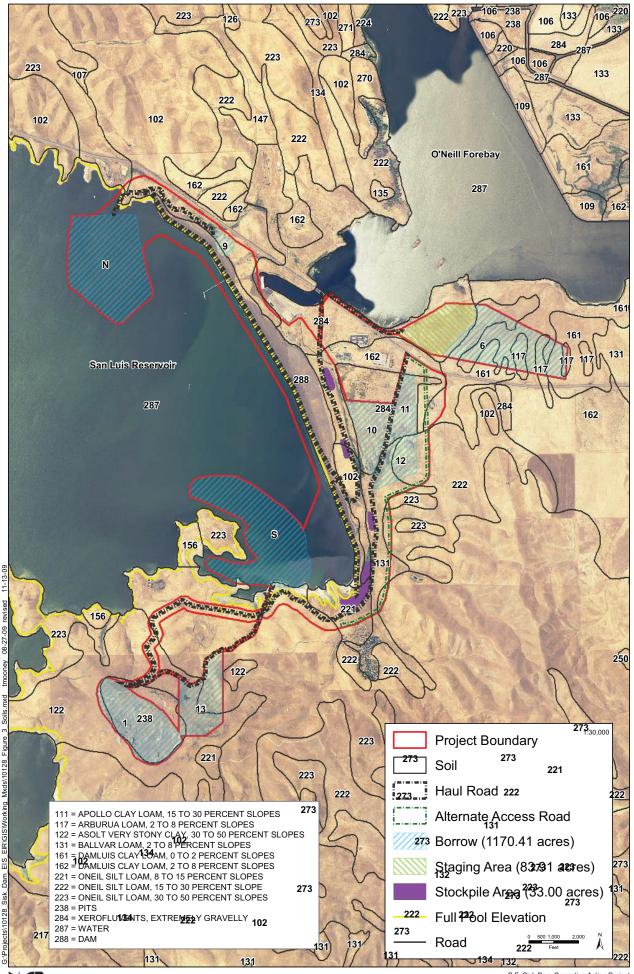
The hydrology in the study area is provided by precipitation events and by leakage of the B.F. Sisk Dam. Through the use of piezometers and comparison of the piezometer data to the level of the San Luis Reservoir, the DWR has established a direct correlation between reservoir level and the ground water level in the riparian and fresh emergent wetland areas just east of the dam (Pam Borba pers. comm.). Dam seepage is the main source of hydrology for the wetland areas within close proximity of the dam.

Although the correlation between reservoir level and ground water level is not as strong in the grassland areas east and west of Basalt Hill Road, dam seepage may influence ground water levels as far as the California Department of Forestry and Fire Protection (CalFire) station east of Basalt Hill Road (Pam Borba pers. comm.). The depressions found in this portion of the study area generally exhibit hydrophytic vegetation and other wetland indicators, suggesting that they pond or at a minimum maintain greater moisture than the surrounding higher terrain. The depressions generally lack stream channels leading to or from them. Data indicating whether the moisture supporting the potential wetland conditions is from precipitation events or high ground water was inconclusive during the field visit.

### 3.5 Soil Map Units

The soil map units within the study area and vicinity are described in the *Soil Survey of Merced County, California, Western Part* (USDA Soil Conservation Service 1990) and are shown in Figure 3. One of the soil map units (Xerofluvents, extremely gravelly) is identified as a hydric soil (USDA Natural Resources Conservation Service 2007). Descriptive information about each soil map unit follows.

Insert Figure 3



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B.F. Sisk Dam Corrective Action Project

#### B. F. Sisk Dam Corrective Action Project Delineation of Waters of the United States

Blank back for 11x17 Figure 3.

111 – Apollo clay loam, 15 to 30 percent slopes. Apollo clay loam, 15 to 30 percent slopes is a deep, well drained soil on low foothills. It was derived from, and is still underlain by, soft, calcareous shale and sandstone; depth to the soft shale and limestone is 40 to 60 inches. Permeability is moderately slow. Available water capacity (the ability of the soil to hold moisture) is high to very high. Effective rooting depth is limited by soft shale or sandstone. The soil is considered non-hydric (USDA Natural Resources Conservation Service 2007). The sub-group taxonomy of the Apollo soil series is *thermic Calcic Haploxerolls*. Apollo clay loam, 15 to 30 percent slope occurs southeast and directly north of the dam (Figure 3).

117 – Arburua loam, 2 to 8 percent slopes. Arburua loam, 2 to 8 percent slopes is a moderately deep, well drained soil on foothills. It is derived from, and is underlain by, calcareous shale and sandstone at a depth of 20 to 40 inches. Permeability is moderate. Available water capacity is low to moderate. The soil is considered non-hydric (USDA Natural Resources Conservation Service 2007).

Effective rooting depth is limited by the shale or sandstone layer at 20 to 40 inches. The sub-group taxonomy of the Arburua soil series is *thermic Typic Xerorthents*. This soil map unit occurs in small polygons in the northeast section of the study area.

**122** – **Asolt very stony clay, 30 to 50 percent slopes**. Asolt very stony clay, 30 to 50 percent slopes is a deep, well drained soil on mountains. It is derived from basic volcanic rock. Permeability is slow. Available water capacity is low to moderate. Effective rooting depth is limited by basic volcanic rock at a depth of 40 to 60 inches. The soil surface is 15 to 35 percent stone covered, and the surface layer is a stony clay about 30 inches deep. The depth to the basic volcanic rock is about 40 to 60 inches. The soil is considered non-hydric (USDA Natural Resources Conservation Service 2007). The sub-group taxonomy of the Asolt soil series is *thermic Typic Chromoxererts*. This soil map unit occurs in the southwestern section of the study area near Basalt Hill.

**131** – **Ballvar loam, 2 to 8 percent slopes**. Ballvar loam, 2 to 8 percent slopes is a very deep, well drained soil on alluvial fans. Permeability is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. It formed in mixed alluvium derived from sedimentary rock. The texture of the upper layer varies from sandy clay loam to clay loam, silty clay loam, very fine sandy loam, or sandy loam. The soil is considered non-hydric (USDA Natural Resources Conservation Service 2007). The sub-group taxonomy of the Ballvar soil series is *thermic Typic Haploxerolls*. This soil map unit occurs east of the southern half of the dam.

161 – Damluis clay loam, 0 to 2 percent slope; 162 – Damluis clay loam, 2 to 8 percent slopes. Damluis clay loam soils are very deep, well drained soils on low terraces. They formed in alluvium derived from various kinds of rock.

Permeability is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. The surface layer is a clay loam to about 22 inches, then, to a depth of 60 inches or more is a gravelly sandy loam. Both map units are considered non-hydric (USDA Natural Resources Conservation Service 2007). The subgroup taxonomy of the Damluis soil series is *thermic Calcic Pachic Argixerolls*. These soil map units occur in the portion of the study area that is east of the dam and south of O'Neill Forebay.

221 – Oneil silt loam, 8 to 15 percent slopes; 222 – Oneil silt loam, 15 to 30 percent slopes; 223 – Oneil silt loam, 30 to 50 percent slopes. Oneil silt loam soils are moderately deep, well drained soils found on foothills. The three Oneil silt loam soils that occur within the study area differ primarily by the slope of the hills they occur in. They are all formed in material derived dominantly from calcareous shale and sandstone. The permeability is low to moderate. Effective rooting depth is limited by sandstone or shale at a depth of 20 to 40 inches. The soil texture is a silt loam to the sandstone and shale at depths of 20 to 40 inches. All three map units are considered non-hydric (USDA Natural Resources Conservation Service 2007). The subgroup taxonomy of the Oneil soil series is *thermic Calcic Haploxerolls*. These soil map units occur in the portion of the study area that is south and east of the south end of the dam.

**238** – **Pits**. This map unit consists of a basalt rock quarry that provided source material for the Sisk Dam and now contains soil material and rock. The quarry is located on top of Basalt Hill. Large quantities of rock parent material, dumped piles of mined rock debris, and young fine textured wind-blown alluvium are present within the quarry area. Pits are non-hydric (USDA Natural Resources Conservation Service 2007). Pit soils occur in the portion of the study area that is south of the reservoir on the top of Basalt Hill.

**284** – **Xerofluvents, extremely gravelly**. Xerofluvents, extremely gravelly soils are a diverse group of very deep, poorly drained to well drained soils in channels, and on old plains in and adjacent to streams on mountains and foothills. They formed from gravelly alluvium derived from various kinds of rock. Permeability is slow to moderately rapid. Available water capacity is very low to low. Effective rooting depth is 60 inches or more. The water table is at a depth of 40 to 72 inches from December through March. This soil is subject to long periods of flooding from January through March, and it is considered a hydric soil for that reason (USDA Natural Resources Conservation Service 2007). It is used as a source for gravel. Xerofluvents are their own subgroup. This soil map unit occurs in two polygons east of the center of the dam.

**287 – Water**. The water soil map unit refers to the inundated soils under the San Luis Reservoir and O'Neill Forebay.

**288** – **Dam**. The dam soil map unit refers to the area of the constructed Sisk dam, which primarily consists of rock from the nearby quarry on Basalt Hill.

### 3.6 Vegetation Communities

The study area includes five vegetative alliances as defined in *Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995) and two habitat types per *A Guide to Wildlife Habitats of California* (WHR) (Mayer and Laudenslayer Jr. 1988). California annual grassland is the dominant alliance in the study area. Four alliances are closely associated with the seepage areas and ditches along the toe of Sisk Dam, and portions of the full-bank reservoir shorelines: Big Saltbush Shrubland, Coyote Bush Shrubland, Mixed Willow Woodland, and Cattail. All of these alliances are surrounded at least partially by annual grassland alliances. WHR types were used to map barren areas, and a single stand of chaparral-like shrub dominated by a plant uncommon to the region.

#### 3.6.1 California Annual Grassland

California annual grassland is the largest vegetative alliance occurring in the study area and is dominated by non-native annual grasses and forbs. This alliance occurs on all the soil map units and land types present on the site with minor differences in species composition based on location. The dominant non-native grasses include wild oats (Avena barbata – UPL<sup>1</sup>), ripgut brome (Bromus diandrus – UPL), and soft chess (Bromus hordeaceus – FACU). The dominant non-native forbs include black mustard (Brassica nigra – UPL) and broadleaved pepperweed (Lepidium latifolium – FACW). These dominants are representative of nearly all of the areas mapped as California annual grassland, except for areas adjacent to and within the seepage wetlands and associated ditches along the toe of Sisk Dam. On the steep hillsides to the south of the reservoir, the native forb, hayfield tarweed (Hemizonia congesta – UPL), is also relatively abundant.

The annual grassland along the toe of Sisk Dam has the greatest diversity of native plants, and also the greatest concentration of broad-leaved pepperweed. Non-natives present in these more mesic areas include Mediterranean barley (Hordeum murinum – FAC), curly dock (Rumex crispus – FACW), horehound (Marrubium vulgare - FAC), and cocklebur (Xanthium strumarium – FAC). Native grasses and forbs were a very minor component within the annual grassland as a whole, but were most abundant within the more mesic areas mentioned above. These natives include, vinegar weed (Trichostema lanceolatum – UPL), salt heliotrope (Heliotropium curassavicum – OBL), purple needle grass (Nassella pulchra – UPL), and gum plant (Grindelia camporum – FACU).

Wetland indicator status for plant species is based on *National List of Plant Species That Occur in Wetlands: California (Region 0)* (Reed 1988) and includes the following categories: Obligate Wetland (OBL) – Plants that occur almost always in wetlands

Facultative Wetland (FACW) – Plants that usually occur in wetlands, but also occur in non-wetlands (i.e., uplands) Facultative (FAC) – Plants with a similar likelihood of occurring in both wetlands and uplands

Facultative Upland (FACU) - Plants that usually occur in uplands, but also occur in wetlands

Obligate Upland (UPL) - Plants that occur almost always in uplands

#### Coyote Bush Shrubland

Coyote Bush Shrubland is distinguished by dense stands of coyote bush (Baccharis pilularis - UPL) in upland positions adjacent to the intermittent drainages or the reservoir shorelines (bank full). Big saltbush (Atriplex lentiformis – FAC) is a minor component of this alliance and occurs at the upper and drier edges of the stands. Herbaceous vegetation is largely absent under the shrub canopy, and in some of the stands, broad-leaved pepperweed occurs within canopy gaps and along edges.

#### Big Saltbush Shrubland

Big Saltbush Shrubland occurs as scattered clusters and as moderately dense linear stands along the intermittent drainages and portions of the reservoir shorelines. In its overall range, big saltbush is associated with riparian zones and the margins of wetlands, but is uncommon as a riparian associate in the Central Valley (Meyer 2005). The largest and densest stand adjacent to the study area is along the southern shoreline (bank full) of San Luis Reservoir. This stand includes hundreds of individuals of big saltbush that are concentrated at the base of a drainage and extend along the reservoir shoreline for approximately a quarter mile. The large stand of big saltbush near the toe of Sisk Dam is associated with adjacent stands of coyote bush and a lone honey mesquite (Prosopis glandulosa ssp. torreyana - UPL). Grasslands adjacent to the Big Saltbush Shrubland stands have higher concentrations of salt heliotrope than the grasslands at large within the study area. Big saltbush, along with salt heliotrope and honey mesquite, are all classified as halophytes.

#### Mixed Willow Woodland

Mixed Willow Woodland alliance is dominated by native trees associated with riparian woodlands: Fremont cottonwood (Populus fremontii spp. fremontii – FACW), red willow (Salix laevigata - FACW), and black willow (Salix gooddingii – OBL). The dominant shrub in this habitat type is mule fat (Baccharis salicifolia – FACW), which forms dense stands surrounding the cottonwoods and willows.

#### Cattail Alliance

Cattail Herbaceous Vegetation occurs in seasonal wetlands as inclusions or adjacent to Mixed Willow Woodland. Narrowleaf cattail (Typha angustifolia – OBL) is the dominant species in the Cattail stands, dusky willow (Salix melanopsis – FACW) is subdominant in one of the stands. Dominant nonnatives associated with this alliance are broad-leaved pepperweed and poison hemlock (Conium maculatum – FACW).

#### **Mixed Chaparral**

Mixed chaparral habitat is comprised of a single stand of dense shrubs on a steep slope northwest of Borrow Area 1. The dominant shrub in this stand is silver buffaloberry (Shepherdia argentea – UPL). Subdominant shrubs in this stand are blue elderberry (Sambucus mexicana – FAC) and wild rose (Rosa sp.).

#### <u>Barren</u>

Barren habitat is comprised of the disturbed areas that have less than 2 percent total vegetative cover. A representative Barren site is located on the hilltop quarry located southwest of the dam.

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## Chapter 4 Methods

### 4.1 Field Delineation

The routine delineation of wetlands and "other waters" within the study area was based on field observations of positive indicators for wetland vegetation, hydrology, and soils; and indicators of "other waters." This methodology is consistent with the approach outlined in *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U. S. Army Corps of Engineers 2006). Taxonomic nomenclature for plant species is in accordance with *The Jepson Manual* (Hickman 1993). Wetland indicator status for plant species was confirmed using Reed (1988), and the "50/20 Rule" was applied to determine plant dominance (U. S. Army Corps of Engineers 2006). The presence of primary and/or secondary wetland hydrology indicators was documented for each wetland feature.

A soil pit was dug in each representative wetland feature. Soil pits were dug to a depth sufficient to document the presence or confirm the absence of hydric soil indicators. Soils were examined in order to assess field indicators of hydric soils. Positive indicators of hydric soils were observed in the field in accordance with the criteria outlined in *Field Indicators of Hydric Soils in the United States* (Hurt, and Vasilas 2006). Soil colors were determined using a Munsell<sup>®</sup> soil color chart. The hydric status of each soil map unit was reviewed using *Hydric Soils list for Merced County, California Western Part* (USDA Natural Resources Conservation Service 2007). At least one set of paired data points was selected to best represent the wetland feature type and the adjacent uplands. Data points were also placed in suspect areas to confirm wetland or upland status.

Delineation of "other waters" was based on presence of an ordinary high water mark (OHWM) as defined in Corps regulations (33 CFR 328.3 and 33 CFR 328.4). Physical characteristics of an OHWM include a natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, presence of litter and debris, leaf litter disturbed or washed away, scour, deposition, presence of bed and bank, and water staining. At least one set of paired data points was then selected to best represent the "other waters" and adjacent upland conditions for each "other waters" type.

Forty-nine data points representing each feature type and the associated upland were characterized and documented throughout the study area. Field

observations were conducted between August 31 and September 18, 2009. Routine wetland determination data forms are presented in Appendix A. Representative photographs of features delineated are presented in Appendix B.

The boundaries of delineated features and all 3-parameter data point locations were mapped using a Trimble Pathfinder Geo XH Global Positioning System (GPS) capable of sub-foot accuracy. Where the use of the GPS was not practicable, the features were delineated by hand onto ortho-rectified color aerial photographs. After the field delineation, the GPS data were overlain on the ortho-rectified color aerial photograph of the study area to generate a delineation map.

### 4.2 Evaluation of Federal Jurisdiction

Isolated, non-navigable, intrastate waters are not subject to federal jurisdiction based on guidance issued in response to the U.S. Supreme Court's decision in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* ("SWANCC decision") (Guzy and Anderson 2001). Additionally, the memorandum providing guidance to implement the U.S. Supreme Court's decision in *Rapanos v. United States* and *Carabell v. United States*, referred to as "Rapanos" (Grumbles and Woodley 2008), was considered in determining federal jurisdiction. Under this guidance, wetland features that are not adjacent to (i.e., bordering, contiguous, or neighboring) a traditional navigable water (TNW) or abutting a relatively permanent water (RPW) are subject to a significant nexus evaluation. In these circumstances, the significant nexus evaluation is used by the Corps (and Environmental Protection Agency) to determine whether a particular wetland or "other water" has a "significant nexus" to a TNW; and is, therefore, subject to regulation under the federal Clean Water Act, (i.e., "waters of the United States").

Approved Jurisdictional Determinations and Preliminary Jurisdictional Determinations are tools used by the Corps to help implement Section 404 of the Clean Water Act. In order to obtain an Approved Jurisdictional Determination, as required to determine a feature as non-jurisdictional, the Corps must conduct a significant nexus evaluation to assess the characteristics and functions of the aquatic features to determine if they significantly affect the chemical, physical, or biological integrity of downstream navigable waters. Alternatively, an applicant can request a Preliminary Jurisdictional Determination in which case the Corps will treat all features as waters of the United States for permitting purposes (Riley 2008).

For the purposes of this wetland delineation, the jurisdictional status of the wetlands and other waters observed in the study area were all considered jurisdictional, and the applicant is requesting a Preliminary Jurisdictional Determination.

### 4.3 Problematic Vegetation, Soils, and Hydrology

Problematic vegetation, soils, and hydrology were observed at various locations in the study area. In each case, the procedure followed to determine the feature's wetland status was based on the discussion and guidance for problematic vegetation, soils, and hydrology provided in the Manual and/or Manual Supplement. The problematic determinations stem from: (1) the manipulation of the natural flow regime and topography from the construction and operation of the Sisk Dam (starting in 1962); (2) the dry season site visit coupled with the current drought conditions on the site; and (3) sparse vegetative cover, or colonization of some wetland features by upland annual plant species. This page intentionally left blank.

## Chapter 5 Results

The boundaries and acreages of waters of the United States within the study area are illustrated in the series of figures representing the boundaries of waters of the United States, including wetlands (Figure 4 series – attached in the pocket). Waters of the United States within the study area occupy a total of 921.813 acres and include lacustrine, ephemeral and intermittent streams, ditches, fresh emergent wetland, and seasonal wetland. An acreage summary of the waters of the United States delineated within the study area is presented in Table 1. A detailed tabulation of the acreage (and linear footage – as appropriate) is also presented in the tables on Figures 4b through 4e, Appendix C.

Waters of the United States	Total Acreage	Total Linear Feet
Wetlands		
Fresh Emergent Wetland	16.559	N/A
Seasonal Wetland	12.169	N/A
Total Wetlands	28.728	N/A
Other Waters		
Lacustrine	891.000	N/A
Ephemeral Drainage	0.298	5,586.77
Intermittent Stream	0.037	815.00
Ditch	1.656	15,149.17
Settling Pond	0.094	N/A
Total Other Waters	893.085	21,550.94
Total Jurisdictional Waters of the United States	921.813	21,550.91

Table 1. Acreage Summary of Jurisdictional Waters of the United StatesWithin the B.F. Sisk Dam Corrective Action Project Study Area, MercedCounty, California

### 5.1 Characterization of Delineated Features

The following description of the waters of the United States, including wetlands provides details about specific wetland features observed and documented in the study area. In some cases, there were many features of one type (e.g., seasonal wetland), so details typical of the feature type are described. As presented in Table 1, there are two types of wetlands and five types of "other waters".

In some cases, several wetland types combine to create a complex feature. So that this characterization of the delineated features provides a comprehensive description, the feature types associated with specific functions are lumped together. For example, most of the fresh emergent wetlands are associated with dam seepage, but the seepage is then conveyed out of the study area via ditches. As a result, the discussion lumps the features associated with this function as the Seep Wetland Complex.

Each heading in the following discussion identifies the feature type or function, and is followed by representative feature labels from Figures 4b - 4e. References are also made to corresponding data sheets (Appendix A) and to representative photographs (Appendix B).

#### 5.1.1 Lacustrine (LAC 1, LAC2, and LAC3)

The Lacustrine features correspond to the San Luis Reservoir below the full pool elevation, and combined they are the largest (891.000 acres) feature type delineated. The full pool elevation is the elevation at which the DWR considers the reservoir to be full. There is no spillway, but water is pumped into or out of the reservoir via a large pumping system. The marks on the ground corresponding to the full pool elevation include eroded shoreline, shelving, changes in the character of the soil, destruction of terrestrial vegetation, and the presence of fluvial litter and debris. Data point 46 (Figure 4d) documents the lacustrine conditions found in a small inlet of the San Luis Reservoir. During the field visit, the San Luis Reservoir was at historic low levels, but despite the dry conditions, the field indicators of the high water mark in the vicinity of data point 46 and at other locations around the reservoir were obvious.

The reservoir functions as out-of-channel water storage to serve the State Water Project and the Central Valley Project. The natural San Luis Creek drainage is insufficient to fill the reservoir, so water is either pumped into or out of the reservoir from the State Water Project or Central Valley Project canals depending on water need and availability. In addition to supporting agricultural and municipal water needs, the reservoir supports recreation such as boating and fishing.

## 5.1.2 Seep Wetland Complex (from south to north – ED6, FEW10, FEW7, FEW6, D9, FEW3, FEW8, D7, FEW9, D2, SW4, D3, D6, D5, and D8)

This complex of fresh emergent wetlands, seasonal wetlands, and drainage ditches are formed from, or convey, waters that seep through the dam from the reservoir. A correlation that ties the hydration of the wetland features and ditches to the level of the reservoir has been documented by the DWR (Pam Borba, Pers. Comm.). The hydration of these wetland and ditch features may undergo long- or short- periods of inundation depending on the duration (or lack thereof) of full capacity reservoir height. In addition, if the reservoir has been low for several years, the next time it is full, the dam leaks more at first then slows down over time as the air spaces between soil particles in the dam are

replaced with water. Some hydration of the features also results from precipitation events.

Seep wetland complex features (e.g., FEW9; Photographs 4, 5, and 6) occur in areas with long-duration saturation or inundation creating an anaerobic environment suitable for hydrophytic plants. The features occur in the deeper depressions close to the toe of Sisk Dam where seepage creates long-duration ponding or soil saturation. The length of inundation is dependent on the reservoir level behind the dam; the features are inundated for long-duration when the reservoir is full for a long period of time, or the features may remain dry during years (such as in 2009) when the reservoir level is very low for the whole year. Herbaceous plant species dominate the seep wetland features, although portions of the features are also vegetated by hydrophytic trees and shrubs. Dominant species include: narrowleaf cattail, broad-leaved pepperweed, poison hemlock, Fremont cottonwood, red willow, black willow, and mule fat.

Wetland hydrology criteria are met through the observation of sediment deposits, surface soil cracks, oxidized rhizospheres, and the FAC-neutral test. Soils were mottled with redox features and fit the Redox Depressions (F8) hydric soil indicator description. Seep wetland complex features occur with the most frequency in depressions close to the dam. Data points 5, 6, 9, 12, 14, and 15 are among those documenting the habitats.

The wetlands documented in the seep wetland complex occur on gentle slopes (e.g., FEW10), in depressions (e.g., FEW9), and on flat surfaces (e.g., SW4). The ditches were created to bisect and connect the various wetland features, and the main "drain" of the whole complex is the large, deep ditch (D8; Photograph 10) north of the complex. The primary function of the seep wetland complex is to collect and transport the seepage water. The secondary functions of the complex are: sediment and toxicant retention, flood-flow attenuation, production export, aquatic diversity and abundance, and wildlife diversity and abundance (Schneider, and Sprecher 2000). See Photographs 3–10 (Appendix B) for images of the seep wetland complex.

Other seep wetlands (e.g., FEW15; Photograph 11) occur north of the dam. Although the features exhibit many of the characteristics and serve similar functions as the seep wetland complex described above, they do not drain through the D8 ditch. These wetland and ditch features (e.g., D10; Photograph 12) flow off-site and are presumed to reach O'Neill Forebay.

# 5.1.3 Seasonal wetlands (SW30, SW31, FEW1, FEW2, SW27, SW5, SW32, SW1, SW2, SW3, SW28, SW26, SW29, SW21, SW22, SW6, SW20, SW45, SW24, SW7, SW25, SW8, SW10, SW11, SW23, SW15, SW14, SW9, SW 19)

The vast majority of the seasonal wetland features mapped within the study area occur east of the seep wetland complex, in the vicinity of Basalt Hill Road. The closer these features are to the dam, the greater likelihood that their hydration is

related to water seepage through the dam during high reservoir periods. However, the correlation between seepage and seasonal wetland hydration gets weaker with distance east of the dam. Because each seasonal wetland occurs in a depression (some very slight, some deep and well pronounced), precipitation is thought to play an important role in the hydration of the features, whether or not they receive seepage from the reservoir.

Most of the features (e.g., SW19, SW24, SW7, SW19) are extensions of the grassland habitats they occur in. The dominant species are marginally hydrophytic (FAC) grasses or herbaceous plant species, and in most cases, the depressions are slight, and the boundaries of the features are gradual. The most reliable boundary indicator observed was the change from upland to wetland vegetation. In these cases, the hydric soil indicators [Redox Depression (Photograph 16)] continue across the wetland – upland boundary due to capillary pull. The most common hydrology indicators are surface soil cracks, sediment deposits, and oxidized rhizospheres.

The weak hydrophytic vegetation parameter (and in some cases the weak wetland hydrology parameter) make it difficult to determine how frequently these features become saturated. Some may only be saturated for long duration during wetter than normal precipitation years, or in years of high precipitation coupled with high reservoir levels (producing contributing soil saturation from seepage and precipitation).

Contrast the shallow depression seasonal wetlands with the deeper depressions (e.g., SW27, SW5, FEW1, FEW2) and the dominant plants become much more hydrophytic, and the indicators of hydric soils and wetland hydrology get much more pronounced. These deeper depression seasonal wetlands occur closer to the dam. The ground water level may be higher in years of high reservoir levels, and the deeper depressions may be closer to that groundwater level. Closer proximity to the groundwater level coupled with normal or above normal precipitation rates likely result in long duration inundation of these features, which produce the stronger wetland indicators.

For the most part, no surface channel was evident that connects these seasonal wetlands to the seep wetland complex ditches. As such, the functions of the features are not related to drainage, but are purely related to more "natural" functions such as: sediment and toxicant retention, flood-flow attenuation, production export, aquatic diversity and abundance, and wildlife diversity and abundance (Schneider, and Sprecher 2000).

Data points 4, 10, 19, 21, 23, 24, 31, 32, 35, 37, 39, and 41 (also see Photographs 13–18) document seasonal wetland features. The dominant plant species found within them consist of hydrophytic grasses such as Mediterranean barley and squirreltail fescue (*Vulpia bromoides* – FACW), and herbaceous species such as broad-leaved pepperweed, salt heliotrope, curly dock, and horehound. In some instances, typically closer to the dam where seepage appears to play a greater role in the hydration of the features, tree (e.g., Fremont cottonwood) and shrub species (e.g., mule fat) are also present.

The wetland hydrology indicators observed in the seasonal wetland features include water marks, sediment deposits, surface soil cracks, and oxidized rhizospheres. Hydric soil criteria are met through the observation of redox features described under the Redox Depressions hydric soil indicator. Because of the prolonged drought, it is highly possible that these features have not been hydrated for a number of years. But because they lie within depressional microtopography, are dominated by hydrophytes, and have hydric soil indicators, they could not be excluded from the wetland classification.

#### 5.1.4 Ephemeral Drainage (ED13, ED3, ED4, ED9, ED6, ED5)

Ephemeral drainages are features that flow during precipitation events and for short periods following the precipitation (less than 14 days). There is no ground water component adding to the duration of flow after a precipitation event. Most of the natural stream channels found within the study area are considered ephemeral drainages due to the well drained soils on the slopes they are found upon, the low annual precipitation rates, and the lack of wetland conditions at the source of the stream. [Wetlands at the source of a stream might slowly release waters after a storm event and contribute to a longer flow regime within the drainage – an intermittent stream flow regime (see below)].

Data points 43 (Photographs 19 and 20) and 47 (Photograph 21) document representative 2- and 1-foot-wide (respectively) ephemeral drainages. In each case, there is a defined bed and bank, evidence of scour and deposition, the features occur at the bottom of small drainage basins, and they are visible on aerial images. The features are not wetlands because the vegetation parameter is not met; the soils may or may not be met due to their recent deposition or frequent scour. The ephemeral drainages are considered "other waters of the United States." They function largely to concentrate and convey accumulated waters (from precipitation events) from the hills surrounding the study area. There is no influence of seepage waters from the reservoir.

#### 5.1.5 Intermittent Stream (IS1)

Intermittent streams are features that flow seasonally, but exhibit a groundwater component in addition to the collection and conveyance of precipitation and sheet flow from adjacent slopes. The intermittent streams often have a wetland feature at the source that absorbs and then slowly releases waters, or they are influenced by high ground water. Intermittent streams are characterized as bed and bank features that exhibit evidence of scour and deposition. One intermittent stream (IS1) was mapped within the study area. Although conditions were dry during the site visit, feature IS1 provides drainage for a moderately large seasonal wetland (SW22; 0.668 acres) and wetlands (e.g., SW32, SW21) that are not directly connected (Figure 4c). Feature SW22 and the other upslope seasonal wetlands may be wet during periods of high water in

the reservoir, which would likely add a ground water component to the flow within IS1.

## Chapter 6 Conclusion

A total of 921.813 acres of waters of the United States, including wetlands were delineated within the study area. To support a "preliminary verification," all features identified herein and shown on the Figure 4 series are assumed to be federally jurisdictional. Waters of the United States identified in this report are subject to verification by the Corps. NSR advises all interested parties to treat the information contained herein as preliminary pending written verification of jurisdictional boundaries by the Corps.

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### 7.1 Personal Communication

Pam Borba. Hydrologist. San Luis Field Division. California Department of Water Resources. Comments during a site orientation meeting. August 31, 2009.

### **APPENDIX A**

Data Forms

	North State Resources				SEEP WETUND Habitat Type COMPLEY
	Wetland Determination Data Form - Arid V	Vest Reg	lion		Wetland Type SEASONAL WILL
	Project/Site: <u>Sisk Dam Corrective Action Project</u> Applicant/Owner: <u>U.S. Bureau of Reclamation</u>		•	y: <u>Merced</u>	al. 1.
	Investigator(s): <u>J. Colescott</u> Landform (hillslope, terrace, etc.) <u>D17CH</u>		Local rel	ief (concave,	convex, none) CONCAUE Slope % 0-2
					MLVIS CLAY LOAM 2-B%
,	Are climatic/hydrologic conditions on the site typical for this for the vegetation $\underline{N0}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ signified for vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natural	icantly distu	rbed? Are n	ormal circum	stances present? YES
	Summary of Findings (Attach site map showing Hydrophytic vegetation? <u>455</u> Hydric soil? <u>455</u> Wet	) sampling p land hydrok	point location $ogy? 4Fc \le$	s, transects,	important features, etc.) If area a wetland? $\underline{4425}$ Other waters? $\underline{4255}$
	USACE Jurisdiction Adjacent to Waters X Tributary to Waters X Isolat Explain: DITCH + ADJACENT WER	ed (with inte	erstate comm	nerce)	Isolated (non jurisdictional)
	Evaluation of features designated "Ot         Indicators:       Defined bed and bank X Scour         Feature Designation:       Perennial Intermittent X E         Natural Drainage Artificial Drain	her Wat	ters of t nary High Wa Blue-lir	ater Mark Ma ne on USGS	apped X DITCH & WETLANDS.
	Remarks DITCH CHUTURES DAM SEEPI	AGE L	NHEN	DAM	15 FULL. DR. DOCUMENTS
010	AS SETSONAL WERMS.	CCJR	4030	CF-AST	to THE DITCH, LABELLED
salici folia	Vegetation Tree Stratum (use scientific names)	Absolute % Cover		Indicator Status	Dominance Test Worksheet         Number of dominant species         that are OBL, FACW, or FAC:
у СО	2				Total number of dominant species
vea =	50%= 20%= Total Cover: Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	Percent of dominant species that $100$ (AB) are OBL, FACW, or FAC:
<u>יו אי</u> א	1. Baccharis Viminea 2. Atriplex lentiformis 3.				Prevalence Index Worksheet         Total % Cover of:      Multiply by         OBL Species       x 1 =
Ň					FACW Species         x1 -            x2 =
Brecharis	50%= 27.5 20%= Total Cover: Herb Stratum (use scientific names)		Species?	Status	FAC Species x 3 =
JU	1. Lepidium latifalium	60	YES	FACW	FACU Species x4 =
	3. Bromus pordeacous	15	NO		UPL Species         x 5 =           Column Totals         (A)           Prevalance Index = B/A =         (B)
	4.           5.           6.           7.				Hydrophytic Vegetation Indicators $\Delta$ Dominance Text is >50% Prevalence Index is $\leq 3.0^1$
	50%=     45     20%=     18     Total Cover:       Woody/Vine Stratum (use scientific names)       1.	% Cover	Species?	Status	Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.
	2				

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# Soils

3

iches) <u>Color (moist) %</u>	Color (moist)		NAME OF A DESCRIPTION OF A	Loc <sup>2</sup>	Texture		Remarks	
6 2151R 4/3 90	2.51R 5/4		RM_	M	SANDY	the state of the second second		_
-12 2.5 YR 4/3 60	2.54R 5/4	40 R	2M	M	KAND 9	LOAM		
								_
pes: C = Concentration D = Depletion	RM = Reduced Matrix	<sup>2</sup> Loca	ation: PL =	Pore Lini	ng RC = R	loot Channe	el M = Matrix	
dric Soil Indicators: (Applicabl	e to all LRRs, unless o	therwise noted	d)		ndicators fo	r Problem	atic Hydric Soils <sup>3</sup>	
Histosol (A1)	Sandy	Gleyed Matrix	x (S4)		1	cm Muck (	A9) (LRR C)	
Histic Epipedon (A2)	Sandy	Redox (S5)			2	cm Muck (	A10) (LRR B)	
Black Histic (A3)	Strippe	ed Matrix (S6)			R	educed Ve	tric (F18)	
Hydrogen Sulfide (A4)	Loamy	Mucky Minera	ral (F1)		Re	ed Parent I	Vaterials (TF2)	
Stratified Layers (AG) (LRR C)	Loamy	Gleyed Matrix	ix (F2)		<u> </u>	egetated S	and/Gravel Bars	
1 cm Muck (A9) (LRR D)	Deplet	ed Matrix (F3)	)		0	her (Expla	in in Remarks)	
Depleted Below Dark Surface (A	(11) Redox	Dark Surface	(F6)				•	
Thick Dark Surface (A12)		ed Dark Surfac					phytic vegetation and	
Sandy Mucky Mineral (S1)	Redox	Depressions (	(F8)		wetland r	iyarology r	nust be present.	
	Vernal	Pools (F9)						
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Remarks COLORS + LACK         MERE 15 AMPLE EVIDEN         JORMAL CHANNEL         JORMAL CHANNEL         JUDIOOGY         Vetland Indicators         rimary Indicators (Any one indicator is         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonriverine)         Sediment Deposits (B2) (Nonriver         Surface Soil Cracks (B6)         Inundation Visible on         Aerial Imagery (B7)         Water Stained Leaves (B9)         Held Observations         Inface Water Present? Yes         Nater Table Present? Yes	ICE OF FLOW; HIS MERTS sufficient) Salt Cr Biotic C Aquatic Hydrog rine) X Oxidize Presen Recent Plower Other (I	Land Reference Solution And Solution And Solution And Solution Crust (B11) Crust (B12) Invertebrates en Sulfide Odd and Rhizosphere ce of Reduced Iron Reduction Solls (C6) Explain in Rem	FAIL RE CON VEGEN VEGEN Ior (C1) res (C3) d Iron (C4) on in marks)	TO I ARSE ATED	NDIC 477 + DATA <u>SAND</u> / <u>Secondar</u> <u>Wa</u> <u>Secondar</u> Wa <u>Secondar</u> Dr Dr Dr Dr Dr Ac Sa Ac Sh FA	E HMI Point Cinctors Cinctors ater Marks ater Marks ater Marks ater Marks ater Marks ater Marks aliment De point anage Pal y-Season in Muck S ayfish Burn turation Mi crial Image allow Aqui C-Netural	(B1) (Riverine) (B1) (Riverine) eposits (B2) (Riverine) tterns (B10) Water Table (C2) urface (C7) rows (C8) isible-on ery (C9) itard (D3) Test (D5)	HE.
Remarks COLORS + LACK         MERE IS AMPLE EVIDEN         JORMAL CHANNEL         Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is	$\frac{\text{Sufficient}}{\text{Sufficient}}$ $\frac{\text{Sufficient}}{\text{Sufficient}}$ $\frac{\text{Sufficient}}{\text{Sufficient}}$ $\frac{\text{Sufficient}}{\text{Biotic C}}$ $\frac{\text{Biotic C}}{\text{Aquatic}}$ $\frac{\text{Hydrog}}{\text{Hydrog}}$ $\frac{\text{Mic Fully}}{\text{Aquatic}}$ $\frac{\text{Hydrog}}{\text{Oxidize}}$ $\frac{\text{Recent}}{\text{Plowed}}$ $\frac{\text{Other (I)}}{\text{Other (I)}}$ $\frac{\text{Mic Fully}}{\text{Oxidize}}$	Land References Solution Solution Solution Solution Land References Solution Solis (C6) Explain in Rem Solis (C6) Explain in Rem Solition Soliti	FAIL RE COV VEGEN S (B13) lor (C1) res (C3) d Iron (C4) on in marks)	Netland H	NDICAT	Indicators A In	(B1) (Riverine) (B1) (Riverine) eposits (B2) (Riverine) tterns (B10) Water Table (C2) urface (C7) rows (C8) isible-on ery (C9) itard (D3) Test (D5)	HE.

Wetland Determination Data Form - Arid W	est Reg	ion		Habitat Type ANDUAL GRASSIAND Wetland Type UP LAND
Project/Site: <u>Sisk Dam Corrective Action Project</u> Applicant/Owner: <u>U.S. Bureau of Reclamation</u> Investigator(s): <u>J. Colescott</u>			y: <u>Merce</u>	I County       Sampling Date: 8/31/07         State:       CA         Sampling Point:       Z
Landform (hillslope, terrace, etc.) Subregion (LRR)LRR-C Are climatic/hydrologic conditions on the site typical for this ti	So	Local rel il Map Unit I	Vame:	AMILUIS CLAY LOAM 2.8%
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ signific Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natural	antly distur	bed? Are n	ormal circur	nstances present? $1 = 5$
Summary of Findings (Attach site map showing Hydrophytic vegetation? <u>N</u> Hydric soil? <u>N</u> Wetta				
USACE Jurisdiction Adjacent to Waters Tributary to Waters Isolate Explain:	d (with inte	erstate comm	nerce)	_ Isolated (non jurisdictional)
Evaluation of features designated "Other Indicators:       Defined bed and bank Scour         Feature Designation:       Perennial Intermittent Ep         Natural Drainage Artificial Drainage	Ordin	ary High Wa	ater Mark M ie on USGS	apped Quad
Remarks VPLAND PAIR TO DP1				
Vegetation Tree Stratum (use scientific names)	Absolute % Cover		Indicator Status	Dominance Test Worksheet Number of dominant species that are OBL, FACW, or FAC:(A)
2				Total number of dominant species (B)
Sapling/Shrub Stratum (use scientific names) 1	% Cover			Percent of dominant species that (AB) are OBL, FACW, or FAC: (AB) Prevalence Index Worksheet
2 3 4				Total % Cover of:         Multiply by           OBL Species         x 1 =           FACW Species         x 2 =
50%= Total Cover: Herb Stratum (use scientific names) 1. <u>Promus diamarus</u> 2. <u>Prassica Neora</u> 3. <u>Centaurea Solstitialis</u>	% Cover 20 10 2	YES	Status UPL UPL UPL	FAC Species       x 3 =         FACU Species       x 4 =         UPL Species       x 5 =         Column Totals       (A)         Prevalance Index = B/A =
4 5 6 7 50%= (20%= 50%= Total Cover:	32			Hydrophytic Vegetation Indicators        Dominance Text is >50%        Prevalence Index is ≤ 3.01        Morphological Adaptations1 (provide supporting data in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation1 (Explain)
1		<u>-</u>		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. Hydrophytic Vegetation?
50%#   20%=   Total Cover:     % Bare Ground in Herb Stratum 68   % Cover of Biotheration				Hydrophytic vegetation?

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#### Soils

Depth Ma			Redox Features		- 1			Bauadas
$\frac{(inches)}{0-8}$ <u>Color (1</u>		20	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture GRAVELLY	Remarks
							<u> <u>G</u><u>M</u><u>M</u><u>M</u><u>M</u><u>M</u><u>M</u><u>M</u><u>M</u><u>M</u><u>M</u><u>M</u><u>M</u><u>M</u></u>	Long
Types: C = Concentrati	on D = Denleti		Reduced Matrix	2	l ocation: Pl	= Pore Lir	ning RC = Root	Channel M = Matrix
lydric Soil Indica			12.75-2.75					roblematic Hydric Soils <sup>3</sup>
Histosol (A1)			Sandy	Bar mars	to all Difference			Muck (A9) (LRR C)
Histic Epipedo	n (A2)		Sandy	an 1981 anns	100 C 100 C			Muck (A10) (LRR B)
Black Histic (A			1	d Matrix (			2777777-75	ced Vetric (F18)
Hydrogen Sulf				and the case	lineral (F1)			Parent Materials (TF2)
Stratified Laye		C)			Aatrix (F2)			tated Sand/Gravel Bars
1 cm Muck (AS		0,		d Matrix				(Explain in Remarks)
Depleted Belo		o (A11)	Redox					(Explain in Kenano)
Thick Dark Su					Surface (F7)		<sup>3</sup> Indicators o	of hydrophytic vegetation and
Sandy Mucky	•			Depressio				rology must be present.
				Pools (F9	6419660 <b>8</b> 61769 <b>6</b>			
			tomai	0010 (1 0	~)			
Restrictive Layer (if p Remarks NON			50115.	Depth (Ir	nches)	_ Hydi	ric Soil? <u>N</u>	
Remarks NON Hydrology Wetland Indicato	ГС 144 rs	DRIC	501L5,	Depth (Ir	nches)	_ Hydi		dicators (2 or more required
Remarks NON Hydrology Wetland Indicato	ГС 144 rs	DRIC	501L5,	Depth (Ir	nches)	Hydi		dicators (2 or more required
Remarks NON Hydrology Wetland Indicato	rs ny one indicato	DRIC	501L5,		nches)	Hydi	Secondary In	Marks (B1) (Riverine)
Remarks NON Hydrology Wetland Indicato Primary Indicators (Ar	rs ny one indicato (A1)	DRIC	501 L5 , ent) Salt Cru			Hydi	Secondary In Water Sedim	Marks (B1) (Riverine) nent Deposits (B2) (Riverine
Remarks NON Hydrology Wetland Indicato Primary Indicators (Ar	rs iy one indicato (A1) ble (A2)	DRIC	501 L5 , ent) Salt Cru Biotic Cr	st (B11) rust (B12		Hydi	Secondary In Water Sedin Drift D	Marks (B1) (Riverine) nent Deposits (B2) (Riverine Deposits (B3) (Riverine)
Remarks NON Hydrology Wetland Indicato Primary Indicators (Ar Surface Water High Water Tat	rs ny one indicato (A1) ble (A2)	DRIC	501 L5 , ent) Salt Cru Biotic Ci Aquatic	st (B11) rust (B12 Invertebr	)	Hydi	Secondary In Water Sedim Drift D Drain	Marks (B1) (Riverine) nent Deposits (B2) (Riverine Deposits (B3) (Riverine) age Patterns (B10)
Remarks NON Hydrology Wetland Indicator Primary Indicators (Ar Surface Water High Water Tat Saturation (A3) Water Marks (E Sediment Depo	rs ny one indicato (A1) ble (A2) 81) (Nonriverine sits (B2) (Nonri	DRIC or is suffici	SOILS, ent) Salt Cru Biotic Cl Aquatic Hydroge Oxidized	st (B11) rust (B12 Invertebr en Sulfide I Rhizosp	e) rates (B13) e Odor (C1) oheres (C3)		Secondary In Water Sedim Drift D Draina	Marks (B1) (Riverine) nent Deposits (B2) (Riverine Deposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2)
Remarks NON Hydrology Wetland Indicato Primary Indicators (Ar Surface Water High Water Tat Saturation (A3) Water Marks (E Sediment Depo	rs ny one indicato (A1) ole (A2) B1) (Nonriverine esits (B2) (Nonri acks (B6)	DRIC	SOILS, ent) Salt Cru Biotic Cu Aquatic Aquatic Oxidized Presence	st (B11) rust (B12 Invertebr en Sulfide I Rhizosp e of Redu	e) rates (B13) e Odor (C1) oheres (C3) uced Iron (C		Secondary In Water Sedim Drift D Draina Dry-S Thin M	Marks (B1) (Riverine) nent Deposits (B2) (Riverine) Deposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) Muck Surface (C7)
Remarks NON Hydrology Wetland Indicato Primary Indicators (Ar Surface Water High Water Tat Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil	rs ny one indicato (A1) ble (A2) B1) (Nonriverine sits (B2) (Nonri acks (B6) ble on	DRIC	SOILS, ent) Salt Cru Biotic Cru 	st (B11) rust (B12 Invertebr en Sulfide I Rhizosp e of Redu ron Redu	rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in		Secondary In Water Sedim Drift D Draina Dry-S Crayfi	Marks (B1) (Riverine) nent Deposits (B2) (Riverine) Deposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) Muck Surface (C7) sh Burrows (C8)
Remarks NON Hydrology Wetland Indicato Primary Indicators (Ar Surface Water Surface Water Tat Surface Water Tat Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil Aerial Imagery	rs ny one indicato (A1) ble (A2) B1) (Nonriverine sits (B2) (Nonri acks (B6) ble on (B7)	DRIC	SOILS, ent) Salt Cru Biotic Cru Aquatic Aquatic Oxidized Oxidized Presenc Recent I Plowed	st (B11) rust (B12 Invertebr en Sulfide I Rhizosp e of Redu ron Redu Soils (C6	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in 5)		Secondary In Water Sedim Drift D Draina Dry-S Thin M Crayfi Satura	Marks (B1) (Riverine) nent Deposits (B2) (Riverine) Deposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) Muck Surface (C7) sh Burrows (C8) ation Visible on
Remarks NON Hydrology Wetland Indicato Primary Indicators (Ar Surface Water High Water Tat Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil	rs ny one indicato (A1) ble (A2) B1) (Nonriverine sits (B2) (Nonri acks (B6) ble on (B7)	DRIC	SOILS, ent) Salt Cru Biotic Cru Aquatic Aquatic Oxidized Oxidized Presenc Recent I Plowed	st (B11) rust (B12 Invertebr en Sulfide I Rhizosp e of Redu ron Redu Soils (C6	rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in		Secondary In Water Sedim Drift D Draina Dry-S Thin M Crayfi Aeria	Marks (B1) (Riverine) nent Deposits (B2) (Riverine) Deposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) Muck Surface (C7) ish Burrows (C8) ation Visible on I Imagery (C9)
Remarks NON Hydrology Wetland Indicato Primary Indicators (Ar Surface Water High Water Tat Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil Aerial Imagery	rs ny one indicato (A1) ble (A2) B1) (Nonriverine sits (B2) (Nonri acks (B6) ble on (B7)	DRIC	SOILS, ent) Salt Cru Biotic Cru Aquatic Aquatic Oxidized Oxidized Presenc Recent I Plowed	st (B11) rust (B12 Invertebr en Sulfide I Rhizosp e of Redu ron Redu Soils (C6	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in 5)		Secondary In Water Sedim Drift D Draina Dry-S Thin M Crayfi Aeria Shallo	Marks (B1) (Riverine) nent Deposits (B2) (Riverine) age Patterns (B10) eason Water Table (C2) Muck Surface (C7) ish Burrows (C8) ation Visible on I Imagery (C9) ow Aquitard (D3)
Remarks Now Hydrology Wetland Indicato Primary Indicators (Ar Surface Water High Water Tat Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil Aerial Imagery Water-Stained	rs ay one indicato (A1) (A1) (Nonriverine sits (B2) (Nonri acks (B6) ble on (B7) Leaves (B9)	DRIC	SOILS, ent) Salt Cru Biotic Cru Aquatic Aquatic Oxidized Oxidized Presenc Recent I Plowed	st (B11) rust (B12 Invertebr en Sulfide I Rhizosp e of Redu ron Redu Soils (C6	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in 5)		Secondary In Water Sedim Drift D Draina Dry-S Thin M Crayfi Aeria Shallo	Marks (B1) (Riverine) nent Deposits (B2) (Riverine) Deposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) Muck Surface (C7) ish Burrows (C8) ation Visible on I Imagery (C9)
Remarks Now Hydrology Wetland Indicato Primary Indicators (Ar Surface Water Surface Water Tat Surface Water Tat Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil Aerial Imagery Water-Stained	rs ny one indicato (A1) ble (A2) B1) (Nonriverine sits (B2) (Nonri acks (B6) ble on (B7) Leaves (B9)	DRIC or is suffici	SOILS, ent) Salt Cru Biotic Cru Biotic Cru Aquatic Aquatic Oxidized Oxidized Oxidized Recent I Recent I Other (E	st (B11) rust (B12 Invertebr en Sulfide I Rhizosp e of Redu ron Redu Soils (C6 xplain in	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in 5)	4)	Secondary In Water Sedim Drift D Drift D Draina Dry-S Thin M Crayfi Satura Aeria Shallo FAC-1	Marks (B1) (Riverine) nent Deposits (B2) (Riverine) Deposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) Muck Surface (C7) sh Burrows (C8) ation Visible on I Imagery (C9) ow Aquitard (D3) Netural Test (D5)
Remarks Now Hydrology Wetland Indicato Primary Indicators (Ar Surface Water High Water Tat Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil Aerial Imagery Water-Stained	rs ay one indicato (A1) (A1) (A1) (Nonriverine sits (B2) (Nonri acks (B6) ble on (B7) Leaves (B9) ns Yes	DRIC pr is suffici iverine)	SOILS, ent) Salt Cru Biotic Cu Biotic Cu Aquatic Aquatic Oxidized Oxidized Oxidized Recent Plowed Other (E	st (B11) rust (B12 Invertebr en Sulfide I Rhizosp e of Redu ron Redu Soils (Cf xplain in	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in 5)	4)	Secondary In Water Sedim Drift D Drift D Draina Dry-S Thin M Crayfi Satura Aeria Shallo FAC-1	Marks (B1) (Riverine) nent Deposits (B2) (Riverine) age Patterns (B10) eason Water Table (C2) Muck Surface (C7) ish Burrows (C8) ation Visible on I Imagery (C9) ow Aquitard (D3)
Remarks Now Hydrology Wetland Indicato Primary Indicators (Ar Surface Water Surface Water Tat Surface Water Tat Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil Aerial Imagery Water-Stained	rs ny one indicato (A1) ble (A2) B1) (Nonriverine sits (B2) (Nonri acks (B6) ble on (B7) Leaves (B9)	DRIC or is suffici	SOILS, ent) Salt Cru Biotic Cu Biotic Cu Aquatic Aquatic Oxidized Oxidized Oxidized Recent Plowed Other (E	st (B11) rust (B12 Invertebr en Sulfide I Rhizosp e of Redu ron Redu Soils (C6 xplain in	2) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in 5) Remarks)	4)	Secondary In Water Sedim Drift D Draina Dry-S Thin M Crayfi Satura Aeria Shallo FAC-1 Hydrology? Yes	Marks (B1) (Riverine) nent Deposits (B2) (Riverine) Deposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) Muck Surface (C7) ish Burrows (C8) ation Visible on I Imagery (C9) ow Aquitard (D3) Netural Test (D5)

Remarks NO WEITHND MADROLOGY INDICATORS.

North State Resources				Habitat Type GRASSLAND Wetland Type DPLAND
Wetland Determination Data Form - Arid V	Vest Reg	ion		Wetland Type DPLAND
Project/Site: <u>Sisk Dam Corrective Action Project</u> Applicant/Owner: <u>U.S. Bureau of Reclamation</u>		_ City/Count	y: <u>Merced</u>	
Investigator(s):J. Colescott				
Landform (hillslope, terrace, etc.) PLAN		l ocal rel	ief (concave	CONVEX NORE NONE Slope % 0-2%
Subregion (LRR)	So	Loodi Tel	Jame VE	20FILVENTS EXTREMELY GRAVELLY
Are climatic/hydrologic conditions on the site typical for this				
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ signifi				
Are vegetation, soil, or hydrology natura	ally problem	atic? (If ne	eded, explai	h any answers in Remarks.)
Summary of Findings (Attach site map showing	, sampling p	oint location	s, transects,	important features, etc.)
Hydrophytic vegetation? 425 Hydric soil? 40 Wet	land hydrolo	ogy? NO	ls sample	d area a wetland? <u>NO</u> Other waters? <u>NO</u>
USACE Jurisdiction Adjacent to Waters Tributary to Waters Isolat Explain:	ed (with inte	erstate comm	nerce)	_ Isolated (non jurisdictional)
Evaluation of features designated "Ot	hor Wat	tors of t	ho Unite	d States"
Indicators: Defined bed and bank Scour_				
Feature Designation: Perennial Intermittent E Natural Drainage Artificial Drai	phemeral	Blue-lir	e on USGS	Quad
Natural Drainage Artificial Drai	nage	Navigable	Water	
Remarks DATA POINT DOCUME	NTS	UPLAN	D 00	NDITIONS PRESENT W/1
A SUSPECT WETLAND AREA.				
	· 1 W			
			<u>.</u>	
Vegetation	Absolute	Dominant	Indicator	Dominance Test Worksheet
Tree Stratum (use scientific names)	% Cover	Species?	Status	Number of dominant species (A)
1				
2				Total number of dominant species 3 (B)
3				across all strata:(B)
50%= 20%= Total Cover:	1000 C			Percent of dominant species that are OBL, FACW, or FAC: (AB)
Sapling/Shrub Stratum (use scientific names)		Species?	-	are OBL, FACW, or FAC: (AB)
1. Atriplex lentiformis	_5	YES	Fre	Prevalence Index Worksheet
2. Baccharis piluloris	_5_	765	UPL	Total % Cover of: Multiply by
3			<u>2 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6</u>	OBL Species x1=
4				FACW Species x2 =
50%= 20%= Total Cover:				FAC Species x3 =
Herb Stratum (use scientific names)	% Cover	Species?	- )	FACU Species x4 =
1. Lepidium latifolium			FACE	UPL Species x5 =
2. Francis diandros				Column Tetals (A) (B)
3. Bromus pordeaceus		NO	FACU	Prevalance Index = B/A =
4. Bromus Inermus		NO	UPL	Flevalatice intex - D/A
5				Hydrophytic Vegetation Indicators
6				Dominance Text is >50% Prevalence Index is ≤ 3.01
7		<u> </u>		Morphological Adaptations <sup>1</sup> (provide supporting
50%= <u>5D</u> 20%= <u>2D</u> Total Cover:				data in Remarks or on a separate sheet)
Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present.
2		<u> </u>		Hydrophytic Vegetation? 4ES
50%= 20%= Total Cover:				Hydrophytic vegetation ( Treeze
% Bare Ground in Herb Stratum _	tic Crust	-		

# Soils

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DepthMatrix	Redox Features Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
-8 10 (R. 9/3 100					GRAVELLY	Lô trụ.
pes: C = Concentration D = Depletion RM				,	ing RC = Root	
vdric Soil Indicators: (Applicable to						oblematic Hydric Soils <sup>3</sup>
Histosol (A1)		•	atrix (S4)			Muck (A9) (LRR C)
Histic Epipedon (A2)	•	Redox (S	•			Muck (A10) (LRR B)
Black Histic (A3)		d Matrix (	•			ed Vetric (F18) arent Materiàls (TF2)
Hydrogen Sulfide (A4)		-	ineral (F1)			ated Sand/Gravel Bars
Stratified Layers (AG) (LRR C) 1 cm Muck (A9) (LRR D)	Loamy	ed Matrix (				(Explain in Remarks)
Depleted Below Dark Surface (A11)	-					
Thick Dark Surface (A12)			urface (F7)		<sup>3</sup> Indicators of	hydrophytic vegetation an
Sandy Mucky Mineral (S1)	-	Depressio				plogy must be present.
	Vernal	•	. ,			
	50123.	Depth (In	iches)	Hydr	ic Soil? <u>Do</u>	
emarks NON MADRIC	50165,	Depth (In	iches)	Hydr		`
Remarks NON MADRIC	50165,	Depth (In	iches)	Hydr		licators (2 or more required
emarks NON MADRIC	SOILS,	Depth (In	iches)	Hydr	Secondary Ind	licators (2 or more required Marks (B1) (Riverine)
emarks NON MADRIC lydrology /etland Indicators imary Indicators (Any one indicator is suff	らの1 レラ , 「icient) Salt Cru			Hydr	Secondary Ind	Marks (B1) (Riverine)
emarks NON MORIC lydrology /etland Indicators imary Indicators (Any one indicator is suff Surface Water (A1)	らの(レラ), ficient) Salt Cru Biotic C	ıst (B11) rust (B12)		Hydr	Secondary Ind	Marks (B1) (Riverine)
Remarks       NON       MMDRIC         lydrology       Ight and Indicators         rimary Indicators (Any one indicator is suff	らの1 レラ , iicient) Salt Cru Biotic C Aquatic	ist (B11) rust (B12) Invertebr	)	Hydr	Secondary Ind	Marks (B1) (Riverine) ent Deposits (B2) (Riverine
Remarks       NON       MORIDEIC         lydrology       Identified to the second seco	<i>与の に し う 、</i> iicient) Salt Cru Biotic C Aquatic Hydroge	ist (B11) rust (B12) Invertebra	) ates (B13) Odor (C1)	Hydr	Secondary Ind	Marks (B1) (Riverine) ent Deposits (B2) (Riverine eposits (B3) (Riverine)
Remarks       NON       MADRIC         lydrology       Ight of the second secon	らしてレラ 、 iicient) Salt Cru Biotic C Aquatic Hydroge Oxidized	ust (B11) rust (B12) Invertebri en Sulfide d Rhizosp	) ates (B13) Odor (C1)		Secondary Ind Water Sedim Drift D Draina Dry-Se Thin M	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) eason Water Table (C2) luck Surface (C7)
Remarks       NON       MADRIC         lydrology       Igdrology         Jetland Indicators       Indicators         imary Indicators (Any one indicator is suff       Surface Water (A1)	50165, icient) Salt Cru Biotic C Aquatic Hydroge Oxidized Presend Recent	ist (B11) rust (B12) Invertebra en Sulfide d Rhizosp æ of Redu Iron Redu	) ates (B13) Odor (C1) oheres (C3) uced fron (C uction in		Secondary Ind Water Sedim Drift D Draina Dry-Se Thin M Crayfis	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) eason Water Table (C2) luck Surface (C7) sh Burrows (C8)
Lemarks       NON       MADRIC         Iydrology       Identified and Indicators         Imary Indicators (Any one indicator is suff	50165, icient) Salt Cru Biotic C Aquatic Aquatic Oxidized Presend Recent Plowed	ist (B11) rust (B12) Invertebri en Sulfide d Rhizosp æ of Redu Iron Redu Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in		Secondary Ind	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) eason Water Table (C2) luck Surface (C7) sh Burrows (C8) tion Visible on
Remarks       NON       MADRIC         lydrology       Indicators         Vetland Indicators       Indicators         imary Indicators (Any one indicator is suff       Surface Water (A1)	50165, icient) Salt Cru Biotic C Aquatic Aquatic Oxidized Presend Recent Plowed	ist (B11) rust (B12) Invertebri en Sulfide d Rhizosp æ of Redu Iron Redu Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced fron (C uction in		Secondary Ind Water Sedim Drift D Draina Dry-Se Thin M Crayfis Aerial	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) eason Water Table (C2) luck Surface (C7) sh Burrows (C8) tion-Visible on Imagery (C9)
Remarks       NON       MORIDEC         Iydrology       Identicators         /etland Indicators       Indicators         imary Indicators (Any one indicator is suff       Surface Water (A1)	50165, icient) Salt Cru Biotic C Aquatic Aquatic Oxidized Presend Recent Plowed	ist (B11) rust (B12) Invertebri en Sulfide d Rhizosp æ of Redu Iron Redu Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in		Secondary Ind Water Sedim Drift D Draina Dry-Se Thin M Crayfis Aerial Shallo	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) eason Water Table (C2) luck Surface (C7) sh Burrows (C8) tion Visible on Imagery (C9) w Aquitard (D3)
Remarks       NON       MUDEC         Hydrology	50165, icient) Salt Cru Biotic C Aquatic Aquatic Oxidized Presend Recent Plowed	ist (B11) rust (B12) Invertebri en Sulfide d Rhizosp æ of Redu Iron Redu Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in		Secondary Ind Water Sedim Drift D Draina Dry-Se Thin M Crayfis Aerial Shallo	ent Deposits (B2) (Riverine eposits (B3) (Riverine) ge Patterns (B10) eason Water Table (C2) luck Surface (C7) sh Burrows (C8) tion Visible on Imagery (C9)
Remarks       NON       MOREC         lydrology         Vetland Indicators         rimary Indicators (Any one indicator is suff	50165, icient) Salt Cru Biotic C Aquatic Aquatic Oxidized Presend Recent Plowed	ist (B11) rust (B12) Invertebri en Sulfide d Rhizosp æ of Redu Iron Redu Soils (C6 Explain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in )) Remarks)		Secondary Ind Water Sedim Drift D Draina Dry-Se Thin M Crayfis Aerial Shallo	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) eason Water Table (C2) luck Surface (C7) sh Burrows (C8) tion-Visible on Imagery (C9) w Aquitard (D3) letural Test (D5)
Hydrology         Vetland Indicators         Inimary Indicators (Any one indicator is suff         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonriverine)         Sediment Deposits (B2) (Nonriverine)         Surface Soil Cracks (B6)         Inundation Visible on         Aerial Imagery (B7)         Water-Stained Leaves (B9)	50165 , icient) Salt CruBiotic CAquaticOxidizedOxidizedRecentRecentOther (E	Ist (B11) rust (B12) Invertebra en Sulfide d Rhizosp xe of Redu Iron Redu Soils (C6 Explain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in b) Remarks)		Secondary Ind Water Sedim Drift D Draina Dry-Se Thin M Crayfis Aerial Shallo FAC-N	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) eason Water Table (C2) luck Surface (C7) sh Burrows (C8) tion-Visible on Imagery (C9) w Aquitard (D3) letural Test (D5)

North State Resources				Habitat Type /GRASSUND
Wetland Determination Data Form - Arid W	lest Reg	ion		Wetland Type SEASONAL WEITA
Project/Site: Sisk Dam Corrective Action Project		City/Count	y: <u>Merced</u>	CountySampling Date: 8/31/09
Applicant/Owner:U.S. Bureau of Reclamation			2	State: <u>CA</u> Sampling Point: <u>4</u>
Investigator(s):J. Colescott				
Landform (hillslope, terrace, etc.) FLAT		Local rel	ief (concave),	convex, none) NONESlope % 0-2%
Subregion (LRR) LRR-C	Soi	– I Map Unit I	Name: Xe	roflovents ExtREMELY
Subregion (LRR) <u>LRR-C</u> Are climatic/hydrologic conditions on the site typical for this ti	ime of year?	YES	If no explain	in remarks.) GRAVELLY
Are vegetation $\frac{N}{N}$ , sofil $\frac{N}{N}$ , or hydrology $\frac{N}{N}$ signified	cantly distur	hed? Are n	omal circum	Istances present? YES
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natura				
Summary of Findings (Attach site map showing	samoling or	pint location	s transects	important features, etc.)
Hydrophytic vegetation? 455 Hydric soil? 455 Wetl				
USACE Jurisdiction				
Adjacent to Waters 🖄 Tributary to Waters Isolate	ed (with inter	rstate comm	nerce)	Isolated (non jurisdictional)
Evaluation of features designated "Ot	hor Wat	ors of t	ho I Inito	d States"
ndicators: Defined bed and bank Scour _				
Feature Designation: Perennial Intermittent Ep	ohemeral	_ Blue-lir	e on USGS	Quad
Natural Drainage Artificial Drain	nage	Navigable	Water	
Remarks				
SEEP AREA VISIBLE ON	AFRI	AC.	WK	itund indicators
OBSERVED				
/egetation	Absolute		Indicator	Dominance Test Worksheet
ree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Number of dominant species
Vegetation Tree Stratum (use scientific names) . Salix )acuiaata				
ree Stratum (use scientific names)	% Cover	Species?	Status	Number of dominant species that are OBL, FACW, or FAC:(A) Total number of dominant species 4
. Salix )acuigata	% Cover	Species?	Status	Number of dominant species
. Salix )acuigata	<u>% Cover</u>	Species?	Status	Number of dominant species that are OBL, FACW, or FAC: <u>3</u> (A) Total number of dominant species <u>4</u> (B)
The Stratum (use scientific names) Salix)acvizata 50%=2.5 20%=1 Total Cover:	<u>% Cover</u>	<u>Species?</u> <u>4 F. 5</u>	<u>Status</u> <u>F#C</u> w	Number of dominant species that are OBL, FACW, or FAC: <u>3</u> (A) Total number of dominant species <u>4</u> (B)
ree Stratum (use scientific names) Salix ) acvigata 50%= 2.5 20%= 1 Total Cover: apling/Shrub Stratum (use scientific names)	% Cover 5 % Cover	Species?	Status <u>F</u> #Cw Status	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       4       (B)         Percent of dominant species that are OBL, FACW, or FAC:       100       (AB)
ree Stratum (use scientific names) Salix <u>)acuianta</u> 50%= <u>2.5</u> 20%= <u>1</u> Total Cover: apling/Shrub Stratum (use scientific names) <u>Baccharis filulavis</u>	% Cover 5 % Cover	Species?	Status <u>F</u> #Cw Status	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       4       (B)         Percent of dominant species that are OBL, FACW, or FAC:       100       (AB)         Prevalence Index Worksheet       100       (AB)
ree Stratum (use scientific names) Salix ) acuizata 50%=2.5 20%=1 Total Cover: apling/Shrub Stratum (use scientific names) Baccharis filulavis	<u>% Cover</u> 5 <u>% Cover</u> (5	<u>Species?</u> <u>YF-5</u> <u>Species?</u> <u>YF-5</u>	Status Status UPL	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       100       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by
ree Stratum (use scientific names) Salix <u>)acuianta</u> 50%= <u>2.5</u> 20%= <u>1</u> Total Cover: apling/Shrub Stratum (use scientific names) <u>Baccharis filulavis</u>	<u>% Cover</u> 5 <u>% Cover</u> (5	<u>Species?</u> <u>YF-5</u> <u>Species?</u> <u>YF-5</u>	Status Status UPL	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       100       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       x 1 =
ree Stratum (use scientific names) Salix <u>)acuizata</u> 50%= <u>2.5</u> 20%= <u>1</u> Total Cover: apling/Shrub Stratum (use scientific names) <u>Baccharis</u> filulavis	<u>% Cover</u> <u>5</u> <u>% Cover</u> <u>15</u>	<u>Species?</u> <u>YF-5</u> <u>Species?</u> <u>YF-5</u>	Status Status UPL	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       100       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       x1 =         FACW Species       x2 =
ree Stratum (use scientific names)         Salix       )acvigata         50%=2.5       20%=_1         Total Cover:         apling/Shrub Stratum (use scientific names)         Baccharis         filulavis         50%=         20%=         Total Cover:         50%=         20%=         Total Cover:	<u>% Cover</u> 5 <u>% Cover</u> 15	<u>Species?</u> <u>YF-5</u> <u>Species?</u> <u>YF-5</u> <u></u>	Status Status UPL	Number of dominant species that are OBL, FACW, or FAC: $X$ (A)         Total number of dominant species $4$ (B)         across all strata: $M$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of: $Multiply by$ OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$
ree Stratum (use scientific names) Salix ) a cuiza ta 50%= 2.5 20%= 1 Total Cover: apling/Shrub Stratum (use scientific names) Baccharis filularis 50%= 20%= Total Cover: erb Stratum (use scientific names)	<u>% Cover</u> <u>45</u> <u>% Cover</u> <u>15</u> % Cover	<u>Species?</u> <u>YES</u> <u>YES</u> Species?	Status Status UPL Status Status	Number of dominant species that are OBL, FACW, or FAC: $X$ Total number of dominant species across all strata:       (A)         Percent of dominant species that are OBL, FACW, or FAC: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of: $IOO$ (AB)         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$
ree Stratum (use scientific names) Salix <u>)acuiaata</u> 50%= <u>2.5</u> 20%= <u>1</u> Total Cover: apling/Shrub Stratum (use scientific names) <u>Baccharis</u> <u>filulavis</u> 50%= <u>20%</u> = <u>Total Cover:</u> erb Stratum (use scientific names) Tubha latifolia	<u>% Cover</u> <u>45</u> <u>% Cover</u> <u>15</u> <u>% Cover</u> <u>40</u>	<u>Species?</u> <u>YK5</u> Species? <u>YK5</u>	Status Status UPL Status OBL	Number of dominant species that are OBL, FACW, or FAC: $X$ (A)         Total number of dominant species $4$ (B)         across all strata: $M$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of: $Multiply by$ OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$
ree Stratum (use scientific names)         Salix       )acvigata         50%=2.5       20%=1         Total Cover:         appling/Shrub Stratum (use scientific names)         Baccharis       filulavis         50%=       20%=         Total Cover:         appling/Shrub Stratum (use scientific names)         Baccharis       filulavis         50%=       20%=         Total Cover:         appling/Shrub Stratum (use scientific names)         Jupha       latifolia         Jupha       latifolia         Lepidicum       lqtifolia	<u>% Cover</u> <u>5</u> <u>% Cover</u> <u>15</u> <u>% Cover</u> <u>40</u> <u>20</u>	Species?           YES           YES           Species?           YES           YES           YES	Status Status UPL Status OBL FACW	Number of dominant species that are OBL, FACW, or FAC:
ree Stratum (use scientific names) Salix <u>)acuiaata</u> 50%= <u>2.5</u> 20%= <u>1</u> Total Cover: apling/Shrub Stratum (use scientific names) <u>Baccharis</u> <u>filulavis</u> 50%= <u>20%</u> = <u>Total Cover:</u> erb Stratum (use scientific names) <u>Jupha latifolia</u> <u>Liepidicum latifolia</u> <u>Gratiola ebracteata</u>	<u>% Cover</u> <u>45</u> <u>% Cover</u> <u>15</u> <u>% Cover</u> <u>40</u> <u>20</u> <u>10</u>	Species? YES Species? YES YES YES N	Status Status UPL Status OBL FACW OBL	Number of dominant species that are OBL, FACW, or FAC: $X$ (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of: $IOO$ (AB)         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)
ree Stratum (use scientific names) Salix <u>)acvigata</u> 50%= <u>2.5</u> 20%= <u>1</u> Total Cover: apling/Shrub Stratum (use scientific names) <u>Baccharis</u> <u>filulavis</u> 50%= <u>20%</u> = <u>Total Cover:</u> erb Stratum (use scientific names) <u>Jupha</u> <u>latifolia</u> <u>Lepidicum</u> <u>jatifolia</u> <u>Lepidicum</u> <u>jatifolia</u> <u>Bromus</u> <u>diandrus</u>	<u>% Cover</u> <u>5</u> <u>% Cover</u> <u>15</u> <u>% Cover</u> <u>40</u> <u>20</u> <u>15</u>	Species?           YES           YES           Species?           YES           YES           YES	Status Status UPL Status OBL DBL UPL	Number of dominant species that are OBL, FACW, or FAC: $X$ (A)         Total number of dominant species $Y$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)
ree Stratum (use scientific names) Salix <u>)acuiaata</u> 50%=2.5 20%= <u>1</u> Total Cover: apling/Shrub Stratum (use scientific names) <u>Baccharis</u> <u>filulavis</u> 50%= <u>20%=</u> Total Cover: erb Stratum (use scientific names) <u>Jupha latifolia</u> <u>L'Epidiam latifolia</u> <u>Gratiola ebracteata</u> <u>Bromus diamatrus</u> <u>B. hordeacous</u>	<u>% Cover</u> <u>45</u> <u>% Cover</u> <u>15</u> <u>% Cover</u> <u>40</u> <u>20</u> <u>15</u> <u>15</u> <u>15</u>	Species? YES Species? YES YES YES N	Status Status UPL Status OBL FACW OBL	Number of dominant species that are OBL, FACW, or FAC: $X$ Total number of dominant species $Y$ across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of: $IOO$ (AB)         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)
ree Stratum (use scientific names) Salix <u>)aeviaata</u> 50%= <u>2.5</u> 20%= <u>1</u> Total Cover: apling/Shrub Stratum (use scientific names) <u>Baccharis</u> <u>filulavis</u> 50%= <u>20%</u> = <u>Total Cover:</u> erb Stratum (use scientific names) <u>Jupha latifolia</u> <u>L'Epidiam Jatifolia</u> <u>L'Epidiam Jatifolia</u> <u>Bromus</u> <u>diandrus</u> <u>B. Hordeacous</u>	<u>% Cover</u> <u>45</u> <u>% Cover</u> <u>15</u> <u>% Cover</u> <u>40</u> <u>20</u> <u>15</u> <u>15</u> <u>15</u>	Species? YES Species? YES YES YES N	Status Status UPL Status OBL DBL UPL	Number of dominant species that are OBL, FACW, or FAC: $X$ Total number of dominant species $Y$ across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of: $IOO$ (AB)         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)
ree Stratum (use scientific names) Salix <u>)acvigata</u> 50%= <u>2.5</u> 20%= <u>1</u> Total Cover: apling/Shrub Stratum (use scientific names) <u>Baccharis</u> <u>filulavis</u> 50%= <u>20%</u> = <u>Total Cover:</u> erb Stratum (use scientific names) <u>Jupha latifolia</u> <u>L'Epidiam latifolia</u> <u>L'Epidiam latifolia</u> <u>Bromus</u> <u>diandrus</u> <u>B. hordeacous</u>	<u>% Cover</u> <u>5</u> <u>% Cover</u> <u>15</u> <u>% Cover</u> <u>40</u> <u>20</u> <u>15</u> <u>15</u> <u>15</u>	Species? YES Species? YES YES YES N	Status Status UPL Status OBL DBL UPL	Number of dominant species that are OBL, FACW, or FAC: $X$ Total number of dominant species $Y$ across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of: $IOO$ (AB)         OBL Species $x1 =$ FACW Species $x2 =$ FAC Species $x3 =$ FACU Species $x5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)
ree Stratum (use scientific names) Salix <u>)acviaata</u> 50%=2.5 20%= <u>1</u> Total Cover: apling/Shrub Stratum (use scientific names) <u>Baccharis</u> <u>filulavis</u> 50%= <u>20%</u> = <u>Total Cover:</u> erb Stratum (use scientific names) <u>Jupha latifolia</u> <u>L'Epidiam latifolia</u> <u>Gratiola ebracteata</u> <u>Bromus</u> <u>diandrus</u> <u>B. hordeacous</u> 50%= <u>50</u> 20%= <u>25</u> Total Cover:	<u>% Cover</u> <u>5</u> <u>% Cover</u> <u>15</u> <u>% Cover</u> <u>40</u> <u>20</u> <u>15</u> <u>15</u> <u>15</u> <u>15</u> <u>15</u> <u>15</u> <u>15</u>	Species? YES YES YES N N N N	Status Status UPL Status OBL OBL DPL FACW OBL	Number of dominant species that are OBL, FACW, or FAC: $X$ Total number of dominant species $Y$ across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of: $IOO$ (AB)         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)         Prevalance Index is $\leq 3.0^1$ Morphological Adaptations1 (provide supporting data in Remarks or on a separate sheet)
ree Stratum (use scientific names) Salix <u>)aeviaata</u> 50%= <u>2.5</u> 20%= <u>1</u> Total Cover: apling/Shrub Stratum (use scientific names) <u>Baccharis</u> <u>filulavis</u> 50%= <u>20%</u> = <u>Total Cover:</u> erb Stratum (use scientific names) <u>Tupha</u> <u>latifolia</u> <u>L'Epidicum</u> <u>latifolia</u> <u>L'Epidicum</u> <u>latifolia</u> <u>Bromus</u> <u>diandrus</u> <u>B. Hordeacova</u> 50%= <u>50</u> 20%= <u>26</u> Total Cover: pody/Vine Stratum (use scientific names)	<u>% Cover</u> <u>5</u> <u>% Cover</u> <u>15</u> <u>% Cover</u> <u>40</u> <u>20</u> <u>15</u> <u>15</u> <u>15</u>	Species? YES YES YES N N N N	Status Status UPL Status OBL OBL DPL FACW OBL	Number of dominant species that are OBL, FACW, or FAC: $X$ Total number of dominant species $Y$ across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of: $Multiply by$ OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)         Prevalance Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
ree Stratum (use scientific names) Salix <u>)aeviaata</u> 50%= <u>2.5</u> 20%= <u>1</u> Total Cover: apling/Shrub Stratum (use scientific names) <u>Baccharis</u> <u>filulavis</u> 50%= <u>20%</u> = <u>Total Cover:</u> erb Stratum (use scientific names) <u>Jupha latifolia</u> <u>L'Epidicum jatifolia</u> <u>L'Epidicum jatifolia</u> <u>Bromus</u> <u>diandrus</u> <u>B. hordeacous</u> 50%= <u>50</u> 20%= <u>26</u> Total Cover: pody/Vine Stratum (use scientific names)	<u>% Cover</u> <u>5</u> <u>% Cover</u> <u>15</u> <u>% Cover</u> <u>40</u> <u>20</u> <u>15</u> <u>15</u> <u>15</u> <u>15</u> <u>15</u> <u>15</u> <u>15</u>	Species? YES YES YES N N N N	Status Status UPL Status OBL OBL DPL FACW OBL	Number of dominant species that are OBL, FACW, or FAC: $X$ Total number of dominant species $Y$ across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of: $Multiply by$ OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)         Prevalance Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must
ree Stratum (use scientific names) Salix <u>)aeviaata</u> 50%= <u>2.5</u> 20%= <u>1</u> Total Cover: apling/Shrub Stratum (use scientific names) <u>Baccharis</u> <u>filulavis</u> 50%= <u>20%</u> = <u>Total Cover:</u> erb Stratum (use scientific names) <u>Tupha</u> <u>latifolia</u> <u>L'Epidicum</u> <u>latifolia</u> <u>L'Epidicum</u> <u>latifolia</u> <u>Bromus</u> <u>diandrus</u> <u>B. Hordeacova</u> 50%= <u>50</u> 20%= <u>26</u> Total Cover: pody/Vine Stratum (use scientific names)	% Cover           45           % Cover           15           % Cover           15           % Cover           10           15           15           % Cover           40           20           15	Species? YES Species? YES N N N Species? Species? Species? Species? N N N Species?	Status Status UPL Status OBL OBL DPL FACW OBL	Number of dominant species that are OBL, FACW, or FAC: $X$ Total number of dominant species $Y$ across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of: $IOO$ (AB)         Prevalence Index Worksheet Total % Cover of: $Multiply by$ OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)         Prevalance Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

2

# Soils

Depth <u>Matrix</u> (inches) <u>Color (moist)</u>	%	Redox Features Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
1-4 104R 3/2	95	104R 2/1	5	D	PL	GRAVEUT	Lorm
						· · · · · · · · · · · · · · · · · · ·	
ypes: C = Concentration D = I				Location: PL	= Pore Lir		
ydric Soil Indicators: (	Applicable t						ematic Hydric Soils <sup>3</sup>
Histosol (A1)				latrix (S4)		A CONTRACTOR OF A CONTRACTOR OFTA CONTRACTOR O	k (A9) (LRR C)
Histic Epipedon (A2)			Redox (S	den in the second		2 Can a c	k (A10) (LRR B)
Black Histic (A3)			d Matrix (	S. M. Walter			Vetric (F18)
Hydrogen Sulfide (A4)		Loamy	ana <sup>AR</sup> iana	e an chaile			nt Materials (TF2)
Stratified Layers (AG) (	(LRR C)	Loamy	Gleyed N	latrix (F2)			d Sand/Gravel Bars
1 cm Muck (A9) (LRR I	D)	Deplete	d Matrix	(F3)		Other (Ex	plain in Remarks)
Depleted Below Dark S	Surface (A11	I)Redox I	Dark Surf	face (F6)			5. 52 W M
Thick Dark Surface (A1	2)	Deplete	d Dark S	urface (F7)			drophytic vegetation an
Sandy Mucky Mineral (	S1)	X/_ Redox I	Depressio	ons (F8)		wetland hydrolog	gy must be present.
		Vernal I	Pools (F9	))			
	_		-			10.110 11.56	
Restrictive Layer (if present):	and the second		Depth (In	nches)	<u> </u>	ric Soil? <u>4155</u>	
	rdox	FRATURES	ØBG	FRVED	, =	HYDRIC S	BILS,
Hydrology Wetland Indicators			ØB 4	, ERVED	. =		
Hydrology Netland Indicators Primary Indicators (Any one in		ufficient)		SERVED	. =	Secondary Indica	tors (2 or more required
Hydrology Vetland Indicators Primary Indicators (Any one in Surface Water (A1)		ufficient)	st (B11)		, H	Secondary Indica	tors (2 or more required
Hydrology         Vetland Indicators         Primary Indicators (Any one in		ufficient) Salt Cru Biotic Cr	st (B11) rust (B12	)		Secondary Indica	tors (2 or more required rks (B1) (Riverine) Deposits (B2) (Riverin
Hydrology         Wetland Indicators         Primary Indicators (Any one in	dicator is su	ufficient) Salt Cru Biotic Cru Aquatic	st (B11) rust (B12 Invertebr	) rates (B13)	, H	Secondary IndicaWater MaSedimentDrift Depo	tors (2 or more required rks (B1) (Riverine) Deposits (B2) (Riverin psits (B3) (Riverine)
Hydrology         Vetland Indicators         Primary Indicators (Any one in	dicator is su	ufficient) Salt Cru Biotic Cru Aquatic Hydroge	st (B11) rust (B12 Invertebr en Sulfide	) rates (B13) e Odor (C1)		Secondary Indica Water Ma Sediment Drift Depo Drainage	tors (2 or more required rks (B1) (Riverine) Deposits (B2) (Riverine) psits (B3) (Riverine) Patterns (B10)
Hydrology         Netland Indicators         Primary Indicators (Any one in         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonr         Sediment Deposits (B2)	dicator is su iverine) (Nonriverine	ufficient) Salt Cru Biotic Cru Aquatic Hydroge e)X_Oxidized	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp	) rates (B13) e Odor (C1) oheres (C3)		Secondary IndicaWater MaSedimentDrift DepoDrainageDry-Seas	tors (2 or more required rks (B1) (Riverine) Deposits (B2) (Riverin osits (B3) (Riverine) Patterns (B10) on Water Table (C2)
Hydrology Netland Indicators Primary Indicators (Any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonr Sediment Deposits (B2) Surface Soil Cracks (B6	dicator is su iverine) (Nonriverine	ufficient) Salt Cru Biotic Cru Biotic Cru Aquatic Hydroge e) Oxidized Presend	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp e of Red	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C		Secondary Indica Sediment Sediment Drift Depo Drainage Dry-Seas Thin Muc	tors (2 or more required rks (B1) (Riverine) Deposits (B2) (Riverin osits (B3) (Riverine) Patterns (B10) on Water Table (C2) k Surface (C7)
Hydrology Netland Indicators Primary Indicators (Any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonr Sediment Deposits (B2) Surface Soil Cracks (B6 L Inundation Visible on	dicator is su iverine) (Nonriverine	ufficient) Salt Cru Biotic Cru Biotic Cru Aquatic Hydroge e)X Oxidized Presend Recent	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp e of Redu	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in		Secondary Indica Water Ma Sediment Drift Depo Drainage Dry-Seas Thin Muc Crayfish I	tors (2 or more required rks (B1) (Riverine) Deposits (B2) (Riverine) psits (B3) (Riverine) Patterns (B10) on Water Table (C2) k Surface (C7) Burrows (C8)
Hydrology Netland Indicators Primary Indicators (Any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonr Sediment Deposits (B2) Surface Soil Cracks (B6) Linundation Visible on Aerial Imagery (B7)	dicator is su iverine) (Nonriverine	ufficient) Salt Cru Biotic C Aquatic Hydroge b)X_Oxidized Presend Recent Plowed	st (B11) rust (B12 Invertebr en Sulfide I Rhizosp e of Redu ron Redu Soils (Ce	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in 5)		Secondary Indica Water Ma Sediment Drift Depo Drainage Dry-Seas Thin Muc Crayfish I Saturation	tors (2 or more required rks (B1) (Riverine) Deposits (B2) (Riverine) Patterns (B10) on Water Table (C2) & Surface (C7) Burrows (C8) n Visible on
Hydrology         Metland Indicators         Primary Indicators (Any one in         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonr         Sediment Deposits (B2)         Surface Soil Cracks (B6)         X	dicator is su iverine) (Nonriverine	ufficient) Salt Cru Biotic C Aquatic Hydroge b)X_Oxidized Presend Recent Plowed	st (B11) rust (B12 Invertebr en Sulfide I Rhizosp e of Redu ron Redu Soils (Ce	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in		Secondary Indica  Sediment  Sediment  Drift Depo  Drainage  Dry-Seas  Thin Muc  Crayfish I  Aerial Im	tors (2 or more required rks (B1) (Riverine) Deposits (B2) (Riverine) patterns (B10) on Water Table (C2) k Surface (C7) Burrows (C8) n Visible on agery (C9)
Hydrology         Netland Indicators         Primary Indicators (Any one in         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonr         Sediment Deposits (B2)         Surface Soil Cracks (B6)         Inundation Visible on         Aerial Imagery (B7)	dicator is su iverine) (Nonriverine	ufficient) Salt Cru Biotic C Aquatic Hydroge b)X_Oxidized Presend Recent Plowed	st (B11) rust (B12 Invertebr en Sulfide I Rhizosp e of Redu ron Redu Soils (Ce	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in 5)		Secondary Indica Water MaSedimentDrift DepoDrainageDry-SeasThin MucCrayfish BSaturation Aerial ImShallow A	tors (2 or more required rks (B1) (Riverine) Deposits (B2) (Riverine) Patterns (B10) on Water Table (C2) & Surface (C7) Burrows (C8) a Visible on agery (C9) Aquitard (D3)
Hydrology         Netland Indicators         Primary Indicators (Any one in         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonr         Sediment Deposits (B2)         Surface Soil Cracks (B6)         X         Inundation Visible on         Aerial Imagery (B7)         Water-Stained Leaves (	dicator is su iverine) (Nonriverine	ufficient) Salt Cru Biotic C Aquatic Hydroge b)X_Oxidized Presend Recent Plowed	st (B11) rust (B12 Invertebr en Sulfide I Rhizosp e of Redu ron Redu Soils (Ce	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in 5)		Secondary Indica Water MaSedimentDrift DepoDrainageDry-SeasThin MucCrayfish BSaturation Aerial ImShallow A	tors (2 or more required rks (B1) (Riverine) Deposits (B2) (Riverine) patterns (B10) on Water Table (C2) k Surface (C7) Burrows (C8) n Visible on agery (C9)
Hydrology Wetland Indicators Primary Indicators (Any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonr Sediment Deposits (B2) Surface Soil Cracks (B6) Minundation Visible on Aerial Imagery (B7) Water-Stained Leaves ( Field Observations	dicator is su iverine) (Nonriverine )) B9)	ufficient) Salt Cru Biotic Cru Biotic Cru Aquatic Aquatic Hydroge Presence Recent Plowed Other (E	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp e of Redu ron Redu Soils (C6 Explain in	ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in b) Remarks)	24)	Secondary IndicaWater MaSedimentDrift DepoDrainageDry-SeasThin MucCrayfish ISaturation Aerial ImShallow AFAC-Netu	tors (2 or more required rks (B1) (Riverine) Deposits (B2) (Riverine) Patterns (B10) on Water Table (C2) & Surface (C7) Burrows (C8) a Visible on agery (C9) Aquitard (D3) aral Test (D5)
Hydrology         Netland Indicators         Primary Indicators (Any one in         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonr         Sediment Deposits (B2)         Surface Soil Cracks (B6)         X         Inundation Visible on         Aerial Imagery (B7)         Water-Stained Leaves (	dicator is su iverine) (Nonriverine ) B9) No_	<u>ufficient)</u> Salt CruBiotic CruBiotic CruAquaticHydroge e)X_OxidizedPresendPresendRecent PlowedOther (E	st (B11) rust (B12 Invertebr en Sulfide I Rhizosp e of Redu Soils (C6 Soils	ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in b) Remarks)	24)	Secondary Indica Water MaSedimentDrift DepoDrainageDry-SeasThin MucCrayfish BSaturation Aerial ImShallow A	tors (2 or more required rks (B1) (Riverine) Deposits (B2) (Riverine) Patterns (B10) on Water Table (C2) & Surface (C7) Burrows (C8) a Visible on agery (C9) Aquitard (D3) aral Test (D5)
Hydrology         Netland Indicators         Primary Indicators (Any one in	dicator is su iverine) (Nonriverine )) B9) NoNo	ufficient)	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp e of Redu ron Redu Soils (C6 Explain in	ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in b) Remarks)	C4) Wetland	Secondary Indica  Water Ma Sediment Drift Depe Drainage Dry-Seas Thin Muc Crayfish B Saturation Aerial Im Shallow A FAC-Netu Hydrology? Yes	tors (2 or more required rks (B1) (Riverine) Deposits (B2) (Riverine) Patterns (B10) on Water Table (C2) & Surface (C7) Burrows (C8) a Visible on agery (C9) Aquitard (D3) aral Test (D5)
Hydrology         Netland Indicators         Primary Indicators (Any one in         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonr         Sediment Deposits (B2)         Surface Soil Cracks (B6)         Inundation Visible on         Aerial Imagery (B7)         Water-Stained Leaves (         Tield Observations         urface Water Present?         Yes         aturation Present?         Yes	dicator is su iverine) (Nonriverine ) B9) B9)	ufficient)	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp e of Redu ron Redu Soils (C6 ixplain in	ates (B13) Odor (C1) Oheres (C3) uced Iron (C uction in ) Remarks) (include)	C4) Wetland	Secondary Indica  Water Ma Sediment Drift Depo Drainage Dry-Seas Thin Muc Crayfish B Saturation Aerial Im Shallow A FAC-Netu Hydrology? Yes _X	tors (2 or more required rks (B1) (Riverine) Deposits (B2) (Riverine) Patterns (B10) on Water Table (C2) & Surface (C7) Burrows (C8) a Visible on agery (C9) Aquitard (D3) aral Test (D5)
Hydrology         Wetland Indicators         Primary Indicators (Any one in	dicator is su iverine) (Nonriverine ) B9) B9)	ufficient)	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp e of Redu lron Redu Soils (C6 Explain in s)s)s)s)s	ates (B13) Odor (C1) Oheres (C3) uced Iron (C uction in ) Remarks) (include)	C4) Wetland des capillar bus inspect	Secondary Indica  Water Ma Sediment Drift Depo Drainage Dry-Seas Thin Muc Crayfish B Saturation Aerial Im Shallow A FAC-Netu Hydrology? Yes _X	tors (2 or more required rks (B1) (Riverine) Deposits (B2) (Riverine) Patterns (B10) on Water Table (C2) & Surface (C7) Burrows (C8) a Visible on agery (C9) Aquitard (D3) arral Test (D5)

North State Resources				Habitat Type DITCH
Wetland Determination Data Form - Arid W	-			Welland Type EMERLENT WETOND
Project/Site:Sisk Dam Corrective Action Project		City/Count	y: <u>Merced</u>	County Sampling Date:
				State: <u>CA</u> Sampling Point: <u>5</u>
Investigator(s): <u>J. Colescott</u> Landform (hillslope, terrace, etc.) <u>DIZH</u>				- CADY CASE Slope % (2-2%)
Subregion (LRR) <u>LRR-C</u>	Col	_ Local rel		convex, none) <u>corrector</u> stope to <u>corrector</u>
Are climatic/hydrologic conditions on the site typical for this til				
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ signific		S		
Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u> natural				
Summary of Findings (Attach site map showing	samolina po	oint location	s transects	important features, etc.)
Hydrophytic vegetation? <u>YES</u> Hydric soil? <u>YES</u> Wetla	and hydrolo	gy? 4ES	Is sample	d area a wetland? Other waters?
USACE Jurisdiction Adjacent to Waters X_ Tributary to Waters X_ Isolate Explain:	d (with inte	rstate comm	nerce)	Isolated (non jurisdictional)
Evaluation of features designated "Oth	ner Wat	ers of t	he Unite	ed States"
Indicators: Defined bed and bank Scour _	Ordin	ary High Wa	ater Mark Ma	apped
Feature Designation: Perennial Intermittent Ep Natural Drainage Artificial Drain				Quad
Remarks SEASONAL EMERGENT				TADED WITH DITCH THAT
OAPTURES SEEPALE FROM DAY				
PLANT COMPOSITION. BOUNDED				
No contation				Dominance Test Worksheet
Vegetation Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Number of dominant species 3
1. Salix laevigata				that are OBL, FACW, or FAC: (A)
2				Total number of dominant species
3				across all strata: (B)
50% = 20 $20% = 8$ Total Cover:		0	Otation	Percent of dominant species that 100 (AB)
Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	are OBL, FACW, or FAC: (AB)
2.				Prevalence Index Worksheet Total % Cover of: Multiply by
3				OBL Species
4				FACW Species x2 =
50%=_/ 20%= Total Cover:				FAC Species x3 =
Herb Stratum (use scientific names)	% Cover 35	Species?	Status	FACU Species x4 =
1. Typha latifolia 2. Juncus tenois		46.5 YES	OBL FACW	UPL Species x5 =
3. Conyza canadensis	5	NOD	FAC	Column Totals (A) (B)
4.		100	<u></u>	Prevalance Index = B/A =
5				Hydrophytic Vegetation Indicators
6				Dominance Text is >50%
7				Prevalence Index is ≤ 3.0 <sup>1</sup> Morphological Adaptations <sup>1</sup> (provide supporting
50%= <u>30</u> 20%= <u>12</u> Total Cover:	nem como			data in Remarks or on a separate sheet)
	% Cover	Species?	Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must
1	<u> </u>			be present.
50%= 20%= Total Cover:				Hydrophytic Vegetation? 175
% Bare Ground in Herb Stratum 40 % Cover of Biot	_			

#### Soils

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators. Matrix Depth **Redox Features** % Loc<sup>2</sup> Texture Remarks (inches) Color (moist) Color (moist) % Type<sup>1</sup> 104R 3/2 7.51R 4/4 CLAY LOAM 85 C 0-6 15 M 101R 3/2 5 60 YR M -12 2.5 30 SMOPY LOAM D M AND YR 5 10 C <sup>1</sup>Types: C = Concentration D = Depletion RM = Reduced Matrix <sup>2</sup>Location: PL = Pore Lining RC = Root Channel M = Matrix Indicators for Problematic Hydric Soils<sup>3</sup> Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted) 1 cm Muck (A9) (LRR C) Histosol (A1) Sandy Gleyed Matrix (S4) 2 cm Muck (A10) (LRR B) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Reduced Vetric (F18) Stripped Matrix (S6) Red Parent Materials (TF2) \_ Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Vegetated Sand/Gravel Bars Stratified Layers (AG) (LRR C) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) 1 cm Muck (A9) (LRR D) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) <sup>3</sup>Indicators of hydrophytic vegetation and Depleted Dark Surface (F7) Thick Dark Surface (A12) wetland hydrology must be present. Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) Hydric Soil? YES Restrictive Layer (if present): Type: Depth (Inches) Remarks HYDRIC GOILS Hydrology Wetland Indicators Secondary Indicators (2 or more required) Primary Indicators (Any one indicator is sufficient) Water Marks (B1) (Riverine) Surface Water (A1) Salt Crust (B11) Sediment Deposits (B2) (Riverine) High Water Table (A2) Biotic Crust (B12) Drift Deposits (B3) (Riverine) Saturation (A3) Aquatic Invertebrates (B13) Drainage Patterns (B10) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) X Sediment Deposits (B2) (Nonriverine) X Oxidized Rhizospheres (C3) Thin Muck Surface (C7) Surface Soil Cracks (B6) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Inundation Visible on Recent Iron Reduction in Aerial Imagery (B7) Plowed Soils (C6) Saturation Visible on Water-Stained Leaves (B9) Other (Explain in Remarks) Aerial Imagery (C9) Shallow Aguitard (D3) FAC-Netural Test (D5) **Field Observations** Wetland Hydrology? Yes X No \_\_\_\_ Surface Water Present? No X Depth (inches) Yes Water Table Present? No\_K Depth (inches) Yes Saturation Present? Yes No X Depth (inches) (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, and previous inspections), if available:

Remarks SEEP DITCH + ADDACENT WETCANDS.

North State Resources				Habitat Type DRCH
Wetland Determination Data Form - Arid W	est Reg	ion		Wetland Type EMIERLENT WL
Project/Site:Sisk Dam Corrective Action Project	-	City/Count	lv: Morced	County Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation		ongrooun		State: <u>CA</u> Sampling Point: <u>6</u>
Investigator(s):				
Landform (hillslope, terrace, etc.) DITCH		Local rol	liof /concavo	CONVEY RODEL (TA) AAVE SLODE % 2-2/2
Subregion (LRR)RR-C	Co	LOGarrei		allvar Loam 2-8%
Are climatic/hydrologic conditions on the site typical for this ti			5 C	
Are vegetation <u>No</u> , soil <u>No</u> , or hydrology <u>P</u> signific				
Are vegetation <u>NO</u> , soil <u>NO</u> hydrology <u>NO</u> natura	lly problema	atic? (if ne	eded, explail	n any answers in Remarks.)
Summary of Findings (Attach site map showing	sampling p	oint location	is, transects,	important features, etc.)
Hydrophytic vegetation? 1ES Hydric soil? 1ES Wet	and hydrolo	Day? TES	ls sampled	d area a wetland? 1ES_Other waters?
USACE Jurisdiction Adjacent to Waters X Tributary to Waters X Isolate	ed (with inte	rstate com	nerce)	Isolated (non jurisdictional)
Explain:				
Evaluation of features designated "Ot	ner Waf	ters of t	he Unite	
Indicators: Defined bed and bank Scour_				
Feature Designation: Perennial Intermittent Ep Natural Drainage Artificial Drain	hemeral	Navigable	ne on USGS Water	Quad 4 RANK IN ITIS SECTION OF WEILAND
Remarks		Trangable		SECTION OF WRITING
EAST BOUNDARY OF L	NOIS	"SEE	NIT O	H" WETTANN
10571 BOUNDING OF W	neur	75-22	Paric	
Vegetetion				Dominance Test Worksheet
Vegetation Tree Stratum (use scientific names)	Absolute % Cover	Species?	Indicator Status	Number of dominant species //
	10	y	FACW	that are OBL, FACW, or FAC: (A)
2. Salix Jazvigata	30	ч	FACA	Total number of dominant species 4
3				across all strata:(B)
50%=_ <u>20</u> 20%= <u></u> Total Cover:	40			Percent of dominant species that
Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	are OBL, FACW, or FAC: _/ 00 (AB)
n				
2/				Prevalence index Worksheet Total % Cover of: Multiply by
/				OBL Species x1=
/				FACW Species x2 =
50%= 20%= Total Cover:				FAC Species x3 =
lerb Stratum (use scientific names)	% Cover	Species?	Status	
	40	TES	OBL	FACU Species ×4 =
Hocdesn leporinom	35	····Υ	EAC	UPL Species x5 =
Polypogon Monspeliensis		N	FACW	Column Totals (A) (B)
CoRuza canadensis		N	FAC	Prevalance Index = B/A =
	-			Hydrophytic Vegetation Indicators
	21 - 22 - 20 - 20 - 12 -			Dominance Text is >50%
				Prevalence Index is ≤ 3.0 <sup>1</sup>
50%= 20%= Total Cover:	100			Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet)
loody/Vine Stratum (use scientific names)	277493900 - Contra Contra	Species?	Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
				be present.
50%= 20%= Total Cover:				Hydrophytic Vegetation? <u>YES</u>
Bare Ground in Herb Stratum _ % Cover of Biot	ic Crust			

.

# Soils

Depth <u>Matrix</u> nches) <u>Color (moist)</u> %	Redox Features Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	STR 7/6	5	C	m	GRAVELLY	CIAY LOAM
-10 104R 1/4 70 7.5	5YR 4/6	25	C	M	11	n 7
	24 1 4/10GY	5	D	M		n h
ypes: C = Concentration D = Depletion RM =	Reduced Matrix	2	Location: PL		ing RC = Root C	Channel M = Matrix
······		127			1	
ydric Soil Indicators: (Applicable to all						blematic Hydric Soils <sup>3</sup>
Histosol (A1)	•		latrix (S4)		······································	/uck (A9) (LRR C) /uck (A10) (LRR B)
Histic Epipedon (A2) Black Histic (A3)		Redox (S			Contraction and the contraction of the	ed Vetric (F18)
Hydrogen Sulfide (A4)		d Matrix (			19 19 19 19 19 19 19 19 19 19 19 19 19 1	arent Materials (TF2)
Hydrogen Sunde (A4) Stratified Layers (AG) (LRR C)		11.11.11.11.11.11.11.11.11.11.11.11.11.	ineral (F1)			ated Sand/Gravel Bars
1 cm Muck (A9) (LRR D)		-72 - 0 # 0.0 21: 20:	Aatrix (F2)			(Explain in Remarks)
Depleted Below Dark Surface (A11)		ed Matrix Dark Surl	•			Lynam II Iveniairol
Thick Dark Surface (A12)			urface (F7)		3Indicators of	hydrophytic vegetation and
Sandy Mucky Mineral (S1)	A / .	Depressio				ology must be present.
		Pools (F9	· · ·			625 -
Remarks HYDRIC SOICS.	<u> </u>	Depth (Ir	nches)	Hydri	c Soil? <u>YES</u>	
Remarks HYDRIC SOILS. Hydrology Wetland Indicators		Depth (Ir	nches)	Hydri		
Remarks HYDRIC SOILS. Hydrology Wetland Indicators		Depth (Ir	nches)	Hydri		icators (2 or more required)
Remarks HYDRIC SOILS. Hydrology Wetland Indicators			nches)	Hydri	Secondary Ind	icators (2 or more required) Marks (B1) (Riverine)
Remarks HYDRIC SOICS. Hydrology Netland Indicators Primary Indicators (Any one indicator is suffici	ent) Salt Cru			Hydri	Secondary Ind	Marks (B1) (Riverine)
Remarks HYDRIC SOICS. Hydrology Wetland Indicators Primary Indicators (Any one indicator is suffici Surface Water (A1)	ent) Salt Cru Biotic Ci	ist (B11) rust (B12		Hydri	Secondary Ind	Marks (B1) (Riverine)
Remarks HYDRIC SOICS. Hydrology Metland Indicators Primary Indicators (Any one indicator is suffici Surface Water (A1) High Water Table (A2)	ent) Salt Cru Biotic Ci Aquatic	st (B11) rust (B12 Invertebr	)	Hydri	Secondary Ind	ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10)
Remarks HYDRIC SOICS. Hydrology Wetland Indicators Primary Indicators (Any one indicator is suffici Surface Water (A1) High Water Table (A2) Saturation (A3)	ent) Salt Cru Biotic Cr Aquatic Hydroge	st (B11) rust (B12 Invertebr en Sulfide	) rates (B13)	Hydri	Secondary Ind	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine)
Remarks HYDRIC SOICS. Hydrology Wetland Indicators Primary Indicators (Any one indicator is suffici Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine)	ent) Salt Cru Biotic Cl Aquatic Hydroge Oxidized	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp	) rates (B13) e Odor (C1)		Secondary Ind Water Sedime Drift De Dry-Se	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10)
Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sufficing	ent) Salt Cru Biotic Cru Biotic Cru Aquatic Aquatic Hydroge Oxidized Presenc Recent	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp e of Redu Iron Redu	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in		Secondary Ind Water Sedime Drift De Drift De Draina Dry-Se Thin M	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2)
Remarks HYDRIC SOICS. Hydrology Wetland Indicators Primary Indicators (Any one indicator is sufficing Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)	ent) Salt Cru Biotic Cru Aquatic Aquatic Voxidized Oxidized Presenc Recent Recent	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp e of Redu Iron Redu Soils (Ce	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in 5)		Secondary Ind Water Sedime Drift De Draina Dry-Se Thin M Crayfis Satura	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) tion Visible on
Remarks HYDRIC SOILS. Hydrology Wetland Indicators Primary Indicators (Any one indicator is suffici Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on	ent) Salt Cru Biotic Cru Aquatic Aquatic Voxidized Oxidized Presenc Recent Recent	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp e of Redu Iron Redu Soils (Ce	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in		Secondary Ind Water Sedime Drift De Drift De Draina Dry-Se Thin M Crayfis Satural Aerial	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) tion-Visible-on Imagery (C9)
Remarks HYDRIC SONCS. Hydrology Vetland Indicators Primary Indicators (Any one indicator is sufficing Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)	ent) Salt Cru Biotic Cru Aquatic Aquatic Voxidized Oxidized Presenc Recent Recent	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp e of Redu Iron Redu Soils (Ce	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in 5)		Secondary Ind Water Sedime Drift De Dry-Se Thin M Crayfis Satural Aerial Shallow	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) tion-Visible on Imagery (C9) w Aquitard (D3)
Remarks       HYDRIC SONS.         Hydrology         Metiand Indicators         Primary Indicators (Any one indicator is sufficing)         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonriverine)         Sediment Deposits (B2) (Nonriverine)         Surface Soil Cracks (B6)         Inundation Visible on         Aerial Imagery (B7)         Water-Stained Leaves (B9)	ent) Salt Cru Biotic Cru Aquatic Aquatic Voxidized Oxidized Presenc Recent Recent	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp e of Redu Iron Redu Soils (Ce	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in 5)		Secondary Ind Water Sedime Drift De Dry-Se Thin M Crayfis Satural Aerial Shallow	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) tion-Visible-on Imagery (C9)
Remarks       HyDRIC SONS.         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sufficing         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonriverine)         Sediment Deposits (B2) (Nonriverine)         Surface Soil Cracks (B6)         Inundation Visible on         Aerial Imagery (B7)         Water-Stained Leaves (B9)	ent) Salt Cru Biotic Cru Aquatic Aquatic Oxidized Oxidized Presenc Recent I Plowed Other (E	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp e of Redu lron Redu Soils (Cé explain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in 5) Remarks)	(4)	Secondary Ind Water Sedime Drift De Dry-Se Thin M Crayfis Satural Aerial Shallow FAC-N	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) tion Visible on Imagery (C9) w Aquitard (D3) etural Test (D5)
Remarks       HYDRIC SONS.         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is suffici	ent) Salt Cru Biotic Cu Aquatic Aquatic Aquatic Qoxidized Qoxidize	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp e of Redu lron Redu Soils (Cf soils	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in 5) Remarks)	(4)	Secondary Ind Water Sedime Drift De Dry-Se Thin M Crayfis Satural Aerial Shallow	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) tion Visible on Imagery (C9) w Aquitard (D3) etural Test (D5)
Remarks HYDRIC SOICS. Hydrology Vetland Indicators Primary Indicators (Any one indicator is sufficing Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Sield Observations	ent) Salt Cru Biotic Cru Aquatic Aquatic Oxidized Oxidized Presenc Recent I Plowed Other (E	st (B11) rust (B12 Invertebr en Sulfide d Rhizosp e of Redu Soils (Ce Explain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in 5) Remarks)	:4) Wetland I	Secondary Ind Water Sedime Drift De Drift De Dry-Se Thin M Crayfis Staurai Aerial Shallow FAC-N Hydrology? Yes	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) tion Visible on Imagery (C9) w Aquitard (D3) etural Test (D5)

Remarks WETTEND by DROLDEY.

North State Resources				Habitat Type GRASSUND
Wetland Determination Data Form - Arid V	Vest Reg	ion		Wetland Type UPLAND
Project/Site:Sisk Dam Corrective Action Project		City/Count	v: Merced	County Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation		ongrooun		State: CA_Sampling Point:
Investigator(s):				
Landform (hillslope, terrace, etc.)		Local rel	ef (concave	convex, rone Slope % O - 2
Landform (hillslope, terrace, etc.)	So	il Map Unit I	Vame: Bo	Ilvay Loan 2-8%
Are climatic/hydrologic conditions on the site typical for this t	ime of year	4551	lf no, explair	n in remarks.)
Are vegetation $N$ , soil $N$ , or hydrology $N$ signifi				
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natura				
Summary of Findings (Attach site map showing Hydrophytic vegetation? No Hydric soil? No Wet	land hydrolc	gy? NO	ls sampled	area a wetland? <u>NC</u> Other waters? <u>NO</u>
USACE Jurisdiction Adjacent to Waters Tributary to Waters Isolat Explain:	ed (with inte	rstate comm	ierce)	Isolated (non jurisdictional)
Explain: / Evaluation of features designated "Ot Indicators: Defined bed and bank Scour Feature Designation: Perennial Intermittent E Natural Drainage Artificial Drain	Ordin	ary High Wa	ater Mark Ma	apped
Remarks UPLAND PARE TO				
Home of Dive three 18	-6			
Vegetation	Absolute	Dominant	Indicator	Dominance Test Worksheet
Tree Stratum (use scientific names)	% Cover	Species?	Status	Number of dominant species that are OBL, FACW, or FAC:(A)
1				Personal and the second second
2				Total number of dominant species 4 (B)
3				
50%= 20%= Total Cover:		Creation	Ctatus	Percent of dominant species that are OBL, FACW, or FAC: 50 (AB)
Sapling/Shrub Stratum (use scientific names)	<u>% Cover</u>	Species?	JPL	are OBL, FACW, or FAC: (AB)
2. Atriplex Tentiformis	2	N	FAC	Prevalence Index Worksheet
3 The production of the second second				Total % Cover of:     Multiply by       OBL Species     Ø       x1 =     Ø
4.	·			
50%=	1			70 111
Herb Stratum (use scientific names)	% Cover	Species?	Status	FAC Species $\underline{50} \times 3 = \underline{714}$ FAC II Species $\underline{50} \times 4 = 200$
1. Hordeum leporinum	35	Ý	FAC	A CO
2. Bromus hordeacous	35	Y	FACL	UPL Species $100 \times 5 = 90$
3. Centaurea golstitialis	5	N	UPL	Column Totals 10(@ (A) 404 (B)
4. Grindelia, rumporum	15	N	FACU	Prevalance Index = $B/A = 3 \cdot 7$
5. Avena barbata	10	P	UPL	Hydrophytic Vegetation Indicators
6				Dominance Text is >50%
7				Prevalence Index is $\leq 3.0^{1}$
50%= <u>60</u> 20%= <u>20</u> Total Cover:	160			Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet)
Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1		A.		<sup>1</sup> Indicators of hydric soil and wetland hydrology must

· · · · · · · · · · · · · · · · · · ·	NI
Hydrophytic Vegetation?	N
indiopitytic regetation.	

. . .

% Bare Ground in Herb Stratum \_\_\_\_\_ % Cover of Biotic Crust \_\_\_\_\_

20%=\_

Total Cover:

2.

50%=\_\_\_\_

-

# Soils

	atrix	10 C	Redox Features	1112	20			600 K
$\frac{(\text{inches})}{D - 6} \frac{Color(1)}{104R 4}$			Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture GRAVFILLY	LO AM
Types: C = Concentrati Iydric Soil Indica Histosol (A1) Histic Epipedo Black Histic (A Hydrogen Sulf Stratified Laye 1 cm Muck (As Depleted Belo Thick Dark Sul Sandy Mucky	on D = Depleti tors: (Applic 1) (A2) (A2) (A3) (A4) (CA2) (A2) (CA	c)	LRRs, unless otf Sandy G Sandy F Stripped Loamy G Loamy G Deplete Redox D Deplete	nerwise r Gleyed M Redox (S d Matrix ( Mucky M Gleyed M d Matrix Dark Surf	noted) fatrix (S4) (S6) ineral (F1) fatrix (F2) (F3) face (F6) urface (F7)		Reduced Reduced Red Parer Red Parer Vegetated Other (Exp <sup>3</sup> Indicators of hyd	ematic Hydric Soils <sup>3</sup>
			Vernal F	Pools (F9	))			
	oresent): Type		50°L	Depth (In	nches)	_ Hydri	c Soil? NO	
Remarks NO	N HY				nches)	_ Hydri	c Soil? <u>NO</u>	
Remarks Nor Hydrology Wetland Indicato	ns Hyz	DRIC	50.6		nches)	_ Hydri	· · · ·	ors (2 or more required
Remarks Nor Hydrology Wetland Indicato Primary Indicators (Ar	N HY2	DRIC	らの, し ?	Ś	inches)	_ Hydri	Secondary Indicat	ors (2 or more required
Remarks Nor Hydrology Wetland Indicator Primary Indicators (Ar Surface Water	N HY2 rs ny one indicato (A1)	DRIC	ح0, ८ € ent)Salt Cru	5 st (B11)		_ Hydri	Secondary Indicat	ks (B1) (Riverine)
Remarks Nor Hydrology Netland Indicato Primary Indicators (Ar	N HY2 rs ny one indicato (A1) ole (A2)	DRIC	ج ۲ ، ۲ ج ent) Salt Crue Biotic Cr	St (B11) ust (B12)		Hydri	Secondary Indicat	ks (B1) (Riverine)
Remarks Nor Hydrology Wetland Indicato Primary Indicators (Ar Surface Water High Water Tai	rs ny one indicato (A1) ble (A2)	DR / (	ج 0 ، ر ج ent) Salt Crue Biotic Cr Aquatic	st (B11) ust (B12)	)	_ Hydri	Secondary Indicat	rks (B1) (Riverine) Deposits (B2) (Riverine
Remarks NO Hydrology Wetland Indicato Primary Indicators (Ar Surface Water High Water Tal Saturation (A3)	N 2442 rs iy one indicato (A1) ole (A2) (1) (Nonriverine	DRIC or is sufficie	sent) Salt Crue Biotic Cr Aquatic Hydroge	st (B11) ust (B12) Invertebr n Sulfide	) ates (B13)	Hydri	Secondary Indicat	ks (B1) (Riverine) Deposits (B2) (Riverine sits (B3) (Riverine)
Remarks Nor Hydrology Wetland Indicato Primary Indicators (Ar Surface Water High Water Tal Saturation (A3) Water Marks (E	v 2442 rs ny one indicato (A1) ole (A2) (Nonriverine isits (B2) (Noni	DRIC or is sufficie	sent) Salt Crus Biotic Crus Aquatic I Hydroge Oxidized	st (B11) ust (B12) Invertebr n Sulfide I Rhizosp	) ates (B13) Odor (C1)		Secondary Indicat	rks (B1) (Riverine) Deposits (B2) (Riverine sits (B3) (Riverine) Patterns (B10) on Water Table (C2)
Hydrology Wetland Indicator Primary Indicators (Ar Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo	rs ny one indicato (A1) (A1) (Nonriverine sits (B2) (Nonri acks (B6) ole on (B7)	DRIC or is sufficie	Salt Crue Biotic Crue Biotic Cr Aquatic Hydroge Oxidized Presence Recent I Plowed	st (B11) ust (B12) Invertebr n Sulfide Rhizosp e of Redu Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in		Secondary Indicat  Secondary Indicat  Water Mar Sediment Drift Depo Drainage I Dry-Seaso Thin Muck Crayfish B Saturation Aerial Ima Shallow Advice	rks (B1) (Riverine) Deposits (B2) (Riverine sits (B3) (Riverine) Patterns (B10) on Water Table (C2) Surface (C7) urrows (C8) Visible on
Remarks Nor Hydrology Wetland Indicato Primary Indicators (Ar Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil Aerial Imagery Water-Stained	N HY J rs ny one indicato (A1) (A1) (Nonriverine usits (B2) (Noni acks (B6) ble on (B7) Leaves (B9)	DRIC or is sufficie	Salt Crue Biotic Crue Biotic Cr Aquatic Hydroge Oxidized Presence Recent I Plowed	st (B11) ust (B12) Invertebr n Sulfide Rhizosp e of Redu Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in 5)	4)	Secondary Indicat Water Mar Sediment Drift Depo Drainage I Dry-Seaso Thin Muck Crayfish B Saturation Aerial Ima Shallow Av FAC-Netur	rks (B1) (Riverine) Deposits (B2) (Riverine) sits (B3) (Riverine) Patterns (B10) on Water Table (C2) Surface (C7) urrows (C8) Visible on agery (C9) quitard (D3) ral Test (D5)
Remarks Nor Hydrology Wetland Indicator Primary Indicators (Ar Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil Aerial Imagery Water-Stained	N HY J rs ny one indicato (A1) (A1) (Nonriverine usits (B2) (Noni acks (B6) ble on (B7) Leaves (B9)	DR / ( or is sufficie	Salt Crue Biotic Cr Biotic Cr Aquatic Hydroge Oxidized Presence Recent I Plowed Other (E	st (B11) ust (B12) Invertebr n Sulfide I Rhizosp e of Redu Soils (C6 xplain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in 5)	4)	Secondary Indicat  Secondary Indicat  Water Mar Sediment Drift Depo Drainage I Dry-Seaso Thin Muck Crayfish B Saturation Aerial Ima Shallow Advice	rks (B1) (Riverine) Deposits (B2) (Riverine) sits (B3) (Riverine) Patterns (B10) on Water Table (C2) Surface (C7) urrows (C8) Visible on agery (C9) quitard (D3) ral Test (D5)
Remarks Nor Hydrology Wetland Indicator Primary Indicators (Ar Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil Aerial Imagery	N HY J rs ny one indicato (A1) (A1) (Nonriverine sits (B2) (Nonri acks (B6) ble on (B7) Leaves (B9)	DR / ( or is sufficie ) riverine) No	Sort ent) Salt Crue Biotic Cr Aquatic f Hydroge Oxidized Presence Recent f Plowed Other (E	st (B11) ust (B12) Invertebr n Sulfide I Rhizosp e of Redu ron Redu Soils (C6 xplain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in 5)	4)	Secondary Indicat Water Mar Sediment Drift Depo Drainage I Dry-Seaso Thin Muck Crayfish B Saturation Aerial Ima Shallow Av FAC-Netur	rks (B1) (Riverine) Deposits (B2) (Riverine) sits (B3) (Riverine) Patterns (B10) on Water Table (C2) Surface (C7) urrows (C8) Visible on agery (C9) quitard (D3) ral Test (D5)

Remarks NO WEITHND HYDROLDCY INDICATORS.

i.

North State Resources	Habitat Type MUEADOC
Wetland Determination Data Form - Arid West Region	Wetland Type _ UP UAND
Project/Site:Sisk Dam Corrective Action Project City/County:Merced Count	y
Applicant/Owner:U.S. Bureau of Reclamation	State: <u>CA</u> Sampling Point:
Investigator(s): J. Colescott	
Landform (hillslope, terrace, etc.) PUHN Local relief (concave, conve	x, none) CONVEX Slope % 2-5
Subregion (LRR) Soil Map Unit Name: Kero E	Ivents, Extremly gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in ren	narks.)
Are vegetation $N$ , soil $N$ , or hydrology $J$ significantly disturbed? Are normal circumstance	es present? YES
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{J}$ significantly disturbed? Are normal circumstance Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ naturally problematic? (If needed, explain any a	nswers in Remarks.)
Summary of Findings (Attach site map showing sampling point locations, transects, import Hydrophytic vegetation?	
USACE Jurisdiction	
Adjacent to Waters Tributary to Waters Isolated (with interstate commerce) Isolat Explain:	ted (non jurisdictional)
Evaluation of features designated "Other Waters of the United St	tates"
Indicators: / Defined bed and bank Scour Ordinary High Water Mark Mapped	
Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Natural Drainage Artificial Drainage Navigable Water	
Remarks UPLAND PAIR TO DP. 9.	

Vegetation Tree Stratum (use scientific names)	Absolute <u>% Cover</u>	Dominant Indicator Species? Status	Dominance Test Worksheet Number of dominant species that are OBL, FACW, or FAC:(A)
2			Total number of dominant species 5 (B)
1. Atropley lentiformis	<u>% Cover</u>		Percent of dominant species that 40 (AB) are OBL, FACW, or FAC: (AB) Prevalence Index Worksheet Total % Cover of: Multiply by
3 4 50%= <u>2.5</u> 20%=_ <b>i</b> Total Cover:			OBL Species x1 = FACW Species x2 =
Herb Stratum (use scientific names)	% Cover 25	Species? Status	FAC Species     x 3 =       FACU Species     x 4 =       UPL Species     x 5 =
3. B. dlandros 4. Grindelia camporum	20	Y UPL Y FACU	Column Totals (A) (B) Prevalance Index = B/A =
6. Lepidium latifolium 7.		N UPL N FACEN	Hydrophytic Vegetation Indicators Dominance Text is >50% Prevalence Index is ≤ 3.0 <sup>1</sup> Morphological Adaptations <sup>1</sup> (provide supporting
50%= 50 20%= 20 Total Cover: Woody/Vine Stratum (use scientific names) 1.		Species? Status	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.
2	A		Hydrophytic Vegetation? $\underline{NO}$

DOVE

SÉ.

40

#### Soils

	latrix		1.1.1.1	edox Feature	2	- 1					Demerica	
	(moist)	<u>%</u>		blor (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	1.14		Remarks	
2-8 104R	1/4	85	104	R 3/2	10	<u> </u>	<u>_M_</u>	GRAVE L	09	20	An	
		<u> </u>	10 1	R 5/2	_5_	_P	M	<u><u><u></u></u><u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u></u>	_			-
									845			_
ypes: C = Concentra						Location: PL =			-		and the set of sectors and	
ydric Soil Indic	ators <u>: (</u>	Applicable	to all L			and the second			14200	10.04	atic Hydric Soils <sup>3</sup>	
Histosol (A1)				Sandy	Gleyed M	latrix (S4)				- 10 B	49) (LRR C)	
Histic Epiped	on (A2)			Sandy	Redox (S	5)					410) (LRR B)	
Black Histic (	A3)			Stripp	ed Matrix (	(S6)					ric (F18)	
Hydrogen Su	lfide (A4)			Loamy	Mucky M	ineral (F1)					Aaterials (TF2)	
Stratified Lay	ers (AG)	(LRR C)		Loamy	Gleyed M	latrix (F2)					and/Gravel Bars	
1 cm Muck (A	9) (LRR	D)		Deplet	ted Matrix	(F3)		Oth	er (E	xplai	in in Remarks)	
Depleted Bel	ow Dark S	Surface (A1	1)	Redox	Dark Surf	face (F6)		10				
Thick Dark S	urface (A1	12)		Deplet	ted Dark S	urface (F7)					phytic vegetation	
Sandy Mucky	Mineral (	(S1)	53	Redox	Depressio	ons (F8)		wetland hy	drolo	ogy n	nust be present.	
			13	Verna	Pools (F9	))						
		<u></u>			<u></u>	<u> </u>		M				
		Type: HYDRI		OIL IN	Depth (In	obes	_ Hydi PRESE	$\frac{1}{2}$	5			
Remarks 500 Hydrology Wetland Indicat	ufe 1	HYDRI	( 9					2105.				
Remarks 500 Hydrology Wetland Indicat	ufe 1	HYDRI	( 9					2105.		ators	(2 or more req	Jired)
Remarks 500 Hydrology Wetland Indicat	ors	HYDRI	( 9					Secondary	Indica		(2 or more req (B1) (Riverine)	uired)
Remarks 500 Hydrology Netland Indicat Primary Indicators (A	ors ny one in	HYDRI	( 9	t) Salt Cr	DICA	5629		Secondary	Indica	arks		
Remarks 500 Hydrology Netland Indicators (A Primary Indicators (A Surface Wate	ors ny one in r (A1) able (A2)	HYDRI	( 9	t) Salt Cr Biotic (	ust (B11) Crust (B12	5629		Secondary	Indica ter Ma	arks nt De	(B1) (Riverine)	erine)
Remarks 500 Hydrology Wetland Indicat Primary Indicators (/ Surface Wate High Water T	ors ny one in r (A1) able (A2)	HYDRI Indicator is s	( 9	it) Salt Cr Biotic ( Aquatio	ust (B11) Crust (B12 c Invertebr	)		Secondary Wat Sed Driff	Indica ter Ma imen t Dep	arks nt De oosits	(B1) (Riverine) posits (B2) (Riv	erine)
Remarks 500 Hydrology Netland Indicate Primary Indicators (A Surface Wate High Water Ta Saturation (A	ors ors (A1) able (A2) 3) B1) (Nonr	tiverine)	C 5	t) Salt Cr Biotic ( Aquational Hydrog	ust (B11) Crust (B12 c Invertebr gen Sulfide	) rates (B13)		Secondary Wat Sed Drift Drai	Indica ter Ma limen t Dep inage	arks ht De bosits e Pat	(B1) (Riverine) posits (B2) (Riv s (B3) (Riverine)	erine) )
Remarks 500 Hydrology Wetland Indicat Primary Indicators (A Surface Water High Water Tr Saturation (A Water Marks	ors ny one in r (A1) able (A2) b) B1) (Nonr posits (B2)	HYDRI Idicator is s riverine) ) (Nonriverin	C 5	t) Salt Cr Biotic ( Aquatio Hydrog Oxidize	nust (B11) Crust (B12) c Invertebr gen Sulfide	) ates (B13) Odor (C1)	PRESI	Secondary Wat Sed Drift Drai Dry-	Indica ter Ma imen t Dep inage -Seas	arks ht De bosits e Pat son N	(B1) (Riverine) posits (B2) (Riv s (B3) (Riverine) tterns (B10)	erine) )
Remarks 500 Hydrology Wetland Indicate Primary Indicators (A Surface Wate High Water Ta Saturation (A Water Marks Sediment Dep	ors any one in (A1) able (A2) B1) (Nonr osits (B2) cracks (B6	HYDRI Idicator is s riverine) ) (Nonriverin	C 5	t) Salt Cr Biotic ( Aquational Hydrog Oxidize Present	nust (B11) Crust (B12) c Invertebr gen Sulfide	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C4	PRESI	Secondary Wat Sed Drift Drai Dry- Thir	Indica er Ma imen t Dep inage Seas	arks ot De oosits e Pat son V ck Su	(B1) (Riverine) posits (B2) (Riv s (B3) (Riverine) tterns (B10) Water Table (C2	erine) )
Remarks 500 Hydrology Netland Indicate Primary Indicators (A Surface Wate High Water Ta Saturation (A Water Marks Sediment Dep Surface Soil (	ors ny one in r (A1) able (A2) 3) B1) (Nonr osits (B2) cracks (B6 ible on	HYDRI Idicator is s riverine) ) (Nonriverin	C 5	t) Salt Cr Biotic ( Aquational Hydrog Oxidized Presen Recent	ust (B11) Crust (B12 c Invertebr gen Sulfide ed Rhizosp ace of Red	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C4) uction in	PRESI	Secondary Wat Sed Drift Drai Dry- Thir	Indica ter Ma imen t Dep inage Seas n Muc	arks at De oosits Pat son N ck Su Burr	(B1) (Riverine) posits (B2) (Riverine) terns (B10) Water Table (C2 urface (C7) rows (C8)	erine) )
Hydrology Wetland Indicat Primary Indicators (A Surface Wate High Water Ta Saturation (A Water Marks Sediment Dep Surface Soil C Inundation Vis	ors ny one in (A1) able (A2) ) B1) (Nonr osits (B2) pracks (B6 ible on y (B7)	HYDRI Idicator is s iverine) ) (Nonriverin 3)	C 5	t) Salt Cr Biotic C Aquatio Hydrog Oxidize Presen Recent Plowe	UST (B11) Crust (B12) Crust (B12 c Invertebr gen Sulfide ed Rhizosp ince of Redu t Iron Redu d Soils (Ce	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C4) uction in	PRESI	Secondary  Secondary  Wat  Sed  Drift  Dra  Dry  Cra  Satu  Aer	Indica er Ma imen t Dep inage Seas a Muc yfish uratio ial Im	arks to De oosits Pat son V ck Su Burr on Vi nage	(B1) (Riverine) posits (B2) (Riv s (B3) (Riverine) terns (B10) Water Table (C2 urface (C7) ows (C8) sible-on ry (C9)	erine) )
Remarks 500 Hydrology Netland Indicate Primary Indicators (A Surface Wate High Water Tri Saturation (A Water Marks Sediment Dep Surface Soil C Inundation Vis Aerial Imager	ors ny one in (A1) able (A2) ) B1) (Nonr osits (B2) pracks (B6 ible on y (B7)	HYDRI Idicator is s iverine) ) (Nonriverin 3)	C 5	t) Salt Cr Biotic C Aquatio Hydrog Oxidize Presen Recent Plowe	UST (B11) Crust (B12) Crust (B12 c Invertebr gen Sulfide ed Rhizosp ince of Redu t Iron Redu d Soils (Ce	) ates (B13) Odor (C1) oheres (C3) uced Iron (C- uction in 5)	PRESI	Secondary Secondary Wat Sed Drift Dry Dry Thir Cray Aer Sha	Indica er Ma imen t Dep inage Seas n Muc yfish uratio ial Im	arks oosits Pat son V Burr on Vi nage Aqui	(B1) (Riverine) posits (B2) (Riverine) terns (B10) Water Table (C2 urface (C7) ows (C8) sible-on try (C9) tard (D3)	erine) )
Remarks 500 Hydrology Netland Indicate Primary Indicators (A Surface Wate High Water Tri Saturation (A Water Marks Sediment Dep Surface Soil C Inundation Vis Aerial Imager	ors ny one in (A1) able (A2) ) B1) (Nonr osits (B2) pracks (B6 ible on y (B7)	HYDRI Idicator is s iverine) ) (Nonriverin 3)	C 5	t) Salt Cr Biotic C Aquatio Hydrog Oxidize Presen Recent Plowe	UST (B11) Crust (B12) Crust (B12 c Invertebr gen Sulfide ed Rhizosp ince of Redu t Iron Redu d Soils (Ce	) ates (B13) Odor (C1) oheres (C3) uced Iron (C- uction in 5)	PRESI	Secondary Secondary Wat Sed Drift Dry Dry Thir Cray Aer Sha	Indica er Ma imen t Dep inage Seas n Muc yfish uratio ial Im	arks oosits Pat son V Burr on Vi nage Aqui	(B1) (Riverine) posits (B2) (Riv s (B3) (Riverine) terns (B10) Water Table (C2 urface (C7) ows (C8) sible-on ry (C9)	erine) )
Remarks 500 Hydrology Wetland Indicat Primary Indicators (A Surface Wate High Water Ta Saturation (A Water Marks Sediment Dep Surface Soil C Inundation Vis Aerial Imager Water-Stained	ors ny one in (A1) able (A2) ) B1) (Nonr osits (B2) inacks (B2) inacks (B2) inacks (B2) ible on y (B7) Leaves ( ns	HYDRI Idicator is s iverine) ) (Nonriverin 3) (B9)	c sufficien	t) Salt Cr Biotic ( Aquation Hydrog Oxidize Present Plowe Other (	DDICA UST (B11) Crust (B12) Crust (B12)	) ates (B13) Odor (C1) oheres (C3) uced Iron (C- uction in 5) Remarks)	4)	Secondary Secondary Wat Sed Drift Dry Thir Cray Cray Aer Sha FAC	Indica er Ma imen t Dep inage Seas n Muc yfish uratio ial In Ilow J-Net	arks t De posits Pat son V ck Su Burr pn Vi nage Aqui tural	(B1) (Riverine) posits (B2) (Riverine) terns (B10) Water Table (C2 urface (C7) ows (C8) sible on try (C9) tard (D3) Test (D5)	erine) )
Remarks 500 Hydrology Wetland Indicate Primary Indicators (A Surface Wate High Water Ta Saturation (A Water Marks Sediment Dep Surface Soil C Inundation Vis Aerial Imager Water-Stained Field Observation	ors ny one in (A1) able (A2) B1) (Nonr osits (B2) bracks (B2) ible on y (B7) Leaves ( ns Yes _	+YDRI Idicator is s iverine) ) (Nonriverin 3) (B9) No	c sufficien	t) Salt Cr Biotic ( Aquational Hydrog Oxidized Present Plower Other ( Depth (inch	UST (B11) Crust (B12) Crust (B12) Crust (B12) Crust (B12) Crust (B12) Crust (B12) Crust (B12) Crust (B12) Crust (B11) Crust (B11) Crust (B11) Crust (B11) Crust (B12) Crust (B	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C- uction in 5) Remarks)	4)	Secondary Secondary Wat Sed Drift Dry Dry Thir Cray Aer Sha	Indica er Ma imen t Dep inage Seas n Muc yfish uratio ial In Ilow J-Net	arks t De posits Pat son V ck Su Burr pn Vi nage Aqui tural	(B1) (Riverine) posits (B2) (Riverine) terns (B10) Water Table (C2 urface (C7) ows (C8) sible on try (C9) tard (D3) Test (D5)	erine) )
Remarks 500 Hydrology Wetland Indicat Primary Indicators (A Surface Wate High Water Tri Saturation (A Water Marks Sediment Dep Surface Soil ( Inundation Vis Aerial Imager Water-Stained	ors ny one in (A1) able (A2) ) B1) (Nonr osits (B2) ible on y (B7) Leaves ( ns Yes _ Yes _	+ Υ D R I I idicator is s iverine) ) (Nonriverin 3) (B9) No No	c sufficien	t) Salt Cr Biotic ( Aquation Hydrog Oxidize Present Plower Other ( Depth (inch	DDICAT	) ates (B13) Odor (C1) oheres (C3) uced Iron (C- uction in 5) Remarks)	4)	Secondary Secondary Wat Sed Drift Drift Dry Thir Cray Satu Aer Sha FAC	Indica er Ma imen t Dep inage Seas n Muc yfish uratio ial In Ilow J-Net	arks t De posits Pat son V ck Su Burr pn Vi nage Aqui tural	(B1) (Riverine) posits (B2) (Riverine) terns (B10) Water Table (C2 urface (C7) ows (C8) sible on try (C9) tard (D3) Test (D5)	erine) )

Remarks NO WEILTOD HYDROLOGY INDICATORS.

Wetland Determination Data Form - Arid W	/est Reg	ion		Habitat Type <u>GRASSIND</u> Wetland Type <u>EMERL</u> . WETLAND
Project/Site: <u>Sisk Dam Corrective Action Project</u> Applicant/Owner: <u>U.S. Bureau of Reclamation</u>		City/Count	y: <u>Merced</u>	County Sampling Date: 9/1/09
Investigator(s):J. Colescott Landform (hillslope, terrace, etc.) Subregion (LRR)LRR-C		Local rel	ief (concave, Name: <u>Xe</u> e	convex, none) CONCAVE Slope % 0-2 roflurents, EXTEMELY (RAVEU)
Are climatic/hydrologic conditions on the site typical for this ti Are vegetation $\underline{N}_{,}$ , soil $\underline{N}_{,}$ , or hydrology $\underline{N}_{,}$ signific Are vegetation $\underline{N}_{,}$ , soil $\underline{N}_{,}$ , or hydrology $\underline{N}_{,}$ natural	ime of year's cantly distur	? <u>455</u> bed? Are n	(If no, explain ormal circum	n in remarks.) Instances present? <u>MES</u>
Summary of Findings (Attach site map showing Hydrophytic vegetation? <u>M</u> Hydric soil? <u>4</u> Wette	sampling p and hydrolo	oint location	s, transects, Is sampled	important features, etc.) I area a wetland? <u>1</u> ES Other waters? <u>NO</u>
USACE Jurisdiction Adjacent to Waters X Isolate Explain:	ed (with inte	rstate comn	nerce)	Isolated (non jurisdictional)
Evaluation of features designated "Ot         Indicators:       Defined bed and bank Scour_         Feature Designation       Perennial Intermittent Ep         Natural Drainage Artificial Drain	Ordin	ary High W	ater Mark Ma ne on USGS	apped Quad
Remarks ANO THERE " SEEP WI LEAK CALLE WHEN RES. 14	FETUNI S FU	)D <sup>4</sup> 2L.	74.47	MUDRATES FROM DAM
Vegetation Tree Stratum (use scientific names) 1. <u>lapulus</u> fremeni +;; 2. Salix laevlaata		Dominant Species?	Indicator Status FACW FACW	Dominance Test Worksheet Number of dominant species that are OBL, FACW, or FAC: (A) Total number of dominant species
3		Species?	Status	across all strata: (B) Percent of dominant species that _/ 0 D are OBL, FACW, or FAC: (AB)
1 2 3				Prevalence Index Worksheet         Total % Cover of:       Multiply by         OBL Species       x 1 =
4 20%= Total Cover: Herb Stratum (use scientific names) 1. Typha lat; folia 2. Conyza canadensis 3. Grindelia amporum 4. Lep; dorum lat, Colia	15	Species?	Status OBL FAC FACU FACU	FACW Species       x2 =         FAC Species       x3 =         FACU Species       x4 =         UPL Species       x5 =         Column Totals       (A)         Prevalance Index = B/A =
5 6 7 50%= <u>47,5</u> 20%= <u>19</u> Total Cover:	95			Hydrophytic Vegetation Indicators Dominance Text is >50% Prevalence Index is ≤ 3.01 Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet) Norther the Median Mathematical (Exploin)
Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present. Hydrophytic Vegetation? <u>YES</u>

.

# Soils

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Profile Description: (Describe to the depth Matrix	needed to document the indicator or con Redox Features	firm the absence of indicators.
	olor (moist) <u>%</u> Type <sup>1</sup> Loc	c <sup>2</sup> <u>Texture</u> <u>Remarks</u>
		4 GRAUELUS LOAM
		M 11 11
<sup>1</sup> Types: C = Concentration D = Depletion RM = F		re Lining RC = Root Channel M = Matrix
Hydric Soil Indicators: (Applicable to all L	RRs, unless otherwise noted)	Indicators for Problematic Hydric Soils <sup>3</sup>
Histosol (A1)	Sandy Gleyed Matrix (S4)	1 cm Muck (A9) (LRR C)
Histic Epipedon (A2)	Sandy Redox (S5)	2 cm Muck (A10) (LRR B)
Black Histic (A3)	Stripped Matrix (S6)	Reduced Vetric (F18)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Red Parent Materials (TF2)
Stratified Layers (AG) (LRR C)	Loamy Gleyed Matrix (F2)	Vegetated Sand/Gravel Bars
1 cm Muck (A9) (LRR D)	Depleted Matrix (F3)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	<sup>3</sup> Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Redox Depressions (F8)	wetland hydrology must be present.
	Vernal Pools (F9)	
Restrictive Layer (if present): Type:	Depth (Inches)	Hydric Soil? <u>46</u> 5
Remarks HYDRIC SOIL		
Hydrology Wetland Indicators		
Pnmary Indicators (Any one indicator is sufficie	nt)	Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Noniverine)	Ø Oxidized Rhizospheres (C3)	Dry-Season Water Table (C2)
Surface Soil Cracks (B6)	Presence of Reduced Iron (C4)	Thin Muck Surface (C7)
Inundation Visible on	Recent Iron Reduction in	Crayfish Burrows (C8)
Aerial Imagery (B7)	Plowed Soils (C6)	Saturation Visible on
Water-Stained Leaves (B9)	Other (Explain in Remarks)	Aerial Imagery (C9)
	· · ·	Shallow Aquitard (D3)
		FAC-Netural Test (D5)
Field Observations		
Surface Water Present? Yes No	Depth (inches) Wet	larid Hydrology? Yes 🔀 No
Water Table Present? Yes No	Depth (inches)	,
Saturation Present? Yes No X	,	pillary fringe)
Describe Recorded Data (stream gauge, n		
		• •
Remarks WEITHND HYDROLD	DG 4	

North State Resources				Habitat Type MELDOW
Wetland Determination Data Form - Arid W	lest Reg	ion		Habitat Type METDOW Wetland Type Steasowt WL
Project/Site:Sisk Dam Corrective Action Project	•		w Morood	1 1
Applicant/Owner:U.S. Bureau of Reclamation			y. <u>IMEICEC</u>	State: Sampling Point:
Investigator(s):J. Colescott				
Landform (billslope terrace etc.) FLAT		Local rel	ief (concave	convex hone Slope % & -2/1
Subregion (I BR) I BR-C	So	_ Local lei il Man Unit I	Vame X-P	convex, none slope % <u>a -2/1</u> of luve wts, Extremely grouvelly
Are climatic/hydrologic conditions on the site typical for this t	ime of year	MES	lifno evolai	n in remarks )
Are vegetation $\beta$ soil $\beta$ or hydrology $\beta$ signifi	cantly distur	thed? Are n	ormal circun	nstances present? YES
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ signified are vegetation $\underline{YES}$ soil $\underline{N}$ , or hydrology $\underline{N}$ natural	ally problem:	atic? (If ne	eded explai	n any answers in Remarks.)
Summary of Findings (Attach site map showing	sampling p	oint location	is, transects,	important features, etc.)
Hydrophytic vegetation? <u>1</u> <del>E</del> Hydric soil? <u>4</u> <u>E</u> Wet	and hydrolo	gy? The	Is sample	
Adjacent to Waters X Tributary to Waters X Isolate	ed (with inte	rstate comn	nerce)	_ Isolated (non jurisdictional)
Explain:	harWol	tono of t	ha Unite	d States"
Evaluation of features designated "Ot Indicators: Defined bear and bank Scour_				
Feature Designation: Perenpia Intermittent	phemeral	Blue-lin	ne on USGS	Quad
Natoral Drainage Artificial Drain			-	
Remarks HIGH PERCENTAGE				
COLONIZATION BY ANNUAL	opan	D 51	541 54,	. VEG PARAMETER NOT
COLONIZATION BY ANNUAL MET, HOWEVER SOILS AND	14 DRO	logy	SUPPO	RT WERTAND DETERMINATION.
Vegetation	Absolute	Dominant	Indicator	Dominance Test Worksheet
Tree Stratum (use scientific names)	% Cover			Number of dominant species that are OBL, FACW, or FAC:(A)
1				that are OBL, FACW, or FAC: (A)
2			<del></del>	Total number of dominant species 2 (P)
3	<u></u>			across all strata: (B)
50%= 20%= Total Cover:				Percent of dominant species that
Sapling/Shrub Stratum (use scientific names)	% Cover	Species?		are OBL, FACW, or FAC: (AB)
1. Atriplex lentiformis			Fre	Prevalence Index Worksheet
2				Total % Cover of: Multiply by
3				OBL Species         D         x1=
4	2			FACW Species $O$ x2= $(100)$
Herb Stratum (use scientific names),	% Cover	Species?	Status	FAC Species $\frac{50}{20} \times 3 = \frac{150}{20}$
1. Hordeum leporinum		YES	FAC	FACU Species $5 \times 4 = 20$
2. Grindelia camporem				UPL Species $14 \times 5 = 70$
3. Bromus hordedoous	5	2	FACU	Column Totals $(-29)$ (A) $(-24)$ (B)
4. Avena fatua		N	UPL	Prevalance Index = $B/A = \frac{240/69}{23.4}$
5				Hydrophytic Vegetation Indicators
6				Dominance Text is >50%
7	· h1			Prevalence Index is ≤ 3.0 <sup>1</sup> Morphological Adaptations <sup>1</sup> (provide supporting
$50\% = 33\frac{1}{2}$ 20% = 13,4 Total Cover:		7220) 64 Mar		data in Remarks or on a separate sheet)
Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must
1				be present.
2				Hydrophytic Vegetation? <u>YES</u>
50%= 20%= Total Cover: % Bare Ground in Herb Stratum 33 % Cover of Biol		1.0		nyurophytic regetation
% Date Ground in herd Stratum % Cover of Bio	ac orust_(			I

# Soils

ches) Color (		%	Redox Fea		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
-8" 101R	1/4	90	10 YR 3/1	5	$\square$	M	GRUELLY	Lohm
			7,54R5/8	5	0	M		ts
pes: C = Concentrati dric Soil Indica Histosol (A1) Histic Epipedo	tors <u>:</u> (		to all LRRs, unle		Aatrix (S4)	= Pore Lin	Indicators for Prob	annel <u>M = Matrix</u> lematic Hydric Soils <sup>3</sup> ck (A9) (LRR C) ck (A10) (LRR B)
Black Histic (A Hydrogen Sulf Stratified Laye 1 cm Muck (A Depleted Belo	3) ide (A4) rs (AG) ( 9) (LRR I	) )	St Lo De	ripped Matrix amy Mucky M amy Gleyed M pleted Matrix dox Dark Sur	(S6) 1ineral (F1) Matrix (F2) (F3)		Reduced Red Pare Vegetate Other (E:	Vetric (F18) ent Materials (TF2) d Sand/Gravel Bars xplain in Remarks)
Thick Dark Su	•	'	<u>    X</u> Re	pleted Dark S dox Depression rnal Pools (FS	ons (F8)			drophytic vegetation and gy must be present.
emarks STRO		Туре: НЧДИ	210 501	Depth (In	nches) D1 A708		ic Soil? YES	
estrictive Layer (if p emarks STR 0 lydrology letland Indicato imary Indicators (Ar	NG	4400						ators (2 or more required
emarks STRO	NG nrs ny one in (A1) ble (A2) A1) (Nonr bits (B2) acks (B6 ble on (B7)	dicator is verine) (Nonriveri	sufficient) Sa A Bic Aq Hy ne)Ox Pre Re Re		2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C uction in 6)		Secondary Indica Water Ma Sedimen Drift Dep Drainage Dry-Seas Thin Muc Crayfish Saturatio Aerial Im Shallow /	ators (2 or more required arks (B1) (Riverine) t Deposits (B2) (Riverine) osits (B3) (Riverine) Patterns (B10) con Water Table (C2) k Surface (C7) Burrows (C8) n Visible on lagery (C9) Aquitard (D3) ural Test (D5)

North State Resources				Habitat Type	MEADOW
Wetland Determination Data Form - Arid V				Wetland Typ	e _UPLEND
Project/Site:Sisk Dam Corrective Action Project		City/Count	v: Merceo	County	Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation		ongroound		State: (	CA_Sampling Point:
Investigator(s): J. Colescott					
Landform (hillslope, terrace, etc.) FLAT			ief (concave	, convex, none) NON	ESlope %
Subregion (LRR)	So	I Man Unit M	Jame Xe	roflovents.	Extermency GRADI
Are climatic/hydrologic conditions on the site typical for this	time of year	NES	lf no explai	in in remarks.	
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ signif					5
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ nature	ally problem	atic? (If not	adad avalai	in any answers in Remark	ks J
Summary of Findings (Attach site map showing					
Hydrophytic vegetation? NO Hydric soil? NO Wel	iland hydrolo	gy? NO	Is sample	d area a wetland?	Other waters? NO
USACE Jurisdiction					
Adjacent to Waters Tributary to Waters Isolat	ed (with inte	rstate comm	ierce)	_ Isolated (non jurisdiction	onal)
Explain:					
Evaluation of features designated "Ot					
ndicators: Defined bed and bank Scour	Ordin	ary High Wa	ater Mark M	apped	
eature Designation: Perennial Intermittent E Natural Drainage Artificial Drai	phemeral	Navigable V	le on USGS Nater	Quad	
Remarks UPLAND PAIR TO	DP 1	0.			
· · · · · · · · · · · · · · · · · · ·					
/egetation	Absolute	Dominant	Indicator	Dominance Test Wo	orksheet
	Absolute % Cover	Dominant Species?		Number of dominant	species
ree Stratum (use scientific names)	% Cover	Species?	Status		species
ree Stratum (use scientific names)	% Cover	Species?	Status	Number of dominant	species or FAC: (A) inant species
ree Stratum (use scientific names)	% Cover	Species?	Status	Number of dominant that are OBL, FACW,	species or FAC: (A)
ree Stratum (use scientific names)	<u>% Cover</u>	Species?	Status	Number of dominant that are OBL, FACW, Total number of dom across all strata:	species or FAC: (A) inant species (B)
Tree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u> 	<u>Status</u>	Number of dominant that are OBL, FACW, Total number of dom	species or FAC: (A) inant species (B) species that
ree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant that are OBL, FACW, Total number of dom across all strata: Percent of dominant are OBL, FACW, or F	species or FAC: (A) inant species <u></u> (B) species that <u>O</u> (AB)
ree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant that are OBL, FACW, Total number of dom across all strata: Percent of dominant are OBL, FACW, or F Prevalence Index W	species or FAC: (A) inant species <u>3</u> (B) species that <u>0</u> (AB) orksheet
ree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant that are OBL, FACW, Total number of dom across all strata: Percent of dominant are OBL, FACW, or F Prevalence Index W Total % Cover of:	species or FAC: (A) inant species (B) species that (AB) cAC: (AB) orksheet Multiply by
ree Stratum (use scientific names) 50%= 20%= Total Cover. apling/Shrub Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant that are OBL, FACW, Total number of dom across all strata: Percent of dominant are OBL, FACW, or F Prevalence Index W Total % Cover of: OBL Species	species or FAC: (A) inant species <u></u> (B) species that <u>O</u> (AB) orksheet X1 =
ree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant that are OBL, FACW, Total number of dom across all strata: Percent of dominant are OBL, FACW, or F Prevalence Index W Total % Cover of: OBL Species FACW Species	species or FAC: (A) inant species $\underline{\mathcal{S}}_{}_{}(B)$ species that $\underline{\mathcal{O}}_{}_{}(AB)$ orksheet x1 = x2 =
ree Stratum (use scientific names) 50%= Total Cover. apling/Shrub Stratum (use scientific names) 50%= 20%= Total Cover: 50%= 20%= Total Cover:	<u>% Cover</u>	Species? Species?	Status Status	Number of dominant that are OBL, FACW,         Total number of dominant across all strata:         Percent of dominant are OBL, FACW, or F         Prevalence Index W         Total % Cover of:         OBL Species         FACW Species         FAC Species	species or FAC:(A) inant species $\underline{\mathcal{S}}_{(B)}$ species that $\underline{\mathcal{O}}_{(AB)}$ orksheet $\underline{Multiply by}_{(AB)}$ x 1 =
ree Stratum (use scientific names)  50%= 20%= Total Cover. apling/Shrub Stratum (use scientific names)  50%= 20%= Total Cover: erb Stratum (use scientific names)	<u>% Cover</u>	Species?	<u>Status</u>	Number of dominant that are OBL, FACW, Total number of dom across all strata: Percent of dominant are OBL, FACW, or F Prevalence Index W Total % Cover of: OBL Species FACW Species FAC Species FACU Species	species or FAC:(A) inant species $\underline{\mathcal{S}}_{(B)}$ species that $\underline{\mathcal{O}}_{(AB)}$ orksheet X1 = X2 = X3 = X4 =
ree Stratum (use scientific names) 50%= 20%= Total Cover. apling/Shrub Stratum (use scientific names) 50%= 20%= Total Cover: erb Stratum (use scientific names) Browds Nordzacous	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u>	<u>Species?</u> <u>Species?</u> <u>Species?</u> <u>Species?</u>	Status Status Status Status	Number of dominant that are OBL, FACW,         Total number of dominant across all strata:         Percent of dominant are OBL, FACW, or F         Prevalence Index W         Total % Cover of:         OBL Species         FACW Species         FACU Species         FACU Species         UPL Species	species or FAC: $(A)$ inant species $\underline{S}$ (B) species that $\underline{O}$ (AB) orksheet x1 = x2 = x3 = x4 = x5 =
ree Stratum (use scientific names) 50%= 20%= Total Cover. apling/Shrub Stratum (use scientific names) 50%= 20%= Total Cover: erb Stratum (use scientific names) Total Cover: erb Stratum (use scientific names) Brows Nordsa cous B. dlandrus	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>% Cover</u>	<u>Species?</u> <u>Species?</u> <u>Species?</u> <u>Species?</u>	Status Status Status Status	Number of dominant that are OBL, FACW, Total number of dominant across all strata: Percent of dominant are OBL, FACW, or F Prevalence Index W Total % Cover of: OBL Species FACW Species FACW Species FACU Species UPL Species	species or FAC:(A) inant species $\underline{\mathcal{S}}_{(B)}$ species that $\underline{\mathcal{O}}_{(AB)}$ orksheet X1 = X2 = X3 = X4 =
scientific names)         50%=       20%=         50%=       Total Cover.         apling/Shrub Stratum (use scientific names)	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>20</u>	<u>Species?</u> <u>Species?</u> <u>Species?</u> <u>Species?</u>	Status Status Status FrCy VPL	Number of dominant that are OBL, FACW,         Total number of dominant across all strata:         Percent of dominant are OBL, FACW, or F         Prevalence Index W         Total % Cover of:         OBL Species         FACW Species         FACU Species         FACU Species         UPL Species	species or FAC:(A) inant species $\underline{\mathcal{S}}_{(B)}$ species that $\underline{\mathcal{O}}_{(AB)}$ orksheet $\qquad \qquad $
ree Stratum (use scientific names) 50%= 20%= Total Cover. apling/Shrub Stratum (use scientific names) 50%= 20%= Total Cover: erb Stratum (use scientific names) Brows Nordza cous Brows Nordza cous Brows Nordza cous Crindelia Camporum Croton set, agt vs	% Cover % Cover % Cover √0 √5 ~5	<u>Species?</u> <u>Species?</u> <u>Species?</u> <u>Species?</u>	Status Status Status Status	Number of dominant that are OBL, FACW, Total number of dominant across all strata: Percent of dominant are OBL, FACW, or F Prevalence Index W Total % Cover of: OBL Species FACW Species FACW Species FACU Species Column Totals Prevalance Index = E	species or FAC:(A) inant species $\underline{\mathcal{S}}_{(B)}$ species that $\underline{\mathcal{O}}_{(AB)}$ orksheet $\qquad \qquad $
ree Stratum (use scientific names) 50%= 20%= Total Cover. apling/Shrub Stratum (use scientific names) 50%= 20%= Total Cover: erb Stratum (use scientific names) 50%= 20%= Total Cover: erb Stratum (use scientific names) Brows Mordza cous Brows Mordza cous Brows Mordza cous Brows Mordza cous Crindelia Cumporum Croton Set, act vs	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>60</u> <u>20</u> .5	Species?	Status Status Status FrCy VPL VPL	Number of dominant that are OBL, FACW, Total number of dom across all strata: Percent of dominant are OBL, FACW, or F Prevalence Index W Total % Cover of: OBL Species FACW Species FAC Species FACU Species Column Totals Prevalance Index = E	species or FAC:(A) inant species $\underline{\mathcal{S}}_{(B)}$ species that $\underline{\mathcal{O}}_{(AB)}$ orksheet $\underline{\qquad x1= }$ $x2= }$ $x3= }$ x4= x5= (A)  (B) WA = tion Indicators
ree Stratum (use scientific names) 50%= 20%= Total Cover. apling/Shrub Stratum (use scientific names) 50%= 20%= Total Cover: erb Stratum (use scientific names) 50%= 20%= Total Cover: erb Stratum (use scientific names) Brows Nordza covs B. diandrus Crindelia Cumporum Croton Set, agr vs	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>60</u> <u>20</u> .5	Species?	Status Status Status FrCy VPL VPL	Number of dominant that are OBL, FACW, Total number of dom across all strata: Percent of dominant are OBL, FACW, or F Prevalence Index W Total % Cover of: OBL Species FACW Species FAC Species FAC Species Column Totals Prevalance Index = E Hydrophytic Vegeta Dominance Te	species or FAC:
ree Stratum (use scientific names) 50%= 20%= Total Cover. apling/Shrub Stratum (use scientific names) 50%= 20%= Total Cover: erb Stratum (use scientific names) Total Cover: erb Stratum (use s	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>20</u> <u>5</u>	Species?	Status Status Status FrCy VPL VPL	Number of dominant that are OBL, FACW, Total number of dom across all strata: Percent of dominant are OBL, FACW, or F Prevalence Index W Total % Cover of: OBL Species FACW Species FAC Species FAC Species Column Totals Prevalance Index = E Hydrophytic Vegeta Dominance Te Prevalence Index	species or FAC:(A) inant species $\underline{S}_{(B)}$ species that $\underline{O}_{(AB)}$ orksheet $\underline{Multiply by}_{(AB)}$ x 1 =(AB) x 2 =(AB) x 4 =(BB) x 4 =(BB) x 4 =(AB) x 4 =(BB) x 4 =
ree Stratum (use scientific names)  50%=	% Cover % Cover % Cover (00 25 .5 	Species?	Status Status FACU VPL VPL	Number of dominant that are OBL, FACW, Total number of dominant across all strata: Percent of dominant are OBL, FACW, or F Prevalence Index W Total % Cover of: OBL Species FACW Species FACW Species FACU Species UPL Species Column Totals Prevalance Index = E Hydrophytic Vegeta Dominance Te Prevalence Index	species or FAC:
ree Stratum (use scientific names) 50%= 20%= Total Cover. apling/Shrub Stratum (use scientific names) 50%= 20%= Total Cover: erb Stratum (use scientific names) Brows Mordza cous B. dlandrus Grindelia Camporum Croton Set, aget us 50%= 20%= Total Cover: 50%= 20%= Total Cover:	% Cover % Cover % Cover (00 25 .5 	Species?	Status Status FACU VPL VPL	Number of dominant that are OBL, FACW, Total number of dom across all strata: Percent of dominant are OBL, FACW, or F Prevalence Index W Total % Cover of: OBL Species FACW Species FACW Species FACU Species Column Totals Prevalance Index = E Hydrophytic Vegeta Dominance Te Prevalence Index Prevalence Index Prevalence Index Prevalence Index Prevalence Index	species or FAC:
apling/Shrub Stratum (use scientific names) 50%= 20%= Total Cover: erb Stratum (use scientific names) Brows Nordza cous B. diandrus Grindelia Camporum Croton set, agrus	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>20</u> <u>5</u> <u>100</u> % Cover	Species?	Status Status FACU VPL VPL	Number of dominant that are OBL, FACW,         Total number of dominant across all strata:         Percent of dominant are OBL, FACW, or F         Prevalence Index W Total % Cover of:         OBL Species         FACW Species         FACU Species         FACU Species         OPL Species         Prevalance Index = E         Hydrophytic Vegeta         Morphological         data in Remar         Problematic H         'Indicators of hydric st	species or FAC:
iree Stratum (use scientific names)         50%=         50%=         20%=         Total Cover:         apling/Shrub Stratum (use scientific names)         50%=         20%=	% Cover % Cover % Cover 20 35 100 % Cover	Species?	Status Status FACU VPL VPL	Number of dominant that are OBL, FACW, Total number of dom across all strata: Percent of dominant are OBL, FACW, or F Prevalence Index W Total % Cover of: OBL Species FACW Species FACW Species FACU Species Column Totals Prevalance Index = E Hydrophytic Vegeta Dominance Te Prevalence Index Prevalence Index Prevalence Index Prevalence Index Prevalence Index	species or FAC:

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# Soils

(inches) Color (m	rix		Redox Features Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
)-6 1042 3/							arturny	Lotm
Types: C = Concentration  Iydric Soil Indicat  Histosol (A1) Histic Epipedon Black Histic (A3 Hydrogen Sulfic Stratified Layers 1 cm Muck (A9) Depleted Below Thick Dark Surf Sandy Mucky M	ors <u>: (Applic</u> (A2) (A2) (A2) (A2) (A2) (A3) (LRR D) (LRR D) (LRR D) (Dark Surfac (A12)	cable to all	LRRs, unless otf Sandy C Sandy F Stripped Loamy C Loamy C Redox D	nerwise n Gleyed M Redox (S d Matrix ( Mucky M Gleyed M d Matrix ( Dark Surf d Dark S Depressio	atrix (S4) 5) S6) ineral (F1) latrix (F2) (F3) ace (F6) urface (F7) ons (F8)		ndicators for Proble 1 cm Muc 2 cm Muc Reduced Red Pare Vegetated Other (Ex <sup>3</sup> Indicators of hyd	ematic Hydric Soils <sup>3</sup>
Remarks UPL/		40129			iches) _~		soil? <u>ND</u>	
Hydrology Wetland Indicator	fwD fwD	40129	; 					tors (2 or more required
	fr>D s <u>y one indicato</u> A1) le (A2) 1) (Nonriverine sits (B2) (Non- cks (B6) le on B7)	<b>GOILS</b>	ent) Salt Cru Biotic Cr Aquatic Hydroge Oxidized Presence Recent I Plowed	st (B11) ust (B12) Invertebr n Sulfide Rhizosp e of Redu soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C action in		Secondary Indica Water Ma Sediment Drift Depo Drainage Dry-Sease Thin Much Crayfish E Saturation Aerial Ima Shallow A	rks (B1) (Riverine) Deposits (B2) (Riverine osits (B3) (Riverine) Patterns (B10) on Water Table (C2) < Surface (C7) Burrows (C8)

North State Resources				Habitat Type ROADSIDE
Wetland Determination Data Form - Arid W	lest Reg	ion		Wetland Type EMERGENT WL
Project/Site: <u>Sisk Dam Corrective Action Project</u> Applicant/Owner: <u>U.S. Bureau of Reclamation</u>		City/Count	y: <u>Mercec</u>	I County       Sampling Date: 9/1/69         State:       CA_ Sampling Point: 12
Investigator(s):J. Colescott				_
Landform (hillslope, terrace, etc.) HILSIDE				
Subregion (LRR)LRR-C				
Are climatic/hydrologic conditions on the site typical for this t				
Are vegetation $\underline{\mathcal{N}}$ , soil $\underline{\mathcal{N}}$ , or hydrology $\underline{\mathcal{N}}$ signifiant				
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natural	lly problem	atic? (If nee	eded, explai	n any answers in Remarks.)
Summary of Findings (Attach site map showing Hydrophytic vegetation? YES Hydric soil? YES Wet	sampling p and hydrolo	oint location	s, transects, Is sample	important features, etc.) d area a wetland? $\underline{4FS}$ Other waters? $\underline{NO}$
USACE Jurisdiction Adjacent to Waters X Tributary to Waters Isolate Explain:	ed (with inte	rstate comm	erce)	_ Isolated (non jurisdictional)
Evaluation of features designated "Ot           Indicators:         Defined bed and bank Scour           Feature Designation:         Perennial Intermittent Ep           Natural Drainage Artificial Drain	Ordin phemeral	ary High Wa	ater Mark Mark Mark Mark Mark	apped Quad
Remarks SMAL "SEEP" WER	420	on t	m	SLOPE,
Vegetation Tree Stratum (use scientific names) 1.	second second second second second	Dominant Species?		Dominance Test Worksheet         Number of dominant species         that are OBL, FACW, or FAC:
2				Total number of dominant species 3 (B)
50%= 20%= Total Cover: Sapling/Shrub Stratum (use scientific names) 1. $\frac{5a}{14}$ $exique$	% Cover	Species?		Percent of dominant species that are OBL, FACW, or FAC: (AB)
2				Prevalence Index Worksheet       Total % Cover of:     Multiply by       OBL Species     x1 =
4				
50%= <u>25</u> 20%= <u>1D</u> Total Cover:	50			
Herb Stratum (use scientific names)		Species?		FAC Species x3= FACU Species x4=
. Jupha latifolia	50	4	OBC	UPL Species x5=
Lepidium latifolium	20	¥	FACW	
3				
l	·			Prevalance Index = B/A =
j				Hydrophytic Vegetation Indicators
· · · · · · · · · · · · · · · · · · ·				Prevalence Index is ≤ 3.01 Morphological Adaptations <sup>1</sup> (provide supporting
50%= <u>35</u> 20%= <u>14</u> Total Cover:	70			data in Remarks or on a separate sheet)
	1	Species?		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must
•				be present.
				Hydrophytic Vegetation? 4ES
50%= 20%= Total Cover:			-	Hydrophytic vegetadon ( 1.2.2
6 Bare Ground in Herb Stratum % Cover of Biot	ic Crust			

#### Soils

k.

	Redox Features Color (moist)	<u>% Type1</u>	Loc <sup>2</sup>	Texture	<u>Remarks</u>
-8" 104R 2/2 90 10"	1R <sup>2</sup> /1 1	<u>0</u> <u>D</u>	<u> </u>	GRAVEUY	LOAM
ypes: C = Concentration D = Depletion RM = ydric Soil Indicators: (Applicable to all Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (AG) (LRR C) 1 cm Muck (A9) (LRR D) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1)	Sandy Gle Sandy Re Stripped M Loamy Mu Loamy Gle Depleted I X Redox Da Depleted I	eyed Matrix (S4) dox (S5) Matrix (S6) ucky Mineral (F1) eyed Matrix (F2) Matrix (F3)	<u>I</u>	ndicators for Problem1 cm Muck2 cm MuckReduced VRed ParenVegetatedOther (Exp	natic Hydric Soils <sup>3</sup> (A9) (LRR C) (A10) (LRR B) /etric (F18) t Materials (TF2) Sand/Gravel Bars lain in Remarks)
	Vernal Po				
Remarks 144DRIC 50109 Hydrology Vetland Indicators	De	epth (Inches)	Hydri	Secondary Indicate	ors (2 or more required
Restrictive Layer (if present): Type:         Remarks       144DR1C         Hydrology         Vetland Indicators         Irimary Indicators (Any one indicator is sufficient of the second of the	ent)  Salt Crust Biotic Crust Aquatic Inv	(B11) (B11) st (B12) vertebrates (B13) Sulfide Odor (C1) Rhizospheres (C3) of Reduced Iron ( n Reduction in		Secondary Indicato	n Water Table (C2) Surface (C7) urrows (C8) Visible-on gery (C9) juitard (D3)

Remarks WETLEND HYDROLOGY, DEAINS TO MAIN "SEEP" DITCH.

Wetland Determination Data Form - Arid	West Reg	ion	Habitat Type PAR SIDE Wetland Type UPLAND
		City/County:Merced	County       Sampling Date: 9///09         State: CA       Sampling Point: 13
Investigator(s): <u>J. Colescott</u> Landform (hillslope, terrace, etc.) <u>HIWSIDE</u> Subregion (LRR) <u>LRR-C</u> Are climatic/hydrologic conditions on the site typical for thi Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u> sign Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u> natu	s time of year	il Map Unit Name: App P (If no, explain bed? Are normal circum	stances present?
Summary of Findings (Attach site map showi Hydrophytic vegetation? NO Hydric soil? NO W	ng sampling p	oint locations, transects,	important features, etc.) area a wetland? NO Other waters? NO
USACE Jurisdiction Adjacent to Waters Isol Explain:	lated (with inte	rstate commerce)	Isolated (non jurisdictional)
Evaluation of features designated "C Indicators: Defined bed and bank <u>Scou</u> Feature Designation: Perennial <u>Intermittent</u> Natural Drainage <u>Artificial Dr</u>	r Ordin Ephemeral	ary High Water Mark Ma Blue-line on USGS	pped Quad
Remarks UPLAND PAIR			
Vegetation Tree Stratum (use scientific names)	Absolute % Cover	Dominant Indicator Species? Status	Dominance Test Worksheet Number of dominant species that are OBL, FACW, or FAC:(A)
2			Total number of dominant species 3(B)
50%= 20%= Total Cove Sapling/Shrub Stratum (use scientific riames)		Species? Status	Percent of dominant species that (AB) are OBL, FACW, or FAC: (AB)
2.			Prevalence Index Worksheet Total % Cover of: Multiply by

Tree Stratum (use scientific names)	% Cover	Species?	Status	that are OBL, FACW, or FAC:(A)
1				that are OBL, FACW, or FAC: (A)
2				Total number of dominant species(B)
50%= 20%= Total Cover Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	Percent of dominant species that (AB)
1				Prevalence Index Worksheet         Total % Cover of:       Multiply by         OBL Species       x1 =
4				FACW Species x2=
50%= 20%= Total Cover:				FAC Species x3 =
Herb Stratum (use scientific names)	% Cover	Species?	Status	FACU Species x4 =
1. 5; Jubon Marianum 2. Brassica Megra	40	- v	UPL	UPL Species x5 =
3. BROMUS madritensis	20	4	UPL	Column fotals (A) (B)
4				Prevalance Index = B/A =
5				Hydrophytic Vegetation Indicators
6				Dominance Text is $>50\%$ Prevalence Index is $\le 3.0^{1}$
7 50%= Total Cover:	100			Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet)
Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.
2		<u> </u>		Hydrophytic Vegetation? NO
50%= 20%= Total Cover:		1000-021		Inyurophytic vegetation
% Bare Ground in Herb Stratum 5% Cover of Bio	tic Crust			

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Sampling Point 13

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Soils

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Depth <u>Matrix</u>	Redox Feature Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	14R 4/4	25	RM	M	LOAM	
				<b>I</b>		
pes: C = Concentration D = Depletion RM =	Reduced Matrix	2	Location: PL	= Pore Lin	ing RC = Root C	hannel M = Matrix
vdric Soil Indicators: (Applicable to al	LRRs, unless o	therwise r	noted)		Indicators for Pro	blematic Hydric Soils <sup>3</sup>
Histosol (A1)	Sandy	Gleyed M	latrix (S4)		1 cm M	luck (A9) (LRR C)
Histic Epipedon (A2)	Sandy	Redox (S	5)		2 cm N	luck (A10) (LRR B)
Black Histic (A3)	Strippe	ed Matrix (	(Ś6)	·	Reduc	ed Vetric (F18)
Hydrogen Sulfide (A4)	Loamy	Mucky M	lineral (F1)		Red Pa	arent Materials (TF2)
Stratified Layers (AG) (LRR C)	Loamy	Gleyed N	Aatrix (F2)		Vegeta	ted Sand/Gravel Bars
1 cm Muck (A9) (LRR D)	Deplet	ed Matrix	(F3)		Other	Explain in Remarks)
Depleted Below Dark Surface (A11)	Redox	Dark Surf	face (F6)			
Thick Dark Surface (A12)	Deplet	ed Dark S	ourface (F7)			hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Redox	Depressio	ons (F8)		wetland hydro	logy must be present.
	Vernal	Pools (F9	<del>)</del> )			
astrictive I over (if present): Type:		Donth //r			in Calla kID	
Remarks COLDES NOT 3 REDOX FEADERS	JARK ENG		nches)	— Hydr F - Ce	ic Soil? <u>NO</u>	INSUFFICIEN
Remarks COLDES NOT S REDOX FEADERS Hydrology Netland Indicators					· 100	
					· 100	1NSUFFICIEN cators (2 or more required)
Remarks COLDES NOT S REDOX FEADERS Hydrology Vetland Indicators	ient)				Secondary Ind	
Remarks COLDES NOT S REDOX FEADERS Hydrology Vetland Indicators rimary Indicators (Any one indicator is sufficient	ient)		₽ d 42.		Secondary Ind	cators (2 or more required Marks (B1) (Riverine) ent Deposits (B2) (Riverine
Remarks COLDES NOT S REDOX FEADERS Hydrology Vetland Indicators rimary Indicators (Any one indicator is suffic Surface Water (A1)	• ient) Salt Cru Biotic C	ust (B11)	₽ d 42.		Secondary Ind	cators (2 or more required Marks (B1) (Riverine)
Remarks COLDES NOT S REDOX FEADERS Hydrology Vetland Indicators mimary Indicators (Any one indicator is suffice Surface Water (A1) High Water Table (A2)	• ient) Salt Cru Biotic C	ust (B11) Crust (B12 cinvertebr	بی ہو۔ ا) rates (B13)		Secondary Ind	cators (2 or more required Marks (B1) (Riverine) ent Deposits (B2) (Riverine eposits (B3) (Riverine) ge Patterns (B10)
Remarks COLDES NOT S REDOX FEADERS Hydrology Vetland Indicators rimary Indicators (Any one indicator is suffice Surface Water (A1) High Water Table (A2) Saturation (A3)	ient) Salt Cro Biotic C	ust (B11) Crust (B12 Invertebr	2) rates (B13) e Odor (C1)		Secondary Ind	cators (2 or more required Marks (B1) (Riverine) ent Deposits (B2) (Riverine eposits (B3) (Riverine)
Remarks COLDES NOT S REDOX FEADEES Hydrology Vetland Indicators mimary Indicators (Any one indicator is suffic Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine)	ient) Salt Cru Biotic C Aquatic Hydrog Oxidize	ust (B11) Crust (B12 Invertebr en Sulfide ed Rhizosp	2) rates (B13) e Odor (C1)	(F-Ce	Secondary Ind	cators (2 or more required Marks (B1) (Riverine) ent Deposits (B2) (Riverine eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7)
Remarks       COLDES       NOT       S         REDOX       FEMDEES         Hydrology         Vetland Indicators         Immary Indicators (Any one indicator is suffice)         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonriverine)         Sediment Deposits (B2) (Nonriverine)         X       Surface Soil Cracks (B6)         Inundation Visible on		ust (B11) Crust (B12) Invertebr en Sulfide ed Rhizosp ce of Red Iron Redu	e Odor (C1) pheres (C3) uced Iron (C uction in	(F-Ce	Secondary Ind	cators (2 or more required Marks (B1) (Riverine) ent Deposits (B2) (Riverine eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2)
Remarks COLDES NOT S REDOX FEADERS Hydrology Vetland Indicators Primary Indicators (Any one indicator is suffice Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)		ust (B11) Crust (B12) Invertebr en Sulfide d Rhizosp ce of Red Iron Redu	e) P) P) P) P) P) P) P) P) P) P) P) P) P)	(F-Ce	Secondary Ind	cators (2 or more required Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) ion Visible on
Remarks       COLDES       NOT       S         REDOX       FEADERS         Hydrology         Vetland Indicators         Primary Indicators (Any one indicator is suffice		ust (B11) Crust (B12) Invertebr en Sulfide d Rhizosp ce of Red Iron Redu	e Odor (C1) pheres (C3) uced Iron (C uction in	(F-Ce	Secondary Ind Secondary Ind Water Sedime Drift De Draina Dry-Se Thin M Crayfis Satura Aerial	cators (2 or more required Marks (B1) (Riverine) ent Deposits (B2) (Riverine eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) ion Visible on Imagery (C9)
Remarks COLDES NOT S REDOX FEADERS Hydrology Vetland Indicators trimary Indicators (Any one indicator is suffice Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)		ust (B11) Crust (B12) Invertebr en Sulfide d Rhizosp ce of Red Iron Redu	e) P) P) P) P) P) P) P) P) P) P) P) P) P)	(F-Ce	Secondary Ind Secondary Ind Water Sedime Drift De Draina Dry-Se Thin M Crayfis Aerial Shallow	cators (2 or more required Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) ion Visible on Imagery (C9) w Aquitard (D3)
Remarks       COLDES       NOT       S         REDOX       FEMDEES         Hydrology         Vetland Indicators         trimary Indicators (Any one indicator is suffice		ust (B11) Crust (B12) Invertebr en Sulfide d Rhizosp ce of Red Iron Redu	e) P) P) P) P) P) P) P) P) P) P) P) P) P)	(F-Ce	Secondary Ind Secondary Ind Water Sedime Drift De Draina Dry-Se Thin M Crayfis Aerial Shallow	cators (2 or more required Marks (B1) (Riverine) ent Deposits (B2) (Riverine eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) ion Visible on Imagery (C9)
Remarks       COLDES       NOT       S         REDOX       FEADERS         Hydrology         Vetland Indicators         Primary Indicators (Any one indicator is suffice	ient) Salt Cru Biotic C Aquatic Hydrog Oxidize Presen Recent Plowed Other (l	ust (B11) Crust (B12) Invertebr en Sulfide d Rhizosp ce of Red Iron Redu Soils (Ce Explain in	e) P) P) P) P) P) P) P) P) P) P) P) P) P)	(F - Ce 	Secondary Ind Secondary Ind Water Sedime Drift De Drift De Dry-Se Thin M Crayfis Satural Aerial Shallov FAC-N	cators (2 or more required Marks (B1) (Riverine) ent Deposits (B2) (Riverine eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) ion Visible on Imagery (C9) v Aquitard (D3) etural Test (D5)
Remarks       COLDES       NOT       S         REDOX       FEADERS         Hydrology         Vetland Indicators         Primary Indicators (Any one indicator is suffice	ient)  Salt Cru Biotic C Aquatic Aquatic Hydrog Oxidize Presen Recent Plowed Other (l	ust (B11) Crust (B12) Invertebr en Sulfide ed Rhizosp ce of Red Iron Redu I Soils (Cf Explain in	e) P) P) P) P) P) P) P) P) P) P) P) P) P)	(F - Ce 	Secondary Ind Secondary Ind Water Sedime Drift De Draina Dry-Se Thin M Crayfis Aerial Shallow	cators (2 or more required Marks (B1) (Riverine) ent Deposits (B2) (Riverine eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) ion Visible on Imagery (C9) v Aquitard (D3) etural Test (D5)
Remarks       COLDES       NOT       S         REDOX       FEMDERS         Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is suffice	ient) Salt Cru Biotic C Aquatic Hydrog Oxidize Presen Recent Plowed Other (l	ust (B11) Crust (B12) crust (B12 c Invertebr en Sulfide d Rhizosp ce of Red Iron Redu I Soils (Cf Explain in	e Odor (C1) pheres (C3) uced Iron (C uction in 5) Remarks)	(F - Ce 	Secondary Ind Secondary Ind Water Sedime Drift De Drift De Draina Dry-Se Thin M Crayfis Aerial Shallov FAC-N Hydrology? Yes	cators (2 or more required Marks (B1) (Riverine) ent Deposits (B2) (Riverine) posits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) ion-Visible-on Imagery (C9) v Aquitard (D3) etural Test (D5)

Remarks (MDROLOGY MET.

North State Resources			1	Habitat Type DAM SIDE
Wetland Determination Data Form - Arid W	est Reg	ion		Wetland Type FERSH FURELENT W
Project/Site:Sisk Dam Corrective Action Project		City/Count	v: Merced	County Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation			/	State: CASampling Point: 14
Investigator(s):				
Landform (hillslope, terrace, etc.) HIUSIDE		Local rel	ief (concave	convex none) NONE Slope % 5%
Subregion (LRR)	So	il Man I Init I	lame: AD	DULD (LAN LORM 15-30 %
Are climatic/hydrologic conditions on the site typical for this ti		VES		a in romarka l
Are vegetation $\underline{\mathcal{N}}$ , soil $\underline{\mathcal{N}}$ , or hydrology $\underline{\mathcal{N}}$ signific	ine or year	- <u>- 10</u>	n no, explan	actorney procent? YES
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natural		offed (If an		a nu angurar in Pomarka
Are vegetation, son, or hydrology flatural	lly problem	auc? (IT nee	eaea, expiail	
Summary of Findings (Attach site map showing	sampling p	oint location	s, transects,	important features, etc.)
Hydrophytic vegetation? 45 Hydric soil? 465 Wetla	and hydrolo	gy? YFES	Is sampled	d area a wetland? 165 Other waters? NO
USACE Jurisdiction Adjacent to Waters X Tributary to Waters X Isolate Explain: Evaluation of features designated "Oth				
Evaluation of features designated "Off Indicators: Defined bed and bank Scour Feature Designation: Perennial Intermittent Ep Natural Drainage Artificial Drain	Ordin	ary High Wa	ater Mark Ma le on USGS	apped Quad
Vegetation Tree Stratum (use scientific names)	Absolute <u>% Cover</u>	Dominant Species?		Dominance Test Worksheet Number of dominant species that are OBL, FACW, or FAC:(A)
Free Stratum (use scientific names)				Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       (B)
Free Stratum (use scientific names)				Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       (B)
Tree Stratum (use scientific names)			<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC: (A) Total number of dominant species
Tree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u> 	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       1       (B)         Percent of dominant species that are OBL, FACW, or FAC:       1       (B)
Tree Stratum (use scientific names)  Tree Stratum (use scientific names)  Total Cover:  Sapling/Shrub Stratum (use scientific names)  Total Cover:	<u>% Cover</u>	<u>Species?</u> 	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC: (A) Total number of dominant species across all strata: (B)
Tree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u> 	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (A)         Prevalence Index Worksheet       (A)
Tree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u> 	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet Total % Cover of:       Multiply by
Tree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u> Species?	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       1       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (d)       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       1       x1 =
Tree Stratum (use scientific names)	<u>% Cover</u>	Species?	Status	Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet Total % Cover of:       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$
Tree Stratum (use scientific names)         50%=	% Cover % Cover % Cover % Cover % Cover	Species?	Status Status Status FACW	Number of dominant species that are OBL, FACW, or FAC:      (A)         Total number of dominant species across all strata:      (B)         Percent of dominant species that are OBL, FACW, or FAC:      (A)         Prevalence Index Worksheet Total % Cover of:      (A)         OBL Species
Tree Stratum (use scientific names)	% Cover % Cover % Cover % Cover 1 0 0	Species?	Status Status Status FACW	Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (d)         (AB)         Prevalence Index Worksheet Total % Cover of:       (AB)         OBL Species $x1 =$ FACW Species $x2 =$ FAC Species $x3 =$ FACU Species $x4 =$ UPL Species $x5 =$
Tree Stratum (use scientific names) 50% = 20% = Total Cover: Sapling/Shrub Stratum (use scientific names) 50% = 20% = Total Cover: $50% = 20% = Total Cover:$ Lerb Stratum (use scientific names) Lepidjum [atifoljum]	% Cover % Cover % Cover % Cover % Cover 100	Species?	Status Status Status FACW	Number of dominant species         that are OBL, FACW, or FAC:
Tree Stratum (use scientific names) 50% = 20% = Total Cover: Sapling/Shrub Stratum (use scientific names) 50% = 20% = Total Cover: $50% = 20% = Total Cover:$ lerb Stratum (use scientific names) Lepid; um [atifoljum]	% Cover % Cover % Cover % Cover \$ 0 cover	Species?	Status Status Status FACW	Number of dominant species       1       (A)         Total number of dominant species       (B)         Percent of dominant species that       (B)         Percent of dominant species that       (A)         are OBL, FACW, or FAC:       (A)         Prevalence Index Worksheet       (AB)         Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Tetals       (A)         Prevalance Index = B/A =
Tree Stratum (use scientific names) 50% = 20% = Total Cover: Sapling/Shrub Stratum (use scientific names) 50% = 20% = Total Cover: So%= 20%= Total Cover: lerb Stratum (use scientific names) Lepidium [atifoljum]	% Cover % Cover % Cover % Cover % Cover 0 0	Species?	Status Status Status FACW	Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (D)         Prevalence Index Worksheet Total % Cover of:       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)
Tree Stratum (use scientific names)	% Cover % Cover % Cover % Cover % Cover 0 0	Species?	Status Status Status FACW	Number of dominant species       1       (A)         Total number of dominant species       (B)         Percent of dominant species that       (B)         Percent of dominant species that       (A)         are OBL, FACW, or FAC:       (A)         Prevalence Index Worksheet       (AB)         Total % Cover of:       Multiply by         OBL Species $x1 =$ FACW Species $x2 =$ FAC Species $x3 =$ FACU Species $x4 =$ UPL Species $x5 =$ Column Tetals       (A)         Prevalance Index = B/A =         Hydrophytic Vegetation Indicators $X$ Dominance Text is >50%
Tree Stratum (use scientific names) 50%=	% Cover % Cover % Cover % Cover 0 0	Species?	Status Status Status FACW	Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 5 =$ Column Tetals       (A)         Prevalance Index = B/A =         Hydrophytic Vegetation Indicators $X$ Dominance Text is >50%         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supporting
Tree Stratum (use scientific names)         .	% Cover % Cover % Cover % Cover % Cover 100	Species?	Status Status Status Status Status Status Status Status Status Status	Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 5 =$ Column Tetals       (A)         Prevalence Index = B/A =         Hydrophytic Vegetation Indicators $\Delta$ Dominance Text is >50%         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet)
Tree Stratum (use scientific names)	% Cover           % Cover	Species?	Status Status Status Status Status Status Status Status Status Status	Number of dominant species that are OBL, FACW, or FAC:(A) Total number of dominant species across all strata:(B) Percent of dominant species that are OBL, FACW, or FAC:(AB) Prevalence Index Worksheet Total % Cover of:(AB) Prevalence Index Worksheet Total % Cover of:(AB) OBL SpeciesX1 = FACW SpeciesX2 = FAC SpeciesX3 = FACU SpeciesX3 = FACU SpeciesX5 = Column Tetals(A)(B) Prevalance Index = B/A = Hydrophytic Vegetation Indicators Dominance Text is >50% Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Tree Stratum (use scientific names)	% Cover           % Cover	Species?	Status Status Status Status Status Status Status Status Status Status	Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x1 =$ FACW Species $x2 =$ FAC Species $x3 =$ FACU Species $x5 =$ Column Tetals       (A)         Prevalence Index = B/A =         Hydrophytic Vegetation Indicators $\Delta$ Dominance Text is >50%         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet)
Tree Stratum (use scientific names)	% Cover           % Cover	Species?	Status Status Status Status Status Status Status Status Status Status	Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet Total % Cover of:       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =         Wdrophytic Vegetation Indicators $M$ Dominance Text is >50%         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must

Sampling Point 14

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# Soils

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Profile Description: (Describe to the depth Depth Matrix F	needed to docu Redox Features	iment the	indicator or	confirm t	he absence of indi	cators.
	olor (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup> 1M	Texture 10 AM	<u>Remarks</u>
1       Types: C = Concentration D = Depletion RM = F         Hydric Soil Indicators: (Applicable to all L	Reduced Matrix RRs, unless oth Sandy C Sandy F Sandy F Loamy f Loamy C	erwise no Sleyed Ma Redox (S5) Matrix (S Mucky Min Sleyed Ma d Matrix (F	trix (S4) ) 66) eral (F1) etrix (F2) F3)	= Pore Lini	ng RC = Root Cha ndicators for Probl 1 cm Muc 2 cm Muc 2 cm Muc Reduced Red Pare Vegetate	e <u>matic Hydric Soils³</u> k (A9) (LRR C) k (A10) (LRR B)
Thick Dark Surface (A12) Sandy Mucky Mineral (S1)	Redox D	d Dark Sur epression ools (F9)	• •		•	drophytic vegetation and gy must be present.
Remarks SEER WATER A WEAK INDICATORS ON D Hydrology Wetland Indicators Primary Indicators (Any one indicator is sufficient		<u>ښ</u> لام 		- vps	•	tors (2 or more required)
Surface Water (A1)        High Water Table (A2)        Saturation (A3)        Water Marks (B1) (Nonriverine)        Sediment Deposits (B2) (Nonriverine)        Surface Soil Cracks (B6)        Inundation Visible on        Aerial Imagery (B7)        Water-Stained Leaves (B9)	Salt Crus Biotic Cru Aquatic I Hydroge Oxidized Presence Recent II Plowed	ust (B12) nvertebra n Sulfide ( Rhizosph	Odor (C1) leres (C3) ced Iron (C4	4) #	Water Ma Sediment Drift Depo Drainage Dry-Seas Thin Muc Crayfish I	rks (B1) (Riverine) Deposits (B2) (Riverine) osits (B3) (Riverine) Patterns (B10) on Water Table (C2) k Surface (C7) Burrows (C8)
(=-)						quitard (D3) Iral Test (D5)

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North State Resources				Habitat Type DAM
Wetland Determination Data Form - Arid V				Wetland Type EMERGENT WILL
Project/Site:Sisk Dam Corrective Action Project		City/County:	Merced	County Sampling Date: 9/1/09
Applicant/Owner:U.S. Bureau of Reclamation				State: <u>CA</u> Sampling Point: <u>15</u>
Investigator(s): J. Colescott				- CONTADIE CHARGE ET
Landform (hillslope, terrace, etc.) <u>HILSLOPE</u>		_ Local relie	f (concave,	(1) $(1)$
Subregion (LRR) <u>LRR-C</u> Are climatic/hydrologic conditions on the site typical for this t	Sol	Map Unit Na	ame: <u>Ap</u>	in remotion
Are vegetation $\underline{\mathcal{N}}_{1}$ , soil $\underline{\mathcal{N}}_{2}$ , or hydrology $\underline{\mathcal{N}}_{2}$ signifi	cantly distur	hed? Are not	mal circum	netances present? YES
Are vegetation $\mathcal{N}$ , soil $\mathcal{N}$ , or hydrology $\mathcal{N}$ natural	illy problema	atic? (If need	led, explair	n any answers in Remarks.)
Summary of Findings (Attach site map showing	<u></u>			
Hydrophytic vegetation? HES Hydric soil? HES Wet	and hydrolo	gy? YES	Is sampled	d area a wetland? 465 Other waters? NO
USACE Jurisdiction Adjacent to Waters Isolate Explain:	ed (with inte	rstate comme	erce)	Isolated (non jurisdictional)
Evaluation of features designated "Ot	her Wat	ers of th	e Unite	ed States"
Indicators: Defined bed and bank Scour _	Ordin	ary High Wat	er Mark Ma	apped
Feature Designation: Perennial Intermittent E	ohemeral	Blue-line	on USGS	Quad
Remarks				
SMAN SEEP WEITAD	AT	BASIE	OF	DADM. WEITHDD IS
CORPANNED RY PLAD + PD	FD B.	HANG ( C	RUIDU	S WPUTNOS). NO PAR POINT
INSTACLOED.				
Vegetation Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?		Dominance Test Worksheet Number of dominant species 2
1	<u>70 00101</u>	<u>opcoics</u>	Otatus	that are OBL, FACW, or FAC: (A)
2				Total number of dominant species
3/				across all strata:(B)
50%= 20%= Total Cover:				Percent of dominant species that
Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	are OBL, FACW, or FAC: (AB)
1				Prevalence Index Worksheet
2				Total % Cover of: Multiply by
3		<u> </u>		OBL Species x1=
4				FACW Species x2=
Herb Stratum (use scientific names)	% Cover	Species?	Status	FAC Species x3 =
1. Tupha latitalia	50		6BL	FACU Species x4 =
2 Lepidium latifalium	30	<u> </u>	FACU	UPL Species x5 =
3. Conjum maculatum	20	<u> </u>	OBL	Column Totals (A) (B)
4				Prevalance Index = B/A =
5				Hydrophytic Vegetation Indicators
3				Dominance Text is $>50\%$ Prevalence Index is $\le 3.0^1$
7				Morphological Adaptations <sup>1</sup> (provide supporting
50%= 20%= Total Cover:		Charles	Cloture	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Woody/Vine Stratum (use scientific πames)	% Cover	Species?	SIGIUS	Indicators of hydric soil and wetland hydrology must
1				be present.
50%= 20%= Total Cover:				Hydrophytic Vegetation? YES
% Bare Ground in Herb Stratum O % Cover of Biot	C			
			6	1
				2 4

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Sampling Point 15

Depth <u>Matrix</u> (inches) <u>Color (moist)</u>		dox Features	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
		1R4/6 5	<u> </u>	<u>L0C-</u>	C. PAVE	UН		
10 12 12	10 /12	10 10 3			<u>Creatine</u>	-0-1	Contra L	
	,	1.						
		i						
<u></u>								
Types: C = Concentration D = Deple			<sup>2</sup> Location: PL					
Hydric Soil Indicators: (Appl	licable to all LRI			<u>I</u>			ematic Hydric So	<u>ils<sup>3</sup></u>
Histosol (A1)	_	Sandy Gleyed	Matrix (S4)				:k (A9) (LRR C)	
Histic Epipedon (A2)	_	Sandy Redox	(S5)		20	cm Muc	ж (А10) (LRR В)	
Black Histic (A3)	_	Stripped Matri	x (S6)		Re	educed	Vetric (F18)	
Hydrogen Sulfide (A4)	_	Loamy Mucky	Mineral (F1)		Re	ed Pare	nt Materials (TF	2)
Stratified Layers (AG) (LRF	R C).	Loamy Gleyed	Matrix (F2)		Ve	getated	d Sand/Gravel B	ars
1 cm Muck (A9) (LRR D)		Depleted Matri	ix (F3)		Oti	her (Ex	plain in Remark	s)
Depleted Below Dark Surfa	ace (A11)	Redox Dark Si	urface (F6)					
Thick Dark Surface (A12)		Depleted Dark	Surface (F7)			-	drophytic vegeta	
Sandy Mucky Mineral (S1)		X Redox Depres	sions (F8)		wetland h	ydrolog	gy must be prese	ent.
		Vernal Pools (	F9)					
Restrictive Layer (if present): Typ Remarks		Depth	(Inches)	<u> </u>	c Soil? 4F	25		
Remarks HYDRIC Hydrology		Depth		<u>    Hydri</u>	c Soil? <u>4</u> F	25		
Remarks HYDRIC	501 65			Hydri	~		tors (2 or more I	required
Remarks HYDRIC Hydrology Wetland Indicators	501 65		~, ~,	Hydri	Secondary	Indica	tors (2 or more i irks (B1) (Riverir	
Remarks HUDRIC Hydrology Wetland Indicators Primary Indicators (Any one indica	501 65		)	Hydri	Secondary	r Indica ater Ma		ne)
Remarks HYDRIC Hydrology Wetland Indicators Primary Indicators (Any one indicators Surface Water (A1)	501 65	Salt Crust (B11	) 12)	Hydri	Secondary	<u>Indica</u> ater Ma diment	rks (B1) (Riverir	ie) Riverine
Remarks HUDRIC Hydrology Wetland Indicators Primary Indicators (Any one indica Surface Water (A1) High Water Table (A2)	SOILS	Salt Crust (B11 Biotic Crust (B'	l) 12) brates (B13)	Hydri	<u>Secondary</u> Wa Se Dri	ndica ater Ma diment	rks (B1) (Riverir Deposits (B2) (	ie) Riverine
Remarks HYDRIC Hydrology Wetland Indicators Primary Indicators (Any one indicators Surface Water (A1) High Water Table (A2) Saturation (A3)	SOICS	Salt Crust (B11 Biotic Crust (B Aquatic Inverte	) 12) brates (B13) de Odor (C1)	Hydri	Secondary Wa Sec Dri Dra	<u>Indica</u> ater Ma diment ft Depo ainage	rks (B1) (Riverir Deposits (B2) ( osits (B3) (Riveri	ne) Riverine ne)
Remarks       HUDRIC         Hydrology         Wetland Indicators         Primary Indicators (Any one indicators)	SOICS	Salt Crust (B11 Biotic Crust (B Aquatic Inverte Hydrogen Sulfi	l) 12) brates (B13) de Odor (C1) ospheres (C3)		Secondary Wa Se Dri Dra	ater Ma diment ft Depo ainage y-Seas	rks (B1) (Riverin Deposits (B2) ( Disits (B3) (Riveri Patterns (B10)	ne) Riverine ne)
Remarks HUDRIC Hydrology Wetland Indicators Primary Indicators (Any one indicators Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonnverin Sediment Deposits (B2) (No	SOICS	Salt Crust (B11 Biotic Crust (B11 Aquatic Inverte	l) 12) brates (B13) de Odor (C1) ospheres (C3) educed Iron (C		Secondary Wa Sea Dri Dri Dra Dry	r Indica ater Ma diment ft Depo ainage y-Seaso in Mucl	rks (B1) (Riverin Deposits (B2) ( psits (B3) (Riverin Patterns (B10) on Water Table k Surface (C7)	ne) Riverine ne)
Remarks HYDRIC Hydrology Wetland Indicators Primary Indicators (Any one indica Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonnverin Sediment Deposits (B2) (No	SOICS	Salt Crust (B11 Biotic Crust (B11 Aquatic Inverte Hydrogen Sulfi X Oxidized Rhizo Presence of Re	i) 12) brates (B13) de Odor (C1) ospheres (C3) educed Iron (Co eduction in		Secondary	ater Ma diment ft Depo ainage y-Seas in Muol ayfish E	rks (B1) (Riverir Deposits (B2) ( osits (B3) (Riveri Patterns (B10) on Water Table	ne) Riverine ne)
Remarks HUDRIC Hydrology Wetland Indicators Primary Indicators (Any one indicators Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonivering Sediment Deposits (B2) (No Surface Soil Cracks (B6) Inundation Visible on	SOICS	Salt Crust (B11 Biotic Crust (B Aquatic Inverte Hydrogen Sulfi A Oxidized Rhizo Presence of Re Recent Iron Re	1) 12) brates (B13) de Odor (C1) ospheres (C3) educed Iron (Co eduction in C6)		SecondaryWaSeeDriDriDriDriThiSa	<u>Indica</u> ater Ma diment ft Depo ainage y-Seaso y-Seaso in Mucl ayfish E turation	rks (B1) (Riverir Deposits (B2) ( osits (B3) (Riveri Patterns (B10) on Water Table k Surface (C7) Burrows (C8)	ne) Riverine ne)
Remarks HUDRIC Hydrology Wetland Indicators Primary Indicators (Any one indicators Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonivering Sediment Deposits (B2) (No Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)	SOICS	Salt Crust (B11 Biotic Crust (B Aquatic Inverte Hydrogen Sulfi AOxidized Rhizo Presence of Re Recent Iron Re Plowed Soils (	1) 12) brates (B13) de Odor (C1) ospheres (C3) educed Iron (Co eduction in C6)		Secondary Wa Sea Dri Dri Dra Dry Cra Ae	r Indica ater Ma diment ft Depo ainage y-Seas in Mucl ayfish E turation erial Im	rks (B1) (Riverir Deposits (B2) ( osits (B3) (Riveri Patterns (B10) on Water Table k Surface (C7) Burrows (C8) n Visible on	ne) Riverine ne)
Remarks HUDRIC Hydrology Wetland Indicators Primary Indicators (Any one indicators Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonivering Sediment Deposits (B2) (No Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)	SOICS	Salt Crust (B11 Biotic Crust (B Aquatic Inverte Hydrogen Sulfi AOxidized Rhizo Presence of Re Recent Iron Re Plowed Soils (	1) 12) brates (B13) de Odor (C1) ospheres (C3) educed Iron (Co eduction in C6)		SecondaryWaSeDriDriDriThiSaSa	ater Ma diment ft Depo ainage y-Sease in Muol ayfish E turation erial Im- allow A	rks (B1) (Riverin Deposits (B2) ( Desits (B3) (Riverin Patterns (B10) on Water Table & Surface (C7) Burrows (C8) a Visible on agery (C9)	ne) Riverine ne)
Remarks       HyDRIC         Hydrology         Wetland Indicators         Primary Indicators (Any one indicators)	SOICS	Salt Crust (B11 Biotic Crust (B Aquatic Inverte Hydrogen Sulfi AOxidized Rhizo Presence of Re Recent Iron Re Plowed Soils (	1) 12) brates (B13) de Odor (C1) ospheres (C3) educed Iron (C duction in C6) in Remarks)	4)	Secondary Wa Sea Dri Dra Dry Thi Cra Ae Sha FA	ater Ma diment ft Depo ainage y-Sease in Mucl ayfish E turation erial Im allow A C-Netu	rks (B1) (Riverin Deposits (B2) ( Deposits (B3) (Riverin Patterns (B10) on Water Table & Surface (C7) Burrows (C8) A Visible on agery (C9) Aquitard (D3) ural Test (D5)	ne) Riverine ne)
Remarks       HyDRIC         Hydrology         Wetland Indicators         Primary Indicators (Any one indicators)	SOICS	Salt Crust (B11 Biotic Crust (B Aquatic Inverte Hydrogen Sulfi AOxidized Rhizo Presence of Re Recent Iron Re Plowed Soils (	1) 12) brates (B13) de Odor (C1) ospheres (C3) educed Iron (C duction in C6) in Remarks)	4)	Secondary Wa Sea Dri Dra Dry Thi Cra Ae Sha FA	ater Ma diment ft Depo ainage y-Sease in Mucl ayfish E turation erial Im allow A C-Netu	arks (B1) (Riverin Deposits (B2) (f posits (B3) (Riverin Patterns (B10) on Water Table k Surface (C7) Burrows (C8) a Visible on agery (C9) Aquitard (D3)	ne) Riverine ne)
Remarks       HyDRIC         Hydrology         Wetland Indicators         Primary Indicators (Any one indicators (Any one indicators)	SOICS	Salt Crust (B11 Biotic Crust (B11 Aquatic Inverte Hydrogen Sulfi Oxidized Rhizo Presence of Re Recent Iron Re Plowed Soils ( Other (Explain	) 12) brates (B13) de Odor (C1) ospheres (C3) educed Iron (C- duction in C6) in Remarks)	4)	Secondary Wa Sea Dri Dra Dry Thi Cra Ae Sha FA	ater Ma diment ft Depo ainage y-Sease in Mucl ayfish E turation erial Im allow A C-Netu	rks (B1) (Riverin Deposits (B2) ( Deposits (B3) (Riverin Patterns (B10) on Water Table & Surface (C7) Burrows (C8) A Visible on agery (C9) Aquitard (D3) ural Test (D5)	ne) Riverine ne)

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Wetland Determination Data Form - Arid V	Nost Pog	ion		Habitat Type DITCH Wetland Type VECETATED DITC
	•			
Project/Site:Sisk Dam Corrective Action Project		City/Count	y: <u>Mercec</u>	d County Sampling Date:
Applicant/Owner: <u>U.S. Bureau of Reclamation</u>				State: <u>CA</u> Sampling Point: <u>16</u>
Investigator(s): J. Colescott				- AGALAGUE Class of 2 th
Landform (hillslope, terrace, etc.) DITCH		_ Local rel	ief (concave	e, convex, none) <u>CONCATE</u> Slope % <u>5</u>
Subregion (LRR)	So	il Map Unit I	Vame: Ap	ono chang Loan 10 Der
Are climatic/hydrologic conditions on the site typical for this				
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ signifiant Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natural number of the second sec	icantly distur	bed? Are n	ormal circur	mstances present?
Are vegetation <u>1</u> , soil <u>,</u> , or hydrology <u>,</u> natura	ally problema	atic? (If ne	eded, explai	in any answers in Remarks.)
Summary of Findings (Attach site map showing Hydrophytic vegetation? 45 Hydric soil? 45 Web	) sampling po tland hydrolo	oint location	s, transects s Is sample	a, important features, etc.) ad area a wetland? <u>YFS</u> Other waters? <u>YES</u>
USACE Jurisdiction Adjacent to Waters Tributary to Waters Isolat Explain:	ed (with inte	rstate comn	nerce)	_ Isolated (non jurisdictional)
Evaluation of features designated "Ot Indicators: Defined bed and bank A Scour Feature Designation: Perennial Intermittent Designation: Defined bed and bank	phemeral	ary High W Blue-lin	ater Mark Mark Mark Mark Mark	apped <u>X</u> S Quad
Natural Drainage Artificial Drai				
Remarks DITCH TO COULECT RES. 15 FUL,	Estim	n.e	inne	
Vegetation	Absolute		Indicator	Dominance Test Worksheet Number of dominant species
Tree Stratum (use scientific names) 1.	<u>% Cover</u>	Species?	Status	that are OBL, FACW, or FAC: (A)
2				
				Total number of dominant species
3				Total number of dominant species (B)
				across all strata: (B)
Sapling/Shrub Stratum (use scientific names)	1	Species?	Status	
50%= 20%= Total Cover: Sapling/Shrub Stratum (use scientific names)	% Cover	<u>Species?</u>		across all strata: (B)
50%= 20%= Total Cover: Sapling/Shrub Stratum (use scientific names)	% Cover		· <u>·····</u>	across all strata: (B) Percent of dominant species that are OBL, FACW, or FAC: (AB) Prevalence Index Worksheet
50%=       20%=       Total Cover:         Sapling/Shrub Stratum (use scientific names)	<u>% Cover</u>		· <u>·····</u>	across all strata:(B) Percent of dominant species that are OBL, FACW, or FAC:(AB) Prevalence Index Worksheet Total % Cover of:Multiply by
50%=       20%=       Total Cover:         Sapling/Shrub Stratum (use scientific names)	<u>% Cover</u>			across all strata:
50%=       20%=       Total Cover:         Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	across all strata:
50%=       20%=       Total Cover:         Sapling/Shrub Stratum (use scientific names)	% Cover % Cover 70%	Species?	Status	across all strata:
50%= 20%= Total Cover: Sapling/Shrub Stratum (use scientific names)  50%= 20%= Total Cover: lerb Stratum (use scientific names) Polyphaon_Monspeliensis Total Cover:	% Cover % Cover 70%	Species?	Status Frew OBL	across all strata:
50%= 20%= Total Cover: Sapling/Shrub Stratum (use scientific names)  50%= 20%= Total Cover: lerb Stratum (use scientific names) Polyphan Monspeliensis  Total Cover:   Polyphan Monspeliensis   Total Cover:    	% Cover % Cover 70% 10	Species?	Status	across all strata:
50%= 20%= Total Cover: Sapling/Shrub Stratum (use scientific names)  50%= 20%= Total Cover:  50%= 20%= Total Cover:      Total Cover:  	% Cover % Cover 70% 10	Species?	Status Frew OBL	across all strata:
50%= 20%= Total Cover: Sapling/Shrub Stratum (use scientific names) 	% Cover % Cover 70% 10	Species?	Status Frew OBL OBL	across all strata:
50%= Total Cover: Sapling/Shrub Stratum (use scientific names)  	% Cover % Cover 70% 10	Species?	Status Frew OBL OBL	across all strata:
50%= 20%= Total Cover: Sapling/Shrub Stratum (use scientific names)  3   50%= 20%= Total Cover: Herb Stratum (use scientific names) Poly praov Monspeliensis    	% Cover 70% 10	Species?	Status Frew OBL OBL	across all strata:(B)Percent of dominant species that are OBL, FACW, or FAC: $\square \bigcirc \bigcirc$ (AB)Prevalence Index Worksheet Total % Cover of: $\square \bigcirc \bigcirc$ (AB)OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals(A)Prevalance Index = B/A =Hydrophytic Vegetation Indicators $\square$ Dominance Text is >50% $\square$ Prevalence Index is $\leq 3.0^1$ Morphological Adaptations1 (provide supportint)
50%= 20%= Total Cover: Sapling/Shrub Stratum (use scientific names) 1 3 50%= 20%= Total Cover: Herb Stratum (use scientific names) 1. $Poluplaon Monspeliensis$ 2 S Monspeliensis 3 50%= 20%= Total Cover: 50%= 20%= Total Cover: Voody/Vine Stratum (use scientific names)	% Cover 70% 10 40 % Cover	Species?	Status F3 ens OBL	across all strata:       (B)         Percent of dominant species that $IOO$ (AB)         Prevalence Index Worksheet $IOO$ (AB)         Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =         Hydrophytic Vegetation Indicators $A$ Dominance Text is >50%         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supportindate in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation 1 (Explain 1/1 ndicators of hydric soil and wetland hydrology must
50%= Total Cover: Sapling/Shrub Stratum (use scientific names)    50%= 20%= Total Cover: Herb Stratum (use scientific names) Poly plaon Monspeliensis  	% Cover 70% 10 40 % Cover	Species?	Status F3 ens OBL	across all strata:
50%= 20%= Total Cover: Sapling/Shrub Stratum (use scientific names) 1 3 50%= 20%= Total Cover: Herb Stratum (use scientific names) 1. $Poluplaon Monspeliensis$ 2 S Monspeliensis 3 50%= 20%= Total Cover: 50%= 20%= Total Cover: Voody/Vine Stratum (use scientific names)	% Cover           % Cover           70%           10           40           % Cover	Species?           1           N           N           Species?	Status F3 ens OBL	across all strata:       (B)         Percent of dominant species that $IOO$ (AB)         Prevalence Index Worksheet $IOO$ (AB)         Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =         Hydrophytic Vegetation Indicators $A$ Dominance Text is >50%         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supportindate in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation 1 (Explain 1/1 ndicators of hydric soil and wetland hydrology must

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# Soils

Depth <u>Matrix</u>		Redox Feature		- 1		<del>~</del> .		Demerke		
nches) <u>Color (moist) %</u>		Color (moist)	<u>%</u>	<u>Type<sup>1</sup></u>		Texture	10410	Remarks	Y HA	sh
-3 104R 3/2 80	/	54R 4/4	20	<u> </u>	M	COBBLY	Lung	COULD		
				· ·				2 11	ntar i	
				·				91		
ypes: C = Concentration D = Depletion	on RM =	Reduced Matrix	2	Location: PL =	= Pore Li	ning RC = Ro	ot Channel	M = Matr	ix	
ydric Soil Indicators: (Applications)	able to all	LRRs, unless o	therwise r	noted)		Indicators for	Problema	<u>ttic Hydric S</u>	<u>Soils<sup>3</sup></u>	
Histosol (A1)		Sandy	Gleyed M	Aatrix (S4)		1 ci	m Muck (A	49) (LRR C	)	•
Histic Epipedon (A2)		Sandy	Redox (S	65)		2 cr	m Muck (A	410) (LRR (	3)	
Black Histic (A3)		Strippe	ed Matrix (	(S6)		Red	duced Vet	ric (F18)		
Hydrogen Sulfide (A4)		Loamy	Mucky M	lineral (F1)		Rec	d Parent M	Aaterials (T	F2)	
Stratified Layers (AG) (LRR (	<b>C)</b> .	Loamy	Gleyed N	Matrix (F2)		Veg	jetated Sa	and/Gravel	Bars	
1 cm Muck (A9) (LRR D)		Deplet	ed Matrix	(F3)		Oth	er (Explai	n in Remar	ks)	
Depleted Below Dark Surface	e (A11)	Redox	Dark Sur	face (F6)		7				
Thick Dark Surface (A12)		Deplete	ed Dark S	Surface (F7)		<sup>3</sup> Indicators				l
Sandy Mucky Mineral (S1)		X Redox	Depressio	ons (F8)		wetland hy	drology n	nust be pre	sent.	
		Vernal	Pools (F9	9)						
Remarks VERY HARD		BLE		nches) <u>3</u>	⊾ Hyd	ric Soil?	ES			
Remarks VECY HARD Hydrology Vetland Indicators	, се	tcked 3		nches) <u>3</u>	h Hyd					
Remarks VECY HARD Hydrology Vetland Indicators	, се	tcked 3		nches) <u>3</u> '	h Hyd	Iric Soil?		(2 or more	required	
Remarks VECY HARD Hydrology Vetland Indicators	, се	tcked 3	012.	nches) <u>3</u>	<u>н</u> Нуd	Secondary	Indicators	(2 or more (B1) (River		
Remarks VECY HARD Hydrology Vetland Indicators Primary Indicators (Any one indicato	, се	ent)	012.		*Hyd	Secondary	Indicators ler Marks	(B1) (River	rine)	
Remarks VEC HARD Hydrology Vetland Indicators rimary Indicators (Any one indicato	, се	ent) 	ust (B11) Crust (B12	2)	<u>н</u> Нуd	Secondary Wat	Indicators ter Marks liment De	(B1) (River	rine) (Riverine	
Remarks VEC HARD Hydrology Vetland Indicators rimary Indicators (Any one indicato Surface Water (A1) High Water Table (A2)	r is suffici	ent)       Main     Salt Cropped Salt	ust (B11) Crust (B12 c Invertebr	2)	*Hyd	Secondary Wat Sed Drif	Indicators ter Marks liment De t Deposits	(B1) (River posits (B2)	rine) (Riverine erine)	
Remarks VEC HARD Hydrology Vetland Indicators Primary Indicators (Any one indicato Surface Water (A1) High Water Table (A2) Saturation (A3)	r is suffici	ent) Salt Cro Biotic C Aquatic Hydrog	ust (B11) Crust (B12 c Invertebr jen Sulfide	2) rates (B13)	<u>н</u> Нуd	Secondary Wat Sed Drif	Indicators ter Marks liment De t Deposits inage Pat	(B1) (River posits (B2) s (B3) (Rive	rine) (Riverine erine)	
Remarks VEC HARD Hydrology Vetland Indicators rimary Indicators (Any one indicato Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine	r is suffici	ent) <u>×</u> Salt Cru Biotic C Aquatic Hydrog Oxidize	ust (B11) Crust (B12 c Invertebr en Sulfide ed Rhizosp	2) rates (B13) e Odor (C1)		Secondary Wat Sed Drift Dra	Indicators ter Marks liment De t Deposits inage Pat -Season N	(B1) (River posits (B2) s (B3) (Rive terns (B10)	rine) (Riverine rrine) ) e (C2)	
Remarks       VEC:       HARD         Hydrology       Hydrology         Vetland Indicators       Primary Indicators (Any one indicato         Surface Water (A1)       High Water Table (A2)         Saturation (A3)       Water Marks (B1) (Nonriverine         Sediment Deposits (B2) (Nonriverine)	r is suffici	ent) <u>×</u> Salt Cru Biotic C Aquatic Hydrog Oxidize Presen	ust (B11) Crust (B12 c Invertebr en Sulfide ed Rhizosp	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C4		Secondary Wat Sed Drif Dra Dry Thir	Indicators ter Marks liment De t Deposits inage Pat -Season N	(B1) (River posits (B2) s (B3) (River terns (B10) Water Table urface (C7)	rine) (Riverine rrine) ) e (C2)	
Remarks       VEC:       HARD         Hydrology       Hydrology         Vetland Indicators       Primary Indicators (Any one indicators)	r is suffici	ent) Salt Cru Biotic C Aquatic Hydrog Oxidize Presen Recent	ust (B11) Crust (B12 c Invertebr gen Sulfide ed Rhizosp ce of Red	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C4 uction in		Secondary Wat Sed Drif Dra Dry Thir	Indicators ter Marks liment De t Deposits inage Pat -Season V n Muck Su yfish Burr	(B1) (River posits (B2) s (B3) (River terns (B10) Water Table urface (C7) ows (C8)	rine) (Riverine rrine) ) e (C2)	
Hydrology         Vetland Indicators         Primary Indicators (Any one indicato         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonnverine         Sediment Deposits (B2) (Nonr         Surface Soil Cracks (B6)         Inundation Visible on	r is suffici	ent) Salt Cru Biotic C Aquatic Hydrog Oxidize Presen Recent Plowed	ust (B11) Crust (B12 c Invertebr en Sulfide ed Rhizosp ce of Red l ron Redu d Soils (Cé	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C4 uction in		Secondary Wat Secondary Drift Dra Dry Thir Cra Satu Aer	Indicators ier Marks liment De t Deposits inage Pat -Season V -Season V -Sea	(B1) (River posits (B2) s (B3) (River terns (B10) Water Table urface (C7) ows (C8) sible on ry (C9)	rine) (Riverine rrine) ) e (C2)	
Remarks       VEC:       HARD         Hydrology         Vetland Indicators         Primary Indicators (Any one indicato	r is suffici	ent) Salt Cru Biotic C Aquatic Hydrog Oxidize Presen Recent Plowed	ust (B11) Crust (B12 c Invertebr en Sulfide ed Rhizosp ce of Red l ron Redu d Soils (Cé	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C4 uction in 6)		Secondary Wat Wat Sed Drift Dra Dry Thir Cra Aer Sha	Indicators ter Marks liment De t Deposits inage Pat -Season V n Muck Su yfish Burr uration Vi ial Image illow Aqui	(B1) (River posits (B2) (B3) (River terns (B10) Water Table urface (C7) ows (C8) sible on ry (C9) tard (D3)	rine) (Riverine rrine) ) e (C2)	
Remarks       VEC:       HARD         Hydrology         Vetland Indicators         Primary Indicators (Any one indicato	r is suffici	ent) Salt Cru Biotic C Aquatic Hydrog Oxidize Presen Recent Plowed	ust (B11) Crust (B12 c Invertebr en Sulfide ed Rhizosp ce of Red l ron Redu d Soils (Cé	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C4 uction in 6)		Secondary Wat Wat Sed Drift Dra Dry Thir Cra Aer Sha	Indicators ier Marks liment De t Deposits inage Pat -Season V -Season V -Sea	(B1) (River posits (B2) (B3) (River terns (B10) Water Table urface (C7) ows (C8) sible on ry (C9) tard (D3)	rine) (Riverine rrine) ) e (C2)	
Remarks       VEC:       HARD         Hydrology         Vetland Indicators         Primary Indicators (Any one indicato	r is suffici	ent) Salt Cru Biotic C Aquatic Hydrog Oxidize Presen Recent Plowed	ust (B11) Crust (B12 c Invertebr en Sulfide ed Rhizosp ce of Red l ron Redu d Soils (Cé	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C4 uction in 6) Remarks)	4)	Secondary Wat Sed Dra Dra Dra Thir Cra Satu Aer Sha Sha	Indicators ter Marks liment De t Deposits inage Pat -Season V n Muck Su yfish Burr uration Vi ial Image illow Aqui 2-Netural	(B1) (River posits (B2) (B3) (River terns (B10) Water Table urface (C7) ows (C8) sible on ry (C9) tard (D3) Test (D5)	rine) (Riverine rrine) ) e (C2)	
Remarks       VEC: HARD         Hydrology         Vetland Indicators         Primary Indicators (Any one indicato         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonriverine         Sediment Deposits (B2) (Nonr         Surface Soil Cracks (B6)         Inundation Visible on         Aerial Imagery (B7)         Water-Stained Leaves (B9)	r is suffici	ent)  M Salt Cro Biotic C Aquatic Hydrog Oxidize Presen Recent Plowed Other (I	ust (B11) Crust (B12 c Invertebr gen Sulfide ed Rhizosp ce of Red Iron Redu Soils (Cf Explain in	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C4 uction in 6) Remarks)	4)	Secondary Wat Wat Sed Drift Dra Dry Thir Cra Aer Sha	Indicators ter Marks liment De t Deposits inage Pat -Season V n Muck Su yfish Burr uration Vi ial Image illow Aqui 2-Netural	(B1) (River posits (B2) (B3) (River terns (B10) Water Table urface (C7) ows (C8) sible on ry (C9) tard (D3) Test (D5)	rine) (Riverine rrine) ) e (C2)	
Remarks       VEC ( HAP)         Hydrology         Vetland Indicators         Primary Indicators (Any one indicato         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonriverine         Sediment Deposits (B2) (Nonriverine         Surface Soil Cracks (B6)         Inundation Visible on         Aerial Imagery (B7)         Water-Stained Leaves (B9)	r is suffici	ent) Salt Cru Biotic C Aquatic Aquatic Aquatic Oxidize Presen Recent Plowed Other (fill)	ust (B11) Crust (B12 c Invertebr gen Sulfide ed Rhizosp ce of Red Iron Redu Soils (Cf Explain in	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C4 uction in 6) Remarks)	4)	Secondary Wat Sed Dra Dra Dra Thir Cra Satu Aer Sha Sha	Indicators ter Marks liment De t Deposits inage Pat -Season V n Muck Su yfish Burr uration Vi ial Image illow Aqui 2-Netural	(B1) (River posits (B2) (B3) (River terns (B10) Water Table urface (C7) ows (C8) sible on ry (C9) tard (D3) Test (D5)	rine) (Riverine rrine) ) e (C2)	

North State Resources         Wetland Determination Data Form - Arid Wetland Determination Determination Determination Project         Applicant/Owner:       U.S. Bureau of Reclamation         Investigator(s):       J. Colescott         Landform (hillslope, terrace, etc.)       PUATA         Subregion (LRR)       LRR-C         Are climatic/hydrologic conditions on the site typical for this tim Are vegetation       N, soil         Are vegetation       N, soil         Are vegetation       N, soil         Summary of Findings (Attach site map showing s         Hydrophytic vegetation?       Mydric soil?         Wetland         USACE Juriscliction         Adjacent to Waters       Isolated         Evaluation/of features designated "Othendicators:         Defined bed and bank       Scour         Feature Designation:       Perennial         Natural Drainage       Artificial Draina         Remarks SMAM       SHAUDW       PEPR         D       Minter       WETAWD	So me of year? antly distur by problema sampling pund hydrolo d (with inte mer Wat Ordin hemeral age R-5 55 /	Local rel Local rel Map Unit I P <u>YES</u> bed? Are n atic? (If ner oint location restate comm rstate comm ters of t Blue-lin Navigable	ief (concave Name: <u>Do</u> If no, explai ormal circum aded, explai s, transects, Is sample herce) he Unite ater Mark Ma ie on USGS Water	
Applicant/Owner:       U.S. Bureau of Reclamation         Investigator(s):       J. Colescott         Landform (hillslope, terrace, etc.)       PULIN         Subregion (LRR)       LRR-C         Are climatic/hydrologic conditions on the site typical for this tim         Are vegetation       N, soil         N, soil       N, or hydrology         Submary of Findings (Attach site map showing s         Hydrophytic vegetation?       Hydric soil?         Vetlat         USACE Juriscliction         Adjacent to Waters       Isolated         Evaluation of features designated "Oth         ndicators:       Defined bed and bank         Scour       Scour         Feature Designation:       Perennial         Intermittent       Eph         Natural Drainage       Artificial Draina         Remarks SMAU       SHAUDON	Some of years antly distur by problema sampling po and hydrolo d (with inte mer Wat Ordin hemeral age R-5.55, 1	Local rel il Map Unit I y <u>YES</u> bed? Are n atic? (If ner oint location agy? <u>N</u> rstate comm ters of t hary High Wa 	ief (concave Name: <u>Do</u> If no, explai ormal circum aded, explai s, transects, Is sample herce) he Unite ater Mark Ma ie on USGS Water	
Applicant/Owner:       U.S. Bureau of Reclamation         Investigator(s):       J. Colescott         Landform (hillslope, terrace, etc.)       PULIN         Subregion (LRR)       LRR-C         Are climatic/hydrologic conditions on the site typical for this tim         Are vegetation       N, soil         N, soil       N, or hydrology         Submary of Findings (Attach site map showing s         Hydrophytic vegetation?       Hydric soil?         Vetlat         USACE Juriscliction         Adjacent to Waters       Isolated         Evaluation of features designated "Oth         ndicators:       Defined bed and bank         Scour       Scour         Feature Designation:       Perennial         Intermittent       Eph         Natural Drainage       Artificial Draina         Remarks SMAU       SHAUDON	Some of years antly distur by problema sampling po and hydrolo d (with inte mer Wat Ordin hemeral age R-5.55, 1	Local rel il Map Unit I y <u>YES</u> bed? Are n atic? (If ner oint location agy? <u>N</u> rstate comm ters of t hary High Wa 	ief (concave Name: <u>Do</u> If no, explai ormal circum aded, explai s, transects, Is sample herce) he Unite ater Mark Ma ie on USGS Water	
Investigator(s): <u>J. Colescott</u> Landform (hillslope, terrace, etc.) <u>PUAIN</u> Subregion (LRR) <u>LRR-C</u> Are climatic/hydrologic conditions on the site typical for this tim Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u> significa Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u> naturally Summary of Findings (Attach site map showing s Hydrophytic vegetation? <u>N</u> Hydric soil? <u>N</u> Wetlan USACE Juriscliction Adjacent to Waters Tributary to Waters Isolated Explain: Evaluation of features designated "Oth ndicators: Defined bed and bank Scour eature Designation: Perennial Intermittent Eph Natural Drainage Artificial Draina Remarks SMAU SHALDON DEPM	Some of years antly distur by problema sampling point and hydrolo d (with inte mer Wat Ordin hemeral age R-5.55, 1	il Map Unit I 2 <u>YES</u> bed? Are n atic? (If ner oint location gy? <u>N</u> rstate comm rstate comm ters of t hary High Wa Blue-lin Navigable	Vame: <u>Do</u> If no, explain cormal circum aded, explain s, transects, Is sample herce) he United her Mark Mark Marker water	min remarks.)         in in remarks.)         in any answers in Remarks.)         , important features, etc.)         d area a wetland? NO         Other waters? NO
Subregion (LRR) <u>LRR-C</u> Are climatic/hydrologic conditions on the site typical for this tim Are vegetation N, soil N, or hydrology N significa Are vegetation N, soil N, or hydrology N naturally Summary of Findings (Attach site map showing s Hydrophytic vegetation? N Hydric soil? N Wetlan USACE Juristiction Adjacent to Waters Isolated Evaluation of features designated "Oth ndicators: Defined bed and bank Scour eature Designation: Perennial Intermittent Eph Natural Drainage Artificial Draina Remarks SMAN SHANDN DEPN	Some of year's antly distur distur distur distur distur distur distur distur di y problema sampling poind hydrolo di (with inte	il Map Unit I 2 <u>YES</u> bed? Are n atic? (If ner oint location gy? <u>N</u> rstate comm rstate comm ters of t hary High Wa Blue-lin Navigable	Vame: <u>Do</u> If no, explain cormal circum aded, explain s, transects, Is sample herce) he United her Mark Mark Marker water	min remarks.)         in in remarks.)         in any answers in Remarks.)         , important features, etc.)         d area a wetland? NO         Other waters? NO
Subregion (LRR)       LRR-C         Are climatic/hydrologic conditions on the site typical for this tim         Are vegetation       N, soil       N, or hydrology       Significal         Are vegetation       N, soil       N, or hydrology       N andurally         Summary of Findings (Attach site map showing s         Hydrophytic vegetation?       N       Hydric soil?       N         Wetland         USACE Juriscliction         Adjacent to Waters       Isolated         Explain:       Tributary to Waters       Isolated         Evaluation of features designated "Oth       Natural Drainage       Artificial Drainage         Remarks Sm& SHAM       SHAMON       DEP M	Some of year's antly distur distur distur distur distur distur distur distur di y problema sampling poind hydrolo di (with inte	il Map Unit I 2 <u>YES</u> bed? Are n atic? (If ner oint location gy? <u>N</u> rstate comm rstate comm ters of t hary High Wa Blue-lin Navigable	Vame: <u>Do</u> If no, explain cormal circum aded, explain s, transects, Is sample herce) he United her Mark Mark Marker water	min remarks.)         in in remarks.)         in any answers in Remarks.)         in any answers in Remarks.)         important features, etc.)         d area a wetland?         NO         Other waters?         NO         important features, etc.)         d area a wetland?         NO         ed States"         apped         Quad
Are climatic/hydrologic conditions on the site typical for this tim         Are vegetation       N, soil       n or hydrology       significa         Are vegetation       N, soil       n or hydrology       naturally         Summary of Findings (Attach site map showing s         Hydrophytic vegetation?       Hydric soil?       Wetland         USACE Jurisciction         Adjacent to Waters       Isolated         Explain:       Tributary to Waters       Isolated         Evaluation of features designated "Oth       ndicators:       Defined bed and bank       Scour         eature Designation:       Perennial       Intermittent       Eph         Natural Drainage       Artificial Draina         Remarks       SMAN       SHALLON       DEPA	ne of year? antly distur by problema sampling pu and hydrolo d (with inte ordin hemeral age R-5.551	rstate comm ters of t avy High Wa Blue-lin Navigable	If no, explai ormal circun aded, explai s, transects, ls sample herce) he Unite ater Mark Ma e on USGS Water	in in remarks.) Instances present? IES In any answers in Remarks.) In important features, etc.) Instances a wetland? NO Other waters? NO Isolated (non jurisdictional) Isolated (non jurisdictional) Isolates'' I
Are vegetation $N$ , soil $N$ , or hydrology $N$ significa Are vegetation $N$ , soil $N$ , or hydrology $N$ naturally Summary of Findings (Attach site map showing s Hydrophytic vegetation? $N$ Hydric soil? $N$ Wetlan USACE Juriscliction Adjacent to Waters Tributary to Waters Isolated Explain: Evaluation of features designated "Oth ndicators: Defined bed and bank Scour eature Designation: Perennial Intermittent Eph Natural Drainage Artificial Draina Remarks SMAN SHANDN DEPM	antly distur ly problems sampling pu- and hydrolo d (with inte <b>ner Wat</b> <b>ner Wat</b> <u>ner Wat</u> $R = \frac{1}{2} \leq \frac{1}{2}$	ters of t avigable	ormal circun aded, explai s, transects, ls sample herce) he Unite ater Mark Ma te on USGS Water	nstances present? <u>JES</u> in any answers in Remarks.) , important features, etc.) d area a wetland? <u>N</u> Other waters? <u>N</u> d area a wetland? <u>N</u> Other waters? <u>N</u> usolated (non jurisdictional) ed States'' apped
Are vegetation N, soil N, or hydrology N naturally Summary of Findings (Attach site map showing s Hydrophytic vegetation? N Hydric soil? N Wetlan USACE Juriscitction Adjacent to Waters Isolated Explain: Evaluation of features designated "Oth ndicators: Defined bed and bank Scour Feature Designation: Perennial Intermittent Eph Natural Drainage Artificial Draina Remarks SMAN SHANDN DEPM	ly problema sampling point and hydrolo d (with inte mer Wat Ordin hemeral age R-5.551	atic? (If new oint location agy? N rstate comm ters of t hary High Wa Blue-lin Navigable	eded, explai s, transects, ls sample herce) he Unite ater Mark Mark water	n any answers in Remarks.) , important features, etc.) d area a wetland? No Other waters? No 
Summary of Findings (Attach site map showing s Hydrophytic vegetation? . Hydric soil? N Wetlan USACE Juristiction Adjacent to Waters Isolated Explain: Evaluation of features designated "Oth Indicators: Defined bed and bank Scour Teature Designation: Perennial Intermittent Eph Natural Drainage Artificial Draina Remarks SMAN SHANDN DEPM	sampling puind hydrolo d (with inte ordin hemeral R-5.551	rstate comm rstate comm ters of t ary High Wa Blue-lin Navigable	s, transects, Is sample herce) he Unite ater Mark Mark e on USGS Water	important features, etc.) d area a wetland? No Other waters? NO Isolated (non jurisdictional) ed States'' apped Quad
Hydrophytic vegetation?       N       Hydric soil?       N       Wetlan         USACE Juriscliction         Adjacent to Waters       Tributary to Waters       Isolated         Explain:       Tributary to Waters       Isolated         Evaluation of features designated "Oth ndicators:       Defined bed and bank       Scour         Feature Designation:       Perennial       Intermittent       Eph         Natural Drainage       Artificial Draina         Remarks SMAU       SHAUDW       DEP	d (with inte	rstate comm ters of t ary High Wa Blue-lin Navigable	Is sample herce) he Unite ater Mark Mark Mark on USGS Water	d area a wetland? <u>N</u> Other waters? <u>NO</u> Isolated (non jurisdictional) ed States'' apped Quad
USACE Jurisdiction Adjacent to Waters Tributary to Waters Isolated Explain: Evaluation of features designated "Oth ndicators: Defined bed and bank Scour reature Designation: Perennial Intermittent Eph Natural Drainage Artificial Draina Remarks SMAU SHAUDW DEPK	d (with inte	rstate comm ters of t mary High Wa Blue-lin Navigable	herce) he Unite ater Mark Mark Mark e on USGS Water	Isolated (non jurisdictional) ed States'' apped Quad
Evaluation of features designated "Oth ndicators:       Defined bed and bank Scour         Feature Designation:       Perennial Intermittent Eph Natural Drainage Artificial Drainage         Remarks SMAU       SHAUDW	Ordin hemeral age R-& \$\$	Aary High Wa Blue-lin Navigable	ater Mark Mark Mark Mare on USGS Water	apped Quad
Feature Designation: Perennial Intermittent Eph         Natural Drainage Artificial Draina         Remarks Small       SHALLOW DEPK	hemeral age R-E 555 / J	Blue-lin Navigable	e on USGS Nater	Quad
Remarks SMALL SHALLOW DEPL	R. 855)	on -	Nater SUS PE	LET WEITAND. FAILED
Remarks SMALL SHALLOW DEPL	R. 855)	on -	505 PF.	LET WEITAND. FAILED
D MILET WEITHND PARA	rn ETE	225.	20514	
D MINILI WEITAND PART	rn RTR	25.		
	-			
/egetation	Abaaluta	Dominant	Indiantar	Dominance Test Worksheet
	Absolute % Cover	Species?	Indicator Status	Number of dominant species
	<u>n oorer</u>	000000	Oluluo	that are OBL, FACW, or FAC: (A)
				Total number of dominant species <b>3</b> (B)
				across all strata:
50%= 20%= Total Cover:				Descript of dominant appairs that
	% Cover	Species?	Status	Percent of dominant species that <u>33</u> (AB)
·				
				Prevalence Index Worksheet Total % Cover of: Multiply by
	2	8 - 67 C		OBL SpeciesX1 =
50%= 20%= Total Cover:				
	% Cover	Species?	Status	FAC Species x3=
	40	Ч	FAC	FACU Species ×4 =
AMGNKIA MENZICZI		4	VPL	UPL Species x5 =
Bronus hordeacous		4	FACU	Column Totals (A) (B)
B. diandrug		10	UPL	Prevalance Index = B/A =
Brassica Negra		N	UPL	It deschade Vegetation Indicators
		<u> </u>		Hydrophytic Vegetation Indicators Dominance Text is >50%
			·	Prevalence Index is ≤ 3.0 <sup>1</sup>
50%= 20%= Total Cover.	1/907			Morphological Adaptations <sup>1</sup> (provide supporting
	Section 1	Coording?	Clotus	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	% Cover	Species?	SIGIUS	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
				be present.
				Hydrophytic Vegetation? NO
50%= 20%= Total Cover: Bare Ground in Herb Stratum % Cover of Biotic				The second state of the se

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# Soils

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Depth <u>Matrix</u> (inches) <u>Color (moist)</u> <u>%</u>	Redox Features Color (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
~10 104R4/3 100			~			word	
ypes: C = Concentration D = Depletion RM	= Reduced Matrix	<sup>2</sup> Loc	ation: PL =	Pore Lini	ng RC=	Root Channe	M = Matrix
dric Soil Indicators: (Applicable to a	all LRRs, unless of	herwise note	ed)	_ !	ndicators f	or Problema	tic Hydric Soils <sup>3</sup>
Histosol (A1)	Sandy	Gleyed Matr	ix (S4)		1	cm Muck (/	49) (LRR C)
Histic Epipedon (A2)	Sandy	Redox (S5)				•	(LRR B)
Black Histic (A3)	Strippe	d Matrix (S6	)		F	Reduced Vet	ric (F18)
Hydrogen Sulfide (A4)	Loamy	Mucky Mine	ral (F1)		-		Aaterials (TF2)
Stratified Layers (AG) (LRR C)	Loamy	Gleyed Matr	ix (F2)		V	egetated Sa	and/Gravel Bars
1 cm Muck (A9) (LRR D)	Deplete	ed Matrix (F3	)		C	other (Explai	n in Remarks)
Depleted Below Dark Surface (A11)	Redox I	Dark Surface	e (F6)				
Thick Dark Surface (A12)	Deplete	d Dark Surfa	ace (F7)				phytic vegetation and
Sandy Mucky Mineral (S1)	Redox	Depressions	(F8)		wetland	hydrology n	hust be present.
	Vernal	Pools (F9)					
estrictive Layer (if present): Type:	-	Depth (Inch	- (20	- Hydri	c Soil? N	)	
		Doput (mon		T I Y U I		-	
							<u></u>
Remarks NON. HYDRIC		Dopur (mor			<u> </u>		<u></u>
Remarks NON. HYDRIC					<u> </u>		
Remarks NON, HYDRIC Hydrology Vetland Indicators	50165						
Remarks NON, HYDRIC Hydrology Vetland Indicators	50165						(2 or more required
Indrology	SOILS icient)	Ist (B11)			Seconda	ry Indicators	(2 or more required (B1) (Riverine)
Remarks NON, HYDRIC Iydrology Vetland Indicators rimary Indicators (Any one indicator is suff	So 1 LS				Seconda	ry Indicators	(B1) (Riverine)
Remarks NON, HYDRIC Iydrology Vetland Indicators rimary Indicators (Any one indicator is suff Surface Water (A1)	50 1 LS (cient) Salt Cru Biotic C	ist (B11)			<u>Seconda</u>	ry Indicators Vater Marks ediment De	(B1) (Riverine) posits (B2) (Riverine
Remarks       NON       HYDRIC         lydrology         Vetland Indicators         rimary Indicators (Any one indicator is suff	icient) Salt Cru Biotic C Aquatic	ist (B11) rust (B12)	s (B13)		<u>Seconda</u>	ry Indicators Vater Marks ediment De	(B1) (Riverine) posits (B2) (Riverine s (B3) (Riverine)
Remarks       NON       HYDRIC         Iydrology       Identified to the second	SortS	ist (B11) rust (B12) Invertebrate	s (B13) dor (C1)		<u>Seconda</u> V S D	ry Indicators Vater Marks ediment De rift Deposits vrainage Pat	(B1) (Riverine) posits (B2) (Riverine s (B3) (Riverine)
Remarks       NON       HYDRIC         Hydrology       Indicators         Vetland Indicators       Indicators (Any one indicator is suff)	icient) Salt Cru Biotic C Aquatic Hydroge Oxidized	ist (B11) rust (B12) Invertebrate en Sulfide O	s (B13) dor (C1) res (C3)		<u>Seconda</u> V S D D	ry Indicators Vater Marks ediment De rift Deposits vrainage Pat	(B1) (Riverine) posits (B2) (Riverine (B3) (Riverine) terns (B10) Water Table (C2)
Remarks       NON       HYDRIC         Iydrology       Vetland Indicators         rimary Indicators (Any one indicator is suff	Salt Cru Biotic C Aquatic Hydroge Oxidized Presence	ist (B11) rust (B12) Invertebrate en Sulfide O d Rhizosphe	s (B13) dor (C1) res (C3) d Iron (C4		<u>Seconda</u> V S D D T	ry Indicators Vater Marks ediment De rift Deposits trainage Pat ry-Season	(B1) (Riverine) posits (B2) (Riverine s (B3) (Riverine) terns (B10) Nater Table (C2) urface (C7)
Remarks       NON       HYDRIC         Iydrology       Iydrology         Vetland Indicators       Indicators         rimary Indicators (Any one indicator is sufficient on the second on the seco	icient) 	st (B11) rust (B12) Invertebrate en Sulfide O d Rhizosphe e of Reduce	s (B13) dor (C1) res (C3) d Iron (C4		<u>Secondar</u> V D D T T	ry Indicators Vater Marks ediment De rift Deposits rainage Pat ry-Season V hin Muck St	(B1) (Riverine) posits (B2) (Riverine (B3) (Riverine) terns (B10) Water Table (C2) urface (C7) ows (C8)
Remarks NON, HYDRIC Hydrology Vetland Indicators rimary Indicators (Any one indicator is suff Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on	Salt Cru Salt Cru Salt Cru Biotic C Aquatic Hydroge Oxidized Presend Recent Plowed	st (B11) rust (B12) Invertebrate en Sulfide O d Rhizosphe e of Reduce Iron Reducti	s (B13) dor (C1) res (C3) d Iron (C4 on in		<u>Seconda</u> V D D D D T C	y Indicators Vater Marks ediment De rift Deposits trainage Pat ry-Season V hin Muck Su rayfish Burr	(B1) (Riverine) posits (B2) (Riverine) s (B3) (Riverine) terns (B10) Water Table (C2) urface (C7) ows (C8) sible on
Remarks NON, HYDRIC Hydrology Vetland Indicators rimary Indicators (Any one indicator is suff Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)	Salt Cru Salt Cru Salt Cru Biotic C Aquatic Hydroge Oxidized Presend Recent Plowed	est (B11) rust (B12) Invertebrate en Sulfide O d Rhizosphe e of Reduce fron Reducti Soils (C6)	s (B13) dor (C1) res (C3) d Iron (C4 on in		Seconda V S D D T T S S	y Indicators Vater Marks ediment De rift Deposits rainage Pat ry-Season V hin Muck So rayfish Burr aturation Vi	posits (B2) (Riverine s (B3) (Riverine) terns (B10) Water Table (C2) urface (C7) ows (C8) sible on ry (C9)
Remarks       NON       HYDRIC         Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is suff	Salt Cru Salt Cru Salt Cru Biotic C Aquatic Hydroge Oxidized Presend Recent Plowed	est (B11) rust (B12) Invertebrate en Sulfide O d Rhizosphe e of Reduce fron Reducti Soils (C6)	s (B13) dor (C1) res (C3) d Iron (C4 on in		<u>Seconda</u> V D 	ry Indicators Vater Marks ediment De rift Deposits rainage Pat ry-Season V hin Muck Su rayfish Burr aturation Vi verial Image	(B1) (Riverine) posits (B2) (Riverine) terns (B10) Nater Table (C2) urface (C7) ows (C8) sible-on ry (C9) tard (D3)
Remarks NON HYDRIC Hydrology Vetland Indicators rimary Indicators (Any one indicator is suff Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) ield Observations	Sor LS	ist (B11) rust (B12) Invertebrate en Sulfide O d Rhizosphe e of Reduce Iron Reducti Soils (C6) Explain in Re	s (B13) dor (C1) res (C3) d Iron (C4 on in marks)	4)	Seconda V D D D D D T C S S F	ry Indicators Vater Marks ediment De rift Deposits rainage Pat ry-Season V hin Muck Su rayfish Burr aturation Vi verial Image hallow Aqui AC-Netural	(B1) (Riverine) posits (B2) (Riverine) terns (B10) Nater Table (C2) urface (C7) ows (C8) sible on ry (C9) tard (D3) Test (D5)
Remarks       NON. HYDRIC         Hydrology         Vetland Indicators         Inimary Indicators (Any one indicator is suff	Sor LS	ist (B11) rust (B12) Invertebrate en Sulfide O d Rhizosphe e of Reduce Iron Reducti Soils (C6) Explain in Re	s (B13) dor (C1) res (C3) d Iron (C4 on in marks)	4)	Seconda V D D D D D T C S S F	y Indicators Vater Marks ediment De rift Deposits rainage Pat ry-Season V hin Muck Su rayfish Burr aturation Vi verial Image hallow Aqui	(B1) (Riverine) posits (B2) (Riverine) terns (B10) Nater Table (C2) urface (C7) ows (C8) sible on ry (C9) tard (D3) Test (D5)
Remarks NON, HYDRIC Hydrology Netland Indicators Primary Indicators (Any one indicator is suff Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Sield Observations		st (B11) rust (B12) Invertebrate en Sulfide O d Rhizosphe e of Reduce Iron Reducti Soils (C6) Explain in Re	s (B13) dor (C1) res (C3) d Iron (C4 on in marks)	4)	Seconda V D D D D D T C S S F	ry Indicators Vater Marks ediment De rift Deposits rainage Pat ry-Season V hin Muck Su rayfish Burr aturation Vi verial Image hallow Aqui AC-Netural	(B1) (Riverine) posits (B2) (Riverine) terns (B10) Nater Table (C2) urface (C7) ows (C8) sible on ry (C9) tard (D3) Test (D5)

Remarks NO WETUTNO ITIDEDIDGY INDICATORS

North State Resources				Habitat Type 62355LAND
Wetland Determination Data Form - Arid W	lest Req	ion		Wetland Type UPLAND
Project/Site:	-	8	w Marcad	
Applicant/Owner:U.S. Bureau of Reclamation			y. werded	State: CA_ Sampling Point: 18
Investigator(s):J. Colescott				
Landform (hillslope, terrace, etc.)				
Subregion (LRR) _ LRR-C Soil Map Unit Name: DAMLUIS CUM LOTM, 2.8%				
Are climatic/hydrologic conditions on the site typical for this time of year? <u>YFS</u> (If no, explain in remarks.)				
Are vegetationsoil, or hydrology significantly disturbed? Are normal circumstances present?				
Are vegetation				
Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)				
Hydrophytic vegetation? NO Hydric soil? 4F5 Wetland hydrology? 4F5 Is sampled area a wetland? NO Other waters?				
USACE Jurisdiction Adjacent to Waters Isolated (with interstate commerce) Isolated (non jurisdictional) Explain:				
Evaluation of features designated "Other Waters of the United States"				
Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad				
Natural Drainage Artificial Drainage Navigable Water				
Remarks OBVIGOS DEPOSITION TREAT FOR SEDIMENT FROM ROAD + DAM				
EROSIONS. FAILS TO MEET VEG PARAMETER AND IS NOT A				
WETUND.	VI2	c.4 1 h	10 m cre fr	
Vegetation	Absolute		Indicator	Dominance Test Worksheet
Tree Stratum (use scientific names)	% Cover	Species?	Status	Number of dominant species that are OBL, FACW, or FAC:(A)
1				
2				Total number of dominant species 3 (B)
50%= 20%= Total Cover:				a state to the state of the sta
Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	Percent of dominant species that 33 (AB)
1. Aliplex lentiformis				
2				Prevalence Index Worksheet           Total % Cover of:         Multiply by
3				OBL Speciesx1 =
4		<u></u>		FACW Species x 2 =
50%= 22,5 20%= <u>9</u> Total Cover:	45			FAC Species x3 =
Herb Stratum (use scientific names)	% Cover	Species?		FACU Species x4 =
1. Bromos diandrus	20	-YFS	UPC	
2. B. hordeacous		N	VPL VPL	Column Totals (A) (B)
3. Brassica neara 4. Bromus madri Gensis		N	UPL	Prevalance Index = B/A =
5. Centaurea solstitialia	10	N	VPL	*
6	-3-	<u> </u>	ME	Hydrophytic Vegetation Indicators Dominance Text is >50%
7				Prevalence Index is $\leq 3.0^{1}$
50%= <u>32.5</u> 20%= <u>13</u> Total Cover:	65			Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet)
Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1	14111-1011-001-001			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
2				be present.
50%= 20%= Total Cover:				Hydrophytic Vegetation?
% Bare Ground in Herb Stratum % Cover of Bio	lic Crust			

. .

#### Soils

...

(inches) Color (moist) %	Color (moist)	% Type1	Loc <sup>2</sup>	Texture		Remarks	
0-8 10483/4 100			_	SANDY	Lotm		_
							_
							_
<sup>1</sup> Types: C = Concentration D = Depletion R	M = Reduced Matrix	<sup>2</sup> Location: P	L = Pore Lir	ning RC = Roo	t Channel	M = Matrix	
Hydric Soil Indicators: (Applicable to	all LRRs, unless othe	erwise noted)		Indicators for I	Problemat	ic Hydric Soils <sup>3</sup>	
Histosol (A1)	Sandy Gl	eyed Matrix (S4)		1 cm	Muck (A	9) (LRR C)	
Histic Epipedon (A2)	Sandy Re	edox (S5)		2 cm	Muck (A	10) (LRR B)	
Black Histic (A3)	Stripped I	Matrix (S6)		Red	uced Vetr	ic (F18)	
Hydrogen Sulfide (A4)	Loamy M	ucky Mineral (F1)				aterials (TF2)	
Stratified Layers (AG) (LRR C)	Loamy Gl	leyed Matrix (F2)				nd/Gravel Bars	
1 cm Muck (A9) (LRR D)		Matrix (F3)		_X_Othe	er (Explain	in Remarks)	
Depleted Below Dark Surface (A11)		ark Surface (F6)		0			
Thick Dark Surface (A12)		Dark Surface (F7)	)			hytic vegetation and ust be present.	
Sandy Mucky Mineral (S1)		epressions (F8)		wegang nyo	nology m	ust be prosone.	
	Vernal Po	ools (F9)					
Restrictive Layer (if present): Type:	~ 0			ric Soil? YES			
Resultive Layer (in present). Type.	D	epin (inches)	пуи	TIC SOIL! ITC			
		of FLUVIA			<u> </u>		_
Remarks STRIATED SOL 40 Hydrology Wetland Indicators	o/ conces e	And the second second second second		851700		(2 or more required	_
Remarks STRIATED SOL 40 Hydrology Wetland Indicators Primary Indicators (Any one indicator is sur	fficient)	OF FLOVIA		Posi700	ndicators	(2 or more required)	
Remarks STRIATED SOL 40 Hydrology Wetland Indicators Primary Indicators (Any one indicator is sur Surface Water (A1)	fficient)	(B11)		Rosinadary In	ndicators er Marks (	(B1) (Riverine)	
Remarks 5TRIATED 56)2 42 Hydrology Wetland Indicators Primary Indicators (Any one indicator is sur Surface Water (A1) High Water Table (A2)	fficient)Salt CrustBiotic Crust	(B11) st (B12)	"L DE	Po 5 1 70 \ Secondary In Wate	ndicators er Marks ( ment Dep	(B1) (Riverine) posits (B2) (Riverine	
Remarks       5TRIATED - 56)L       44         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is surface Water (A1)	fficient)Salt CrustBiotic CrustAquatic In	(B11) st (B12) vertebrates (B13)		Po \$ 1700	ndicators er Marks ( ment Dep Deposits	B1) (Riverine) posits (B2) (Riverine (B3) (Riverine)	
Remarks       5TRIATED - 56)L       44         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sur	fficient) Salt Crust Salt Crust Aquatic In Hydrogen	(B11) st (B12) vertebrates (B13) Sulfide Odor (C1)	1 DE	Bosin 700 Secondary In Wate Sedi Drift Drain	ndicators er Marks ( ment Dep Deposits nage Patte	(B1) (Riverine) posits (B2) (Riverine (B3) (Riverine) erns (B10)	
Remarks 5TRIATED 56)2 44 Hydrology Wetland Indicators Primary Indicators (Any one indicator is sufficient of the second secon	fficient) Salt Crust Salt Crust Biotic Crust Aquatic In Hydrogen )Oxidized F	(B11) st (B12) vertebrates (B13) Sulfide Odor (C1) Rhizospheres (C3	) )	Secondary Ir Secondary Ir Wate Sedi Drift Drair	ndicators er Marks ( ment Dep Deposits nage Patte Season W	(B1) (Riverine) bosits (B2) (Riverine (B3) (Riverine) erns (B10) Vater Table (C2)	
Remarks 5TRIATED 56)2 44 Hydrology Wetland Indicators Primary Indicators (Any one indicator is sur 	fficient) Salt Crust Salt Crust Aquatic In Aquatic In Hydrogen )Oxidized F Presence	(B11) st (B12) vertebrates (B13) Sulfide Odor (C1) Rhizospheres (C3) of Reduced Iron (	) )	Bes \$ 1700           Secondary In          Wate          Wate          Urift          Drift          Dry-3          Thin	ndicators er Marks ( ment Dep Deposits nage Patto Season W Muck Su	(B1) (Riverine) posits (B2) (Riverine) (B3) (Riverine) erns (B10) vater Table (C2) rface (C7)	
Remarks       5TRIATED - 56)L       44         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is surface Water (A1)	fficient) Salt Crust Salt Crust Biotic Crust Aquatic In Hydrogen )Oxidized F Presence Recent Iro	(B11) st (B12) vertebrates (B13) Sulfide Odor (C1) Rhizospheres (C3) of Reduced Iron ( on Reduction in	) )	Becondary In Secondary In Wate Sedi Drift Drain Dry-5 Cray	ndicators er Marks ( ment Dep Deposits nage Patte Season W Muck Sur	(B1) (Riverine) posits (B2) (Riverine (B3) (Riverine) erns (B10) Vater Table (C2) rface (C7) pws (C8)	
Remarks 5TRIATED 56)2 44 Hydrology Wetland Indicators Primary Indicators (Any one indicator is sur 	fficient)  fficient)	(B11) st (B12) vertebrates (B13) Sulfide Odor (C1) Rhizospheres (C3) of Reduced Iron ( on Reduction in	) )	Becondary In Secondary In Wate Bedi Drift Drift Drain Dry-S Cray Satu	ndicators er Marks ( ment Dep Deposits nage Patto Season W Muck Su	(B1) (Riverine) posits (B2) (Riverine) (B3) (Riverine) erns (B10) Vater Table (C2) rface (C7) pws (C8) ible-on	
Remarks       5TRIATED - 56)L       44         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is surface Water (A1)	fficient)  fficient)	(B11) st (B12) vertebrates (B13) Sulfide Odor (C1) Rhizospheres (C3 of Reduced Iron ( on Reduction in oils (C6)	) )	Bes s r 70m International Internatione International International International International Inter	ndicators er Marks ( ment Dep Deposits nage Patt Season W Muck Surro ration Vis	(B1) (Riverine) posits (B2) (Riverine) (B3) (Riverine) erns (B10) vater Table (C2) rface (C7) pws (C8) ible-on y (C9)	
Remarks       5TRIATED - 56)L       44         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is surface Water (A1)	fficient)  fficient)	(B11) st (B12) vertebrates (B13) Sulfide Odor (C1) Rhizospheres (C3 of Reduced Iron ( on Reduction in oils (C6)	) )	Bessi770A	ndicators er Marks ( ment Dep Deposits nage Patte Season W Muck Sur fish Burro ration Vis al Imager	(B1) (Riverine) posits (B2) (Riverine) (B3) (Riverine) erns (B10) Vater Table (C2) rface (C7) pws (C8) ible-on y (C9) ard (D3)	
Remarks       STRIATED - SOL       44         Hydrology       Wetland Indicators         Primary Indicators (Any one indicator is surface Water (A1)	fficient)  fficient)  fficient)  fficient)  fficient)  Salt Crust Biotic Crust Aquatic In Aquatic In Aquatic In Oxidized F Presence Recent Iro Plowed Si Other (Exp	(B11) st (B12) vertebrates (B13) Sulfide Odor (C1) Rhizospheres (C3 of Reduced Iron ( on Reduction in oils (C6) plain in Remarks)	( ) (C4)	Bessin Toring Secondary II Wate Sedi Drift Dry-1 Dry-1 Dry-1 Dry-1 Dry-1 Cray Satu Shall Shall FAC	ndicators er Marks ( ment Dep Deposits nage Patt Season W Muck Sur fish Burro ration Vis al Imager low Aquit	(B1) (Riverine) posits (B2) (Riverine) (B3) (Riverine) erns (B10) Vater Table (C2) rface (C7) pws (C8) ible-on y (C9) ard (D3) Fest (D5)	
Remarks       5TRIATED - 56)L       44         Hydrology       Wetland Indicators         Primary Indicators (Any one indicator is surface Water (A1)	fficient)	F FLOVIA (B11) st (B12) vertebrates (B13) Sulfide Odor (C1) Rhizospheres (C3 of Reduced Iron ( on Reduction in oils (C6) plain in Remarks)	( ) (C4)	Bessi770A	ndicators er Marks ( ment Dep Deposits nage Patt Season W Muck Sur fish Burro ration Vis al Imager low Aquit	(B1) (Riverine) posits (B2) (Riverine) (B3) (Riverine) erns (B10) Vater Table (C2) rface (C7) pws (C8) ible-on y (C9) ard (D3) Fest (D5)	
Remarks       STRIATED - SOL       44         Hydrology       Wetland Indicators         Primary Indicators (Any one indicator is surface Water (A1)       1	fficient) Salt Crust Biotic Crust Aquatic In Aquatic In A	(B11) st (B12) vertebrates (B13) Sulfide Odor (C1) Rhizospheres (C3 of Reduced Iron ( on Reduction in oils (C6) blain in Remarks)	(L D E	Secondary In         Secondary In         Wate         Sedi         Drift         Drift         Dry-3         Thin         Cray         Satu         Aeri         Shall         FAC	ndicators er Marks ( ment Dep Deposits nage Patt Season W Muck Sur fish Burro ration Vis al Imager low Aquit	(B1) (Riverine) posits (B2) (Riverine) (B3) (Riverine) erns (B10) Vater Table (C2) rface (C7) pws (C8) ible-on y (C9) ard (D3) Fest (D5)	
Remarks       5TRIATED - 56)L       44         Hydrology       Wetland Indicators         Primary Indicators (Any one indicator is surface Water (A1)	fficient) Salt Crust Biotic Crust Aquatic In Aquatic In 	©F FLOVIA (B11) st (B12) vertebrates (B13) Sulfide Odor (C1) Rhizospheres (C3 of Reduced Iron ( on Reduction in oils (C6) plain in Remarks)	C DE	Rossi7700	ndicators er Marks ( ment Dep Deposits nage Path Season W Muck Sur fish Burro ration Vis al Imager low Aquit Netural T s X N	(B1) (Riverine) posits (B2) (Riverine) (B3) (Riverine) erns (B10) Vater Table (C2) rface (C7) pws (C8) ible-on y (C9) ard (D3) Fest (D5)	

Wotland Determination Data Form Arid M	lost Dar	vion		Habitat Type GRASSLAND Wetland Type GRASSNAL WTLD
Wetland Determination Data Form - Arid W Project/Site:Sisk Dam Corrective Action Project			ty: <u>Merceo</u>	County Sampling Date: 9/2/09
Applicant/Owner: <u>U.S. Bureau of Reclamation</u> Investigator(s): <u>J. Colescott</u>				State: <u>CA</u> Sampling Point: <u>17</u>
Landform (hillslope, terrace, etc.) <u>LINEAR</u>	115510 Sc	⊷ Local re bil Map Unit	lief (concave Name:X	ero Elurents, Extremely GRAVELLY
Are climatic/hydrologic conditions on the site typical for this t Are vegetation $\underline{N}_{}$ , soil $\underline{N}_{}$ , or hydrology $\underline{N}_{}$ signifi	ime of year	? YES	(If no, explai	in in remarks.)
Are vegetation $\underline{P}$ , soil $\underline{P}$ , or hydrology $\underline{P}$ as a significant of hydrology $\underline{P}$ natural for hydrology $\underline{P}$ natural f				
Summary of Findings (Attach site map showing Hydrophytic vegetation? YES Hydric soil? YES Wet				
USACE Jurisdiction Adjacent to Waters Tributary to Waters Isolate Explain:	ed (with inte	erstate comr	nerce)	_ Isolated (non jurisdictional)
Evaluation of features designated "Ot Indicators: Defined bed and bank Scour Feature Designation: Perennial Intermittent E Natural Drainage Artificial Drain	Ordir phemeral	nary High W Blue-li	ater Mark M ne on USGS	apped
Remarks DEPRESSIONAL ARE FRED BY SEERS TO	it 11	N MI	DDLE	of THE MEADOW.
FRD BY SEEPS TO CHADDELS TO NOIETH. (C	sou te Hadde	t. Di	RAINS EBRA	VIA EROSIONAL DEJ, NAEROW (21'), VEGETATED ) UPL GRASS
Vegetation Tree Stratum (use scientific names)	Absolute % Cover		t Indicator Status	Dominance Test Worksheet           Number of dominant species           that are OBL, FACW, or FAC:
2				Total number of dominant species (B)
50%= 20%= Total Cover: Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	Percent of dominant species that _/60_ (AB) are OBL, FACW, or FAC:
1				Prevalence Index Worksheet Total % Cover of: Multiply by
3				OBL Species         x1 =           FACW Species         x2 =
50%= 20%= Total Cover:	100 C	0	0	FAC Species x3 =
Herb Stratum (use scientific names) 1. Usrdeum Jeporinum	% Cover 85	Species? Y	FAC_	FACU Species x4=
2. GRINdellia camporum	10	10	FACLE	UPL Species x 5 = Column Totals (A) (B)
3. Croton setigerus	_5_	N	UPL	Column Totals (A) (B) Prevalance Index = B/A =
4 5				Hydrophytic Vegetation Indicators
6				Dominance Text is >50%
7				Morphological Adaptations <sup>1</sup> (provide supporting
50%= 20%= Total Cover: Woody/Vine Stratum (use scientific names)		Species?	Status	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1	10 00101			<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.
2				
50%= 20%= Total Cover:	22-12-12-12-12-12-12-12-12-12-12-12-12-1			Hydrophytic Vegetation? 455
% Bare Ground in Herb Stratum % Cover of Bio	ic Crust _	15		

S	0	i	I	s
_	-	-	-	-

Depth <u>Matrix</u> (inches) Color (moist) <u>%</u>	Redox Feature Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
-12 7.54R 4/4 80	2.54 4/2	a	D	M	1, RAVELLY	ALC: NOT THE REAL PROPERTY OF
	<i></i>					•
		-	·			
Types: C = Concentration D = Depletion	RM = Reduced Matrix	2	Location: PL =	Pore Lin	ing RC = Root C	hannel M = Matrix
ydric Soil Indicators: (Applicable	to all LRRs, unless o	therwise r	noted)		Indicators for Pro	blematic Hydric Soils <sup>3</sup>
Histosol (A1)	Sandy	Gleyed N	fatrix (S4)		1 cm M	luck (A9) (LRR C)
Histic Epipedon (A2)	Sandy	Redox (S	5)		2 cm M	luck (A10) (LRR B)
Black Histic (A3)	· Strippe	ed Matrix (	(S6)		Reduce	ed Vetric (F18)
Hydrogen Sulfide (A4)	Loamy	/ Mucky M	lineral (F1)		Red Pa	arent Materials (TF2)
Stratified Layers (AG) (LRR C)	Loamy	Gleyed N	Aatrix (F2)		Vegeta	ted Sand/Gravel Bars
1 cm Muck (A9) (LRR D)	Deplet	ed Matrix	(F3)		Other (	Explain in Remarks)
Depleted Below Dark Surface (A1	1) Redox	Dark Sur	face (F6)		<b>2</b> 31 961 54 535	8 10 10 10 10 10 10 10 10 10 10 10 10 10
Thick Dark Surface (A12)			Surface (F7)			hydrophytic vegetation and
Sandy Mucky Mineral (S1)	_X Redox	Depressi	ons (F8)		wetland hydro	logy must be present.
	Vernal	Pools (F9	9)	2		
Remarks REDOX FEAIUR	-		nches) JACE D	_ Hydr	ic Soil? <u>485</u>	
Remarks REDOX FEADOR Hydrology Wetland Indicators				_ Hydr		cators (2 or more required)
Hydrology Wetland Indicators Primary Indicators (Any one indicator is s	sufficient)	Pronce 		_ Hydr	Secondary Indi	cators (2 or more required)
Remarks REDOX FEADLR Hydrology Wetland Indicators Primary Indicators (Any one indicator is s 	sufficient) Salt Cr	PR. 6 NOA	3.00€€2.	_ Hydr	Secondary Indi	Marks (B1) (Riverine)
Remarks REDOX FEARING Hydrology Netland Indicators Primary Indicators (Any one indicator is s Surface Water (A1) High Water Table (A2)	sufficient) Salt Cr X_Biotic C	PR_® NOA ust (B11) Crust (B12	))) ))	_ Hydr	Secondary Indi	Marks (B1) (Riverine) ent Deposits (B2) (Riverine)
Remarks REDOX FEADOR Hydrology Wetland Indicators Primary Indicators (Any one indicator is s Surface Water (A1) High Water Table (A2) Saturation (A3)	sufficient) Salt Cr Biotic C Aquatio	PR_® NOA ust (B11) Crust (B12 c Invertebr	2) () (B13)	_ Hydr	Secondary IndiWater ISedimeDrift De	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine)
Remarks REDOX FEADOR Hydrology Wetland Indicators Primary Indicators (Any one indicator is s Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine)	Sufficient) Salt Cr Biotic C Aquatic Hydrog	Ust (B11) Crust (B12) Crust (B12 c Invertebr	2) rates (B13) e Odor (C1)	_ Hydr	Secondary Indi	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10)
Remarks REDOX FEADOR Hydrology Wetland Indicators Primary Indicators (Any one indicator is s Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine)	sufficient) Salt Cr Biotic C Aquatic Hydrog ne)X_Oxidize	Ust (B11) Crust (B12 c Invertebr gen Sulfide ed Rhizosp	2) rates (B13) e Odor (C1) pheres (C3)		Secondary Indi	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2)
Remarks REDOX FEADOR Hydrology Wetland Indicators Primary Indicators (Any one indicator is s Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6)	sufficient) Salt Cr Biotic C Aquatic Hydrog Hydrog Presen	ust (B11) Crust (B12) Crust (B12 c Invertebr gen Sulfide ed Rhizosp ace of Red	2) rates (B13) e Odor (C1) pheres (C3) fuced Iron (C4		Secondary Indi	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7)
Remarks REDOX FEADOR Hydrology Wetland Indicators Primary Indicators (Any one indicator is s Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverin	sufficient) Salt Cr Biotic C Aquatio Hydrog me)Coxidize Presen Recent	Ust (B11) Crust (B12 c Invertebr gen Sulfide ed Rhizosp	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C4 uction in		Secondary Indi	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8)
Remarks REDOX FEADOR Hydrology Wetland Indicators Primary Indicators (Any one indicator is s Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on	sufficient) Salt Cr Biotic C Aquatic Hydrog ne)X_Oxidize Presen Recent Plower	PR & NOA ust (B11) Crust (B12 c Invertebr gen Sulfide ed Rhizosp ace of Red t Iron Red d Soils (Cf	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C4 uction in		Secondary Indi Water I Sedime Drift De Dry-Se Thin M Crayfis Saturat	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7)
Remarks       REDOX       FEADOR         Hydrology         Netland Indicators         Primary Indicators (Any one indicator is s         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonriverine)         Sediment Deposits (B2) (Nonriverine)         Surface Soil Cracks (B6)         Inundation Visible on         Aerial Imagery (B7)	sufficient) Salt Cr Biotic C Aquatic Hydrog ne)X_Oxidize Presen Recent Plower	PR & NOA ust (B11) Crust (B12 c Invertebr gen Sulfide ed Rhizosp ace of Red t Iron Red d Soils (Cf	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C4 uction in 6)		Secondary Indi	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) tion Visible on
Remarks       REDOX       FEADOR         Hydrology         Vetland Indicators         Primary Indicators (Any one indicator is s         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonriverine)         Sediment Deposits (B2) (Nonriverine)         Surface Soil Cracks (B6)         Inundation Visible on         Aerial Imagery (B7)	sufficient) Salt Cr Biotic C Aquatic Hydrog ne)X_Oxidize Presen Recent Plower	PR & NOA ust (B11) Crust (B12 c Invertebr gen Sulfide ed Rhizosp ace of Red t Iron Red d Soils (Cf	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C4 uction in 6)		Secondary Indi Water I Sedime Drift De Dry-Se Thin M Crayfis Saturat Aerial Shallov	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) tion Visible on Imagery (C9)
Remarks REDOX FEADOR Hydrology Wetland Indicators Primary Indicators (Any one indicator is s Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	sufficient) Salt Cr Biotic C Aquatic Hydrog ne)X_Oxidize Presen Recent Plower	PR & NOA ust (B11) Crust (B12 c Invertebr gen Sulfide ed Rhizosp ace of Red t Iron Red d Soils (Cf	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C4 uction in 6) Remarks)	<b>(</b> )	Secondary IndiWater ISedimeDrift DeDrainagDry-SeThin MCrayfisSaturat AerialShallovFAC-Ne	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) tion Visible on Imagery (C9) v Aquitard (D3) etural Test (D5)
Remarks       REDOX       FEADOR         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is s         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonriverine)         Sediment Deposits (B2) (Nonriverine)         Surface Soil Cracks (B6)         Inundation Visible on         Aerial Imagery (B7)         Water-Stained Leaves (B9)	sufficient) Salt Cr Salt Cr Aquation Aquation Hydrog Present Plower Other ( Depth (incher	ust (B11) Crust (B12) Crust (B12 c Invertebr gen Sulfide ed Rhizosp ice of Red t Iron Redu d Soils (Ct Explain in	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C4 uction in 6) Remarks)	<b>(</b> )	Secondary Indi Water I Sedime Drift De Dry-Se Thin M Crayfis Saturat Aerial Shallov	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) tion Visible on Imagery (C9) v Aquitard (D3) etural Test (D5)
Remarks       REDOX       FEADOR         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is s         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonriverine)         Sediment Deposits (B2) (Nonriverine)         Surface Soil Cracks (B6)         Inundation Visible on         Aerial Imagery (B7)         Water-Stained Leaves (B9)	sufficient) Salt Cr Salt Cr Salt Cr Aquation Hydrog Ne) X Oxidize Present Plower Other ( Depth (incher L	PR_® NOA	2) rates (B13) e Odor (C1) pheres (C3) uced Iron (C4 uction in 6) Remarks)	<b>(</b> )	Secondary Indi Water I Sedime Drift De Drainae Dry-Se Thin M Crayfis Saturat Aerial Shallov FAC-Ne Hydrology? Yes	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) tion Visible on Imagery (C9) v Aquitard (D3) etural Test (D5)

Remarks WEILAND ITTDROLDGY PRESENT.

North State Resources				Habitat Type	GRASSLAND
Wetland Determination Data Form - Arid W	/est Reg	ion			UPLAND
Project/Site:Sisk Dam Corrective Action Project		City/Count	v. Merced	County	
Applicant/Owner:U.S. Bureau of Reclamation		, on frood	<u></u>	State: CA	
Investigator(s):J. Colescott					
Landform (hillslope, terrace, etc.) LINEAR DEPR	5.55101	Local re	ief (concave,	convex, none)	AVR Slope % 0-2
Subregion (LRR) LRR-C	So	il Map Unit i	Name: Xe	roflurents, E	XT. GREVELLY
Are climatic/hydrologic conditions on the site typical for this t	ime of year	? 4F5	(If no, explain	n in remarks.)	
Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u> signific	cantly distur	rbed? Are n	ormal circum	nstances present? 4£5	<u> </u>
Are vegetation, soil, or hydrology natura	illy problem:	atic? (If ne	eded, explair	any answers in Remarks.	)
Summary of Findings (Attach site map showing	sampling p	oint location	s, transects,	important features, etc.)	
Hydrophytic vegetation? <u>NO</u> Hydric soil? <u>YF-5</u> Wet					Other waters? NO
USACE Jurisdiction					
Adjacent to Waters Isolate	ed (with inte	erstate comn	nerce)	Isolated (non jurisdiction	al)
Evaluation of features designated "Ot					
Indicators: Defined bed and bank Scour_	Ordin	hary High W	ater Mark Ma	apped	
Feature Designation: Perennial Intermittent En Natural Drainage Artificial Drain					
Remarks UPLAND PAR TO #					= WATER ID
SOILS LIKELY SUPPORTS THE		CALIFA	Prin	CELDIDE	IN THIS
UPLAND SIDE OF THE TRANS	TIONA	- KBE D	RELL	K FRANCES	NOT LIFT
		- M	3/10/1 -	VILLE & 11 (DEC	mes part.
Vegetation	Absolute		Indicator	Dominance Test Work Number of dominant sp	
Tree Stratum (use scientific names)	% Cover	Species?	<u>Status</u>	that are OBL, FACW, or	
2				Total number of domina	ant species
3.				across all strata:	(B)
50%= 20%= Total Cover:				Percent of dominant sp	ecies that
Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	are OBL, FACW, or FAC	
1				Prevalence Index Wor	ksheet
2				Total % Cover of:	Multiply by
3				OBL Species	x1=
I				FACW Species	x 2 =
50%= 20%= Total Cover:		0	01-11-2	FAC Species	x 3 =
Herb Stratum (use scientific names) 1. Hardeum / PAOrinum	% Cover	Species?	Status FAC	FACU Species	x 4 =
Bromes diendrus		4	VPL	UPL Species	x5=
B. Hordeacass	+	M	FACIL	Column Totals	(A) (B)
Arena fatua		1	VPL	Prevalance Index = B/A	.=
Brassica neara	5	2	JPL	Hydrophytic Vegetatic	on Indicators
Croton setigerus	5	<u>h</u>	UPL	Dominance Text	is >50%
8				Prevalence Inde	x is $\leq 3.0^{1}$ daptations <sup>1</sup> (provide supporting
50%= 20%= Total Cover:	160			data in Remarks	or on a separate sheet)
Voody/Vine Stratum (use scientific names)	% Cover	Species?	Status	Problematic Hyd	rophytic Vegetation <sup>1</sup> (Explain) I and wetland hydrology must
				be present.	and notation francingy must
				•	SUN SUN
		-	-	nyurophyuc vegetatic	- <u></u>
					42

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{<sup>4</sup>.

Soils

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$\frac{(\text{inches})}{5-12}  \frac{\text{Color}(\text{moist})}{7.57R}  \frac{\%}{4}  \frac{\%}{80}  \frac{\text{Color}(\text{moist})}{2.57}  \frac{\%}{42}  \frac{7}{20}  D  W$	oc <sup>2</sup> <u>Texture</u> <u>Remarks</u>
	4 G.R. CUM LOAM
Types:       C = Concentration D = Depletion RM = Reduced Matrix <sup>2</sup> Location: PL = Pc         Hydric Soil Indicators:       (Applicable to all LRRs, unless otherwise noted)        Histosol (A1)      Sandy Gleyed Matrix (S4)        Histic Epipedon (A2)      Sandy Redox (S5)        Black Histic (A3)      Stripped Matrix (S6)        Hydrogen Sulfide (A4)      Loamy Mucky Mineral (F1)        Stratified Layers (AG) (LRR C)      Loamy Gleyed Matrix (F2)        1 cm Muck (A9) (LRR D)      Depleted Matrix (F3)        Depleted Below Dark Surface (A11)      Redox Dark Surface (F6)        Thick Dark Surface (A12)      Depleted Dark Surface (F7)        Sandy Mucky Mineral (S1)      X Redox Depressions (F8)	ore Lining RC = Root Channel M = Matrix Indicators for Problematic Hydric Soils <sup>3</sup> 1 cm Muck (A9) (LRR C) 2 cm Muck (A10) (LRR B) Reduced Vetric (F18) Red Parent Materials (TF2) Vegetated Sand/Gravel Bars Other (Explain in Remarks) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present.
Remarks SAME SOILS AS DP 19 - HYDEIC Hydrology Vetland Indicators	Hydric Soil? <u>465</u>
Primary Indicators (Any one indicator is sufficient)	Secondary Indicators (2 or more required
Surface Water (A1)      Salt Crust (B11)        High Water Table (A2)      Biotic Crust (B12)        Saturation (A3)      Aquatic Invertebrates (B13)        Water Marks (B1) (Nonriverine)      Aquatic Invertebrates (B13)        Sediment Deposits (B2) (Nonriverine)      Oxidized Rhizospheres (C3)        Surface Soil Cracks (B6)      Presence of Reduced Iron (C4)        Inundation Visible on      Recent Iron Reduction in        Aerial Imagery (B7)       Plowed Soils (C6)        Water-Stained Leaves (B9)      Other (Explain in Remarks)	Water Marks (B1) (Riverine)         Sediment Deposits (B2) (Riverine)         Drift Deposits (B3) (Riverine)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Thin Muck Surface (C7)         Crayfish Burrows (C8)         Saturation Visible on         Aerial Imagery (C9)         Shallow Aquitard (D3)
	FAC-Netural Test (D5)
Field Observations	
Field Observations	FAC-Netural Test (D5)

Remarks NO WETTAND HYDEOLOGY INDICATORS.

North State Resources				Habitat Type MEDOW
Wetland Determination Data Form - Arid W	est Reg	ion		Wetland Type SEASONAL WILD
Project/Site:Sisk Dam Corrective Action Project		City/Count	y: <u>Merced</u>	
Applicant/Owner:U.S. Bureau of Reclamation				State: <u>CA</u> Sampling Point: <u>21</u>
Investigator(s):J. Colescott				-
Landform (hillslope, terrace, etc.)		_ Local rel	ief (concave,	convex, none) CONCAVE_Slope % 0-2
Subregion (LRR) LRR-C	Soi	il Map Unit I	Name: Xel	of luvents, Extremely Conturning
Are climatic/hydrologic conditions on the site typical for this ti				
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ signific	antly distur	bed? Are n	ormal circum	stances present?
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ signific Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natura	lly problema	atic? (If nee	eded, explain	any answers in Remarks.)
Summary of Findings (Attach site map showing	sampling po	oint location	s, transects,	important features, etc.)
Hydrophytic vegetation? YES Hydric soil? YES Wet	and hydrolo	gy?. YES	Is sampled	area a wetland? 16-5 Other waters? NO
USACE Jurisdiction Adjacent to Waters X Tributary to Waters X Isolate Explain:	d (with inte	rstate comm	ierce)	Isolated (non jurisdictional)
Evaluation of features designated "Oti	hor Wat	ore of t	ho Unito	d States"
Indicators: Defined bed and bank Scour				
Feature Designation: Perennial Intermittent Ep	hemeral	Blue-lin	e on USGS	Quad
Natural Drainage Artificial Drain	age	Navigable	Nater	
Remarks		<b>A</b>	-	Plan Drukel
WETUPD SIDE OF BOO	SNURK	29 F	ROM	of this is with
<u>k'</u>				
Vegetation	Absolute		Indicator	Dominance Test Worksheet
Tree Stratum (use scientific names)	% Cover	Species?		Number of dominant species 4 (A)
	10	_ <u>4</u> =7	FACW	
2				Total number of dominant species 4 (B)
50%= 20%= Total Cover:	10			Descent of deminent appoint that
Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	Percent of dominant species that are OBL, FACW, or FAC:(6) (AB)
1	1999 (Sec. 1997) - 10.			Prevalence Index Worksheet
2				Total % Cover of: Multiply by
3				OBL Species x1=
4				FACW Species x2=
Herb Stratum (use scientific names)	% Cover	Species?	Status	FAC Species X3 =
	50	Y	FACW	FACU Species ×4 =
2. Tupha latifolia		Ý	OBL	UPL Species x 5 =
3. Hordium leporinom		Y	FAC	Column Topals (A) (B)
4. Grindelia camporum		N	FACU	Prevalance Index = B/A =
5				Hydrophytic Vegetation Indicators
6				Dominance Text is >50%
7		·		Prevalence Index is ≤ 3.0 <sup>1</sup> Morphological Adaptations <sup>1</sup> (provide supporting
50%= 20%= Total Cover:				data in Remarks or on a separate sheet)
Woody/Vine Stratum (use scientific names)		Species?	Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.
2				
50%= Total Cover:			-	Hydrophytic Vegetation? <u>YES</u>
% Bare Ground in Herb Stratum % Cover of Biot	ic Crust		1	

### Soils

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Depth <u>Matrix</u>							
inches) Color (moist)	<u>%</u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
-6 104R4/3	85	7.5484/6	15	C	M	GRAUFEUY	LOMM
					. <u> </u>		
ypes: C = Concentration D = D	epletion F	RM = Reduced Matrix	2	Location: PL	= Pore Lin	ing RC = Root	Channel M = Matrix
ydric Soil Indicators: (A	pplicable t	o all LRRs, unless of	therwise r	noted)		Indicators for Pr	oblematic Hydric Soils <sup>3</sup>
Histosol (A1)		Sandy	Gleyed M	latrix (S4)		1 cm	Muck (A9) (LRR C)
Histic Epipedon (A2)		Sandy	Redox (S	5)		2 cm	Muck (A10) (LRR B)
Black Histic (A3)		Strippe	d Matrix (	S6)		Reduc	ced Vetric (F18)
Hydrogen Sulfide (A4)		Loamy	Mucky M	ineral (F1)			Parent Materials (TF2)
Stratified Layers (AG) (I	LRR C)	Loamy	Gleyed N	latrix (F2)		20	ated Sand/Gravel Bars
1 cm Muck (A9) (LRR D	))	Deplete	ed Matrix	(F3)		Other	(Explain in Remarks)
Depleted Below Dark St	urface (A1	1) Redox	Dark Surf	ace (F6)			
Thick Dark Surface (A1)	2)	1-		urface (F7)			f hydrophytic vegetation and
Sandy Mucky Mineral (S	51)	Redox	Depressio	ons (F8)		wetland hydr	ology must be present.
		Vernal	Pools (F9	)			
			Depth (In	iches)	_ Hydr	ic Soil?	
Remarks HYDRIC Hydrology Vetland Indicators	50125		Depth (In	iches)	Hydr		licators (2 or more required)
Remarks HYDRIC Hydrology Netland Indicators	50125		Depth (In	iches)	Hydr		licators (2 or more required)
Remarks HYDRIC Hydrology Vetland Indicators Primary Indicators (Any one ind Surface Water (A1)	50125	ufficient) Salt Cru	ust (B11)		Hydr	Secondary Inc	Marks (B1) (Riverine)
Remarks HYDRIC Hydrology Vetland Indicators rimary Indicators (Any one ind Surface Water (A1) High Water Table (A2)	50125	ufficient) Salt Cru			Hydr	Secondary Inc	Marks (B1) (Riverine) ent Deposits (B2) (Riverine)
Remarks HYDRIC Hydrology Vetland Indicators rimary Indicators (Any one ind Surface Water (A1) High Water Table (A2) Saturation (A3)	Sorts	ufficient) Salt Cru Salt Cru	ıst (B11) rust (B12)		Hydr	Secondary Inc Water Sedim Drift D	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine)
Remarks (HYDRIC Hydrology Vetland Indicators rimary Indicators (Any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriv	Sares	ufficient) Salt Cru Biotic C Aquatic Hydroge	ıst (B11) rust (B12) Invertebra	) ates (B13) Odor (C1)	Hydr	Secondary Inc Water Sedim Drift D Draina	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) age Patterns (B10)
Remarks HYDRIC Hydrology Vetland Indicators rimary Indicators (Any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriv Sediment Deposits (B2)	Sorts	ufficient) Salt Cru Biotic C Aquatic Hydroge e)X_ Oxidized	ust (B11) rust (B12) Invertebri en Sulfide d Rhizosp	) ates (B13) Odor (C1) hheres (C3)		Secondary Inc Water Sedim Drift D Draina Dry-Se	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2)
Remarks (HYDRIC Hydrology Vetland Indicators rimary Indicators (Any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriv Sediment Deposits (B2) Surface Soil Cracks (B6)	Sorts	ufficient) Salt Cru Biotic C Aquatic Hydroge e) Oxidized Presence	ust (B11) rust (B12) Invertebra en Sulfide d Rhizosp æ of Redu	) ates (B13) Odor (C1) sheres (C3) uced Iron (C		Secondary Inc Water Sedim Drift D Draina Dry-Se Thin M	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) fuck Surface (C7)
Remarks HYDRIC Hydrology Vetland Indicators rimary Indicators (Any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriv Sediment Deposits (B2) Surface Soil Cracks (B6) Inundation Visible on	Sorts	ufficient) Salt Cru Biotic C Aquatic Hydroge e)X Oxidized Presend Recent	ust (B11) rust (B12) Invertebra en Sulfide d Rhizosp ce of Redu Iron Redu	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in		Secondary Inc Water Sedim Drift D Draina Dry-Se Thin M Crayfi	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) fluck Surface (C7) sh Burrows (C8)
Remarks (HYDRIC Hydrology Vetland Indicators Primary Indicators (Any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Noniv Sediment Deposits (B2) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)	Sares	ufficient) Salt Cru Biotic C Aquatic Hydroge e) Oxidized Presend Recent Plowed	ust (B11) rust (B12) Invertebri en Sulfide d Rhizosp te of Redu Iron Redu Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in i)		Secondary Inc Water Sedim Drift D Draina Dry-Se Thin M Crayfis Satura	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) Muck Surface (C7) sh Burrows (C8) ation Visible on
Remarks (HQDRIC Hydrology Vetland Indicators rimary Indicators (Any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriv Sediment Deposits (B2) Surface Soil Cracks (B6) Inundation Visible on	Sares	ufficient) Salt Cru Biotic C Aquatic Hydroge e) Oxidized Presend Recent Plowed	ust (B11) rust (B12) Invertebri en Sulfide d Rhizosp te of Redu Iron Redu Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in		Secondary Inc Water Sedim Drift D Draina Dry-Se Thin M Crayfia Satura Aerial	Marks (B1) (Riverine) eent Deposits (B2) (Riverine) eeposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) Muck Surface (C7) sh Burrows (C8) ation-Visible on Imagery (C9)
Remarks (HYDRIC Hydrology Vetland Indicators Primary Indicators (Any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Noniv Sediment Deposits (B2) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)	Sares	ufficient) Salt Cru Biotic C Aquatic Hydroge e) Oxidized Presend Recent Plowed	ust (B11) rust (B12) Invertebri en Sulfide d Rhizosp te of Redu Iron Redu Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in i)		Secondary Inc Water Sedim Drift D Draina Dry-Se Thin M Crayfis Satura Aerial Shallo	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) fluck Surface (C7) sh Burrows (C8) ation-Visible on Imagery (C9) w Aquitard (D3)
Remarks (HQDRIC Hydrology Netland Indicators Primary Indicators (Any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriv Sediment Deposits (B2) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (E	Sares	ufficient) Salt Cru Biotic C Aquatic Hydroge e) Oxidized Presend Recent Plowed	ust (B11) rust (B12) Invertebri en Sulfide d Rhizosp te of Redu Iron Redu Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in i)		Secondary Inc Water Sedim Drift D Draina Dry-Se Thin M Crayfis Satura Aerial Shallo	Marks (B1) (Riverine) eent Deposits (B2) (Riverine) eeposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) Muck Surface (C7) sh Burrows (C8) ation-Visible on Imagery (C9)
Remarks (HQD&IC) Hydrology Netland Indicators Primary Indicators (Any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Noniv Sediment Deposits (B2) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (E Field Observations	Sares	ufficient) Salt Cru Biotic C Aquatic Hydroge e)X Oxidized Presence Recent Plowed Other (E	ust (B11) rust (B12) Invertebra en Sulfide d Rhizosp ze of Redu Iron Redu Soils (C6 Explain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in i)	24)	Secondary Inc Water Sedim Drift D Draina Dry-Se Thin M Crayfis Satura Aerial Shallo	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) fluck Surface (C7) sh Burrows (C8) ation-Visible on Imagery (C9) w Aquitard (D3) letural Test (D5)
Hydrology Wetland Indicators Primary Indicators (Any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriv Sediment Deposits (B2) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (E	Sares	ufficient) Salt Cru Biotic C Aquatic Hydroge e) Oxidized Presend Recent Plowed Other (E	ust (B11) rust (B12) Invertebra en Sulfide d Rhizosp ce of Redu Iron Redu Soils (C6 Explain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in i)	24)	Secondary Inc Water Sedim Drift D Draina Dry-Se Thin M Crayfis Satura Aerial Shallo X FAC-M	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) fluck Surface (C7) sh Burrows (C8) ation-Visible on Imagery (C9) w Aquitard (D3) letural Test (D5)

Wetland Determination Data Form - Arid W	last Ron	ion		Habitat Type
Project/Site:Sisk Dam Corrective Action Project		City/Count	y: <u>Mercec</u>	
Investigator(s): <u>J. Colescott</u> Landform (hillslope, terrace, etc.) <u>VAUEY</u> <u>ROTTO</u> Subregion (LRR) <u>LRR-C</u> Are climatic/hydrologic conditions on the site typical for this to Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>P</u> signific Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>P</u> natura	ime of year?	il Map Unit I ? <b>JFS</b> bed? Are n	Vame: <u>X</u> /If no, explain ormal circum	n in remarks.) Instances present? <u>YES</u>
Summary of Findings (Attach site map showing Hydrophytic vegetation? <u>JND</u> Hydric soil? <u>NO</u> Weth USACE Jurisdiction	sampling po and hydrolo	oint location	s, transects, Is sample	important features, etc.) d area a wetland? <u>NO</u> Other waters? <u>NO</u>
Adjacent to Waters Isolate Explain: Evaluation of features designated "Ot Indicators: Defined bed and bank Scour Feature Designation: Perennial IntermittentEF Natural Drainage Artificial Drain Remarks UPLAND FAIR TO 2	her Wat	t <b>ers of t</b> hary High Wa Blue-lir	he Unite ater Mark Mark Mark Mark	ed States" apped Quad
Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:		Species?		Dominance Test Worksheet         Number of dominant species         that are OBL, FACW, or FAC:         O         Total number of dominant species         across all strata:
Sapling/Shrub Stratum (use scientific names)  1	<u>% Cover</u>	Species?		Percent of dominant species that are OBL, FACW, or FAC:       (AB)         Prevalence Index Worksheet       (AB)         Total % Cover of:       Multiply by         OBL Species       x1 =         FACW Species       x2 =         FAC Species       x3 =         FACU Species       x4 =
2. <u>Awena fatuq</u> 3. <u>Brassica nearg</u> 4. <u>Centaurea solstitialis</u> 5 6 7 50%= 20%= Total Cover:	10 7 3 100	2	UPL VPL VPL	UPL Species $x 5 =$ Column Totats (A) (B) Prevalance Index = $B/A =$ Hydrophytic Vegetation Indicators Dominance Text is >50% Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet) Determine the index is $\leq 4.0^{11}$
Woody/Vine Stratum (use scientific names)         1.         2.         50%=         20%=         Total Cover:         % Bare Ground in Herb Stratum         % Cover of Biot			Status 	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. Hydrophytic Vegetation?

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### Soils

	itrix	e depth needed to doo Redox Features		e indicator o	r confirm	the absence of Ind	icators.
$\frac{(\text{inches})}{\mathcal{O}-\mathcal{G}} \xrightarrow{\text{Color}(n)}{\mathcal{O}+\mathcal{G}} \frac{\mathcal{O}}{\mathcal{O}+\mathcal{R}} \frac{\mathcal{O}}{\mathcal{O}}$		Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture ( RAVFILLY	Remarks Lo It M
1 cm Muck (A9	tors: <u>(Applicable</u> 3) de (A4) rs (AG) (LRR C) ) (LRR D) v Dark Surface (A face (A12) Mineral (S1)	e to all LRRs, unless of Sandy Sandy Strippe Loamy Deplete 11) Redox Deplete	herwise n Gleyed M Redox (S d Matrix ( Mucky M Gleyed M ed Matrix Dark Surf ed Dark Surf Depressio Pools (F9	latrix (S4) (5) (5) (5) (F1) (F1) (F2) (F3) (F3) (F3) (F3) (F6) (F7) (F8)		1 cm Mu2 cm MuReducedRed PareVegetateOther (E <sup>3</sup> Indicators of hy	annel M = Matrix lematic Hydric Soils <sup>3</sup> ck (A9) (LRR C) ck (A10) (LRR B) I Vetric (F18) ent Materials (TF2) ed Sand/Gravel Bars xplain in Remarks) ydrophytic vegetation and gy must be present.
Remarks UPLA Hydrology Wetland Indicator Primary Indicators (An	rs		`			Secondary Indica	ators (2 or more required)
Surface Water ( High Water Tab Saturation (A3) Water Marks (B	(A1) Ile (A2) sits (B2) (Nonriveri acks (B6) Ile on (B7)	ine) Recent Rotect	en Sulfide d Rhizosp æ of Redu Iron Redu Soils (C6	ates (B13) Odor (C1) heres (C3) uced Iron (C	4)	Sedimen Drift Dep Drainage Dry-Seas Thin Muc Crayfish Saturation Aerial Im Shallow J	arks (B1) (Riverine) t Deposits (B2) (Riverine) osits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ok Surface (C7) Burrows (C8) in Visible on hagery (C9) Aquitard (D3) ural Test (D5)
Field Observation Surface Water Present?		Depth (inche	s) s)		Wetland	Hydrology? Yes	No X

Remarks

Wetland Determination Data Form - Arid W	lest Rea	ion		Habitat Type GRASSIAND Wetland Type SEASOWAL W72D
Project/Site: Sisk Dam Corrective Action Project		City/Count	y: <u>Merced</u>	
Landform (hillslope, terrace, etc.) <u>ERPACE</u> Subregion (LRR) <u>LRR-C</u> Are climatic/hydrologic conditions on the site typical for this to Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u> signific Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u> natura	ime of year? cantly distur	il Map Unit I ? <u> </u>	Name: <u>X-e</u> (If no, explain ormal circum	n in remarks.) Instances present? MES_
Summary of Findings (Attach site map showing Hydrophytic vegetation? YES Hydric soil? YES Weth	sampling po and hydrolo	oint location	s, transects,	important features, etc.) d area a wetland? <u>Y毛ら</u> Other waters? <u>N ろ</u>
Adjacent to Waters Tributary to Waters Isolate	ed (with inte	rstate comn	nerce)	Isolated (non jurisdictional)
Evaluation of features designated "Ot         Indicators:       Defined bed and bank Scour_         Feature Designation:       Perenpial Intermittent Er         Natural Drainage Artificial Drain	Ordin phemeral nage	ary High Wa Blue-lin Navigable	ater Mark Ma ne on USGS Water	apped Quad
Remarks NO UPLAND PAYR IN (H. lepsrinum), SEE DP 20 Fo	WEN. DR UP	WEIL L. DI	1AUD 74.	ENDS - W/ HIDROPHYDES
Vegetation Tree Stratum (use scientific names) 1 2 3		Dominant Species?	Indicator Status	Dominance Test Worksheet         Number of dominant species         that are OBL, FACW, or FAC:        (A)         Total number of dominant species         across all strata:
50%= 20%= Total Cover: Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	Percent of dominant species that are OBL, FACW, or FAC: (AB)
2				Prevalence Index Worksheet         Total % Cover of:       Multiply by         OBL Species       x1 =         FACW Species       x2 =
50%= 20%= Total Cover: Herb Stratum (use scientific names) 1. <u>Hordevan le porin van</u> 2. <u>Grindelia Campervan</u> 3. <u>Lepidium latifolium</u> 4	% Cover 85 5 10		FAC	FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals(A)Prevalance/index = B/A =
5 6 7 50%= 20%= Total Cover: Woody/Vine Stratum (use scientific names)		Species?	Status	Hydrophytic Vegetation Indicators → Dominance Text is >50% → Prevalence Index is ≤ 3.0 <sup>1</sup> → Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. Hydrophytic Vegetation?

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### Soils

Depth <u>Matrix</u>		Redox Feature		Turne 1	1?	Texture Bomerke
$\frac{\text{nches}}{-10} \frac{\text{Color}(\text{moi})}{104 \text{R}^{6/2}}$		Color (moist)	35	Type <sup>1</sup>	<u>Loc²</u> M	CRAVELLY CLAY LOAM
-10 104R 4/2	67_	JUGK 10	15	<u> </u>	<u>vv</u>	quite i wij wit
CCanaantaatian					Deve Lie	ning RC = Root Channel M = Matrix
ypes: C = Concentration	Section Constant			<sup>2</sup> Location: PL =	Pore Lir	ning RC = Root Channel M = Matrix Indicators for Problematic Hydric Soils <sup>3</sup>
ydric Soil Indicato	s. (Applicable		100 <sup>770</sup> 10.05	and the second second	-	1 cm Muck (A9) (LRR C)
Histosol (A1)	101	C-CARA - A	har Bi ne	Matrix (S4)		2 cm Muck (A10) (LRR B)
Histic Epipedon (/ Black Histic (A3)	~~)	R CONCERNING STREET, STREET, ST	Redox (S			Reduced Vetric (F18)
Black Histic (AS) Hydrogen Sulfide	( \ \ \ )		ed Matrix	(So) Aineral (F1)		Red Parent Materials (TF2)
Stratified Layers (				Matrix (F2)		Vegetated Sand/Gravel Bars
1 cm Muck (A9) (I			ted Matrix			Other (Explain in Remarks)
Depleted Below D		1.000 to 1.0000 to 1.000 to 1.	Dark Sur			
Thick Dark Surfac	•			Surface (FO)		<sup>3</sup> Indicators of hydrophytic vegetation and
Sandy Mucky Min		<u> </u>	Depressi			wetland hydrology must be present.
			Pools (F			
			Depth (I	nches)	Hyd	ric Soil?
			Depth (I	nches)	_ Hyd	ric Soil? 1/25
Remarks HUDRI			Depth (I	nches)	_ Hyd	ric Soil? <u>YFES</u>
Remarks HUDR/ Hydrology Wetland Indicators	5012	5	Depth (I	nches)	Hyd	ric Soil? Secondary Indicators (2 or more required
Remarks HUDRI Hydrology Wetland Indicators	ne indicator is s	5 sufficient)			Hyd	
Remarks HUDER Hydrology Netland Indicators Primary Indicators (Any c	ne indicator is s	5 sufficient) Salt Ci	Depth (In rust (B11) Crust (B12		Hyd	Secondary Indicators (2 or more required)
Remarks HUDE/ Hydrology Wetland Indicators Primary Indicators (Any of Surface Water (Af	ne indicator is s	5 sufficient) Salt Co Biotic (	rust (B11) Crust (B12		Hyd	Secondary Indicators (2 or more required Water Marks (B1) (Riverine)
Remarks HUDE/ Hydrology Netland Indicators Primary Indicators (Any content Surface Water (An High Water Table	ne indicator is s (A2)	5 sufficient) Salt Cr Biotic Aquati	rust (B11) Crust (B12 c Inverteb	2)	Hyd	Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine)
Remarks HUDE/ Hydrology Wetland Indicators Primary Indicators (Any of Surface Water (An High Water Table Saturation (A3)	ne indicator is a (A2)	5 <u>sufficient)</u> Salt Cr Biotic Cr Aquati Hydrog	rust (B11) Crust (B12 c Inverteb gen Sulfide	2) rates (B13)	Hyd	Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine)
Remarks HUDE/ Hydrology Wetland Indicators Primary Indicators (Any of Surface Water (An High Water Table Saturation (A3) Water Marks (B1)	ne indicator is s (A2) (Nonriverine) (B2) (Nonriveri	5 <u>sufficient</u> ) <u>Salt Cr</u> Biotic Aquati <u>Hydrog</u> ne) <u>X</u> Oxidize	rust (B11) Crust (B12 c Inverteb gen Sulfide ed Rhizos	2) rates (B13) e Odor (C1)		Secondary Indicators (2 or more required —— Water Marks (B1) (Riverine) —— Sediment Deposits (B2) (Riverine —— Drift Deposits (B3) (Riverine) —— Drainage Patterns (B10)
Remarks HUDE/ Hydrology Wetland Indicators Primary Indicators (Any of Surface Water (An High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits	(Nonriverine) (B2) (Nonriverine) s (B6)	5 <u>sufficient</u> ) <u>Salt Cr</u> Biotic Aquati Aquati Hydrog ne) X Oxidiz Preser	rust (B11) Crust (B12 c Inverteb gen Sulfide ed Rhizos	2) vrates (B13) e Odor (C1) pheres (C3) duced Iron (C4		Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2)
Remarks HUDE/ Hydrology Wetland Indicators Primary Indicators (Any construction Surface Water (And High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Surface Soil Crack	(Nonriverine) (A2) ((Nonriverine) (B2) (Nonriverin s (B6) on	Sufficient) <u>Sufficient</u> Salt Cr Biotic Aquati Hydrog ne) X Oxidiz Preser Recen	rust (B11) Crust (B12 c Inverteb gen Sulfide ed Rhizos nce of Red	2) prates (B13) e Odor (C1) pheres (C3) duced Iron (C4 luction in		Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7)
Remarks HUDE/ Hydrology Wetland Indicators Primary Indicators (Any of Surface Water (An High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Surface Soil Crack Inundation Visible	(Nonriverine) (B2) (Nonriverine) s (B6) on	5 <u>sufficient</u> ) <u>     Salt Cr</u> <u>     Biotic</u> <u>    Aquati</u> <u>    Hydrog</u> ne) <u>   X</u> Oxidize <u>    Preser</u> <u>    Recen</u> Plowe	rust (B11) Crust (B12 c Inverteb gen Sulfide ed Rhizos nce of Red t Iron Red d Soils (C	2) prates (B13) e Odor (C1) pheres (C3) duced Iron (C4 luction in		Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation-Visible-on Aerial Imagery (C9)
Remarks HUDE/ Hydrology Wetland Indicators Primary Indicators (Any of Surface Water (An High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Surface Soil Crack Inundation Visible Aerial Imagery (B)	(Nonriverine) (B2) (Nonriverine) s (B6) on	5 <u>sufficient</u> ) <u>     Salt Cr</u> <u>     Biotic</u> <u>    Aquati</u> <u>    Hydrog</u> ne) <u>   X</u> Oxidize <u>    Preser</u> <u>    Recen</u> Plowe	rust (B11) Crust (B12 c Inverteb gen Sulfide ed Rhizos nce of Red t Iron Red d Soils (C	2) rates (B13) e Odor (C1) pheres (C3) duced Iron (C4 luction in (6)		Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation-Visible-on Aerial Imagery (C9) Shallow Aquitard (D3)
Remarks HUDE/ Hydrology Netland Indicators Primary Indicators (Any of Surface Water (An High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Surface Soil Crack Inundation Visible Aerial Imagery (B)	(Nonriverine) (B2) (Nonriverine) s (B6) on	5 <u>sufficient</u> ) <u>     Salt Cr</u> <u>     Biotic</u> <u>    Aquati</u> <u>    Hydrog</u> ne) <u>   X</u> Oxidize <u>    Preser</u> <u>    Recen</u> Plowe	rust (B11) Crust (B12 c Inverteb gen Sulfide ed Rhizos nce of Red t Iron Red d Soils (C	2) rates (B13) e Odor (C1) pheres (C3) duced Iron (C4 luction in (6)		Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation-Visible-on Aerial Imagery (C9)
High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Surface Soil Crack Inundation Visible Aerial Imagery (B Water-Stained Lea	(Nonriverine) (B2) (Nonriverine) s (B6) on	5 <u>sufficient</u> ) <u>     Salt Cr</u> <u>     Biotic</u> <u>    Aquati</u> <u>    Hydrog</u> ne) <u>   X</u> Oxidize <u>    Preser</u> <u>    Recen</u> Plowe	rust (B11) Crust (B12 c Inverteb gen Sulfide ed Rhizos nce of Red t Iron Red d Soils (C	2) orates (B13) e Odor (C1) pheres (C3) duced Iron (C4 luction in 6) a Remarks)	4)	Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Netural Test (D5)
Remarks HUDE/ Hydrology Wetland Indicators Primary Indicators (Any of Surface Water (An High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Surface Soil Crack Inundation Visible Aerial Imagery (B Water-Stained Lea	(Nonriverine) (A2) (Nonriverine) (B2) (Nonriverine) (B2) (Nonriverine) (S) (S) (S) (S) (S) (S) (S) (S) (S) (S)	S sufficient) Salt Cr Biotic Aquati Aquati Hydrog Oxidiz Preser Recen Plowe Other (	rust (B11) Crust (B12 c Inverteb gen Sulfide ed Rhizos nce of Red t Iron Red d Soils (C (Explain in (Explain in	2) orates (B13) e Odor (C1) pheres (C3) duced Iron (C4 luction in 6) a Remarks)	4)	Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation-Visible-on Aerial Imagery (C9) Shallow Aquitard (D3)
Remarks HUDE/ Hydrology Wetland Indicators Primary Indicators (Any construction Surface Water (And High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Surface Soil Crack Inundation Visible Aerial Imagery (Bi Water-Stained Leas Field Observations	(Nonriverine) (A2) (Nonriverine) (B2) (Nonriverine) (B2) (Nonriverine) (S2) (S2) (S2) (S2) (S2) (S2) (S2) (S2)	S sufficient) Salt Cr Biotic Aquati Hydrog Oxidize Preser Recen Plowe Other (	rust (B11) Crust (B12 c Inverteb gen Sulfide ed Rhizos nce of Red t Iron Red d Soils (C (Explain in (Explain in es)	2) rates (B13) e Odor (C1) pheres (C3) duced Iron (C4 luction in (6) a Remarks)	4)	Secondary Indicators (2 or more required)        Water Marks (B1) (Riverine)        Sediment Deposits (B2) (Riverine)        Drift Deposits (B3) (Riverine)        Drift Deposits (B3) (Riverine)        Drift Deposits (B3) (Riverine)        Drinage Patterns (B10)        Dry-Season Water Table (C2)        Thin Muck Surface (C7)        Crayfish Burrows (C8)        Saturation Visible on         Aerial Imagery (C9)        Shallow Aquitard (D3)        FAC-Netural Test (D5)

North State Resources				Habitat Type GROSSLAND
Wetland Determination Data Form - Arid W	•			Wetland Type SEASONAL WILD
Project/Site:Sisk Dam Corrective Action Project		City/Count	ty: <u>Merced</u>	County Sampling Date: 9/2/0
Applicant/Owner: U.S. Bureau of Reclamation			-	State: CA Sampling Point: 24
Landform (hillslope, terrace, etc.) TERRACE		_ Local rel	lief (concave,	, convex, none) OBNICAVE Slope % 2-5
Subregion (LRR)	So	il Map Unit	Name: X-eu	rofluvents, Extremely GRAUE
Are climatic/hydrologic conditions on the site typical for this ti	ime of year	YES	(If no, explair	n in remarks.)
Are vegetation N, soil N, or hydrology N signific	cantly distur	bed? Are n	ormal circum	nstances present? <u>4£5</u>
Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u> natural	ally problema	atic? (If ne	eded, explair	n any answers in Remarks.)
Summary of Findings (Attach site map showing	sampling p	oint location	is, transects,	important features, etc.)
Hydrophytic vegetation? Hydric soil? YES Wetla	and hydrolo	gy? YEE	ls sampled	d area a wetland? 4F5 Other waters? NO
USACE Jurisdiction				
Adjacent to Waters X Isolate	ed (with inte	rstate comn	nerce)	Isolated (non jurisdictional)
Explain: VIA DITCHES				
Evaluation of features designated "Ot				
ndicators: Defined bed and bank Scour Feature Designation: Perennial Intermittent Ep	Ordin	ary High W	ater Mark Ma	apped
Natural Drainage Artificial Drain	nage	Navigable	Water	
				SOILS, BORDERLINE
SHAUOW DEPRESSIO	n une	N/ 2	INDE	fully, portections
WETUND.				
/egetation	Absolute	Dominant	Indicator	Dominance Test Worksheet
	Absolute % Cover		t Indicator Status	Number of dominant species
ree Stratum (use scientific names)	% Cover			
ree Stratum (use scientific names)	<u>% Cover</u>	Species?	Status	Number of dominant species (A)
Vegetation Tree Stratum (use scientific names)	<u>% Cover</u>	Species?	Status	Number of dominant species (A)
ree Stratum (use scientific names)	<u>% Cover</u>	Species?	Status	Number of dominant species that are OBL, FACW, or FAC:       2       (A)         Total number of dominant species across all strata:       3       (B)
Tree Stratum (use scientific names)	<u>% Cover</u>	Species?	<u>Status</u>	Number of dominant species (A) that are OBL, FACW, or FAC: (A) Total number of dominant species (B)
Tree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       2       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       66       (AB)
Tree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       2       (A)         Total number of dominant species across all strata:       3       (B)
ree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       2       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       66       (AB)         Prevalence Index Worksheet       66       (AB)
ree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       2       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       66       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by
iree Stratum (use scientific names)         50%=         50%=         20%=         Total Cover:         apling/Shrub Stratum (use scientific names)         50%=         20%=         Total Cover:         50%=         20%=         Total Cover:	<u>% Cover</u>	Species? Species?	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       2       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       66       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       x1 =         FACW Species       x2 =
ree Stratum (use scientific names)  50%= 20%= Total Cover: apling/Shrub Stratum (use scientific names)  50%= 20%= Total Cover: erb Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u> 	<u>Status</u> <u>Status</u> Status	Number of dominant species that are OBL, FACW, or FAC:       2       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       66       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       x1 =         FACW Species       x2 =         FAC Species       x3 =
ree Stratum (use scientific names)  50%= 20%= Total Cover: apling/Shrub Stratum (use scientific names)  50%= 20%= Total Cover: erb Stratum (use scientific names)  Vulpia bromoides	<u>% Cover</u> <u>% Cover</u> % Cover	Species?	Status Status Status FACW	Number of dominant species that are OBL, FACW, or FAC:       2       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       66       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       ×1=         FACW Species       ×2=         FAC Species       ×3=         FACU Species       ×4 =
ree Stratum (use scientific names) 50%= 20%= Total Cover: apling/Shrub Stratum (use scientific names) 50%= 20%= Total Cover: erb Stratum (use scientific names) Vulpia bromoides Heliofropium cucassavicom	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>4 0</u> 20	Species?	Status Status FACW	Number of dominant species that are OBL, FACW, or FAC:       2       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       66       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       ×1=         FACW Species       ×2=         FAC Species       ×3=         FACU Species       ×4=         UPL Species       ×5=
ree Stratum (use scientific names) 50%= 20%= Total Cover: apling/Shrub Stratum (use scientific names) 50%= 20%= Total Cover: erb Stratum (use scientific names) Vulpia bromoides Heliofropium curassavicom Bromus diandrug	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>40</u> <u>20</u>	Species?	Status Status FACW OBL UCL	Number of dominant species that are OBL, FACW, or FAC:       2       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       66       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by       0BL Species         VBL Species       ×1=       5         FACW Species       ×2=       5         FACU Species       ×4=       5         UPL Species       ×5=       (A)         Column Totals       (A)       (B)
ree Stratum (use scientific names) 50%= 20%= Total Cover: apling/Shrub Stratum (use scientific names) 50%= 20%= Total Cover: erb Stratum (use scientific names) Vulpia bromoides Heliofropium curassavicom Bromus dian drug B. Madritensis	% Cover % Cover 40 20 10	Species?	Status Status FACW OBL UPL	Number of dominant species that are OBL, FACW, or FAC:       2       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       66       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       ×1=         FACW Species       ×2=         FAC Species       ×3=         FACU Species       ×4=         UPL Species       ×5=
Tree Stratum (use scientific names) 50%= 20%= Total Cover: capling/Shrub Stratum (use scientific names) 50%= 20%= Total Cover: erb Stratum (use scientific names) Vulpia bromoides Heliofropium curassavicom Bromus dian duus B. Madritensis	% Cover % Cover 40 20 10	Species?	Status Status FACW OBL UCL	Number of dominant species       2       (A)         Total number of dominant species       3       (B)         Percent of dominant species that       66       (AB)         Percent of dominant species that       66       (AB)         Prevalence Index Worksheet       66       (AB)         Prevalence Index Worksheet       700       (AB)         VBL Species $x1 =$ 700         FACU Species $x3 =$ 700         FACU Species $x5 =$ 700         Column Totals       (A)       (B)         Prevalance Index = B/A =       700         Hydrophytic Vegetation Indicators       700
Tree Stratum (use scientific names)	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>40</u> <u>20</u> <u>10</u>	Species?	Status Status FACW OBL UPL	Number of dominant species that are OBL, FACW, or FAC:       2       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       66       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x1 =$ FACW Species $x2 =$ FAC Species $x3 =$ FACU Species $x4 =$ UPL Species $x5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       550%
Tree Stratum (use scientific names) 50%=	% Cover % Cover 40 20 10 10	Species?	Status Status FACW OBL UPL	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names) 50%=	% Cover % Cover 40 20 10 10	Species?	Status Status FACW OBL UPL	Number of dominant species that are OBL, FACW, or FAC:       2       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       66       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide support data in Remarks or on a separate sheet)
Tree Stratum (use scientific names) 50%=	% Cover % Cover 40 20 10 10	Species?	Status Status FACW OBL UPL FACU	Number of dominant species that are OBL, FACW, or FAC:       2       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       66       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide support data in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation <sup>1</sup> (Explain
Tree Stratum (use scientific names) 50%=	% Cover           % Cover           % Cover           % Cover           20           20           10           10           10           10           10	Species?	Status Status FACW OBL UPL FACU	Number of dominant species that are OBL, FACW, or FAC: $(A)$ Total number of dominant species across all strata: $(B)$ Percent of dominant species that are OBL, FACW, or FAC: $(B)$ Prevalence Index Worksheet Total % Cover of: $(AB)$ Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 5 =$ Column Totals $(A)$ Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide support data in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation <sup>1</sup> (Explain <sup>1</sup> Indicators of hydric soil and wetland hydrology must
Tree Stratum (use scientific names) 50%=	% Cover           % Cover           % Cover           % Cover           20           20           10           10           10           10           10	Species?	Status Status FACW OBL UPL FACU	Number of dominant species that are OBL, FACW, or FAC:       2       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       66       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide support data in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation <sup>1</sup> (Explain

# Soils

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Depth <u>Matrix</u>		Redox Features			the absence of	
$\frac{\text{(inches)}}{0-10}  \frac{\text{Color (moist)}}{2.54 5/3}$	<u>%</u> 75	<u>Color (moist)</u> 104R <sup>3</sup> /3 7.54R4/4	<u>%</u> Type 26 C 5 C	> M	Texture Stredy	Remarks LOANI
ITypes: C = Concentration D = Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4 Stratified Layers (AG) 1 cm Muck (A9) (LRR Depleted Below Dark Thick Dark Surface (A Sandy Mucky Mineral Restrictive Layer (if present)	(Applicable (LRR C) D) Surface (A1 12) (S1)	to all LRRs, unless off Sandy G Sandy F Stripped Loamy f Deplete 1) Redox D Deplete Redox D Vernal F		F1) F2) 6) (F7)	Indicators for P Indica	Problematic Hydric Soils <sup>3</sup> Muck (A9) (LRR C) Muck (A10) (LRR B) uced Vetric (F18) Parent Materials (TF2) etated Sand/Gravel Bars r (Explain in Remarks) of hydrophytic vegetation and Irology must be present.
Remarks HYDRIC	5016					
Remarks HYDRIC Hydrology Wetland Indicators	5016					dicators (2 or more required)
Remarks HYDRIC Hydrology	SOIL ndicator is s niverine) ?) (Nonriverin 6)	eufficient) Salt Crus Biotic Cr Aquatic I Hydroge Oxidized Presence Recent I Plowed		(C1) (C3) (C4)	Secondary In Wate Sedir Drift I Dry-S Thin Crayf Satur Satur Shall	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible on al Imagery (C9) ow Aquitard (D3) Netural Test (D5)

North State Resources				Habitat Type GRASSUND
Wetland Determination Data Form - Arid V				Wetland Type UPLAND
Project/Site: Sisk Dam Corrective Action Project		City/Coun	lv: Merceo	County Sampling Date: 9/2/09
Applicant/Owner: U.S. Bureau of Reclamation		_ 0.13700011		State: CA_Sampling Point:
Landform (hillslope, terrace, etc.) TERRACE			lief (concave	convex, none) CONVEX Slope % 0-5
Subregion (LRR) <u>LRR-C</u>	Sc	il Map Unit	Name: X-	eroflurents, ExTREMEN GRAVELY
Are climatic/hydrologic conditions on the site typical for this t	ime of year	1455	(If no, explai	in in remarks.)
Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u> signifi				
Are vegetation N, soil N, or hydrology N natura				
Summary of Findings (Attach site map showing	sampling p	oint location	is, transects,	, important features, etc.)
Hydrophytic vegetation? NO Hydric soil? NO Wet	land hydrolo	ogy? NC	ls sample	d area a wetland? <u>NO</u> Other waters? <u>NO</u>
USACE Jurisdiction			,	Later d (and initialisticand)
Adjacent to Waters Tributary to Waters Isolate	ed (with inte	erstate comr	nerce)	
Evaluation of features designated "Ot				
Indicators: Defined bed and bank Scour_				
Feature Designation: Perennial Intermittent E Natural Drainage Artificial Drain	nage	Navigable	Water	
Remarks				
UPLAND PAIR TO	PP	24.		
Vegetation	Absolute		Indicator	Dominance Test Worksheet
Tree Stratum (use scientific names)	<u>% Cover</u>	Species?	Status	Number of dominant species that are OBL, FACW, or FAC:(A)
1				
2				Total number of dominant species 4 (B)
50%= 20%= Total Cover:				
Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	Percent of dominant species that are OBL, FACW, or FAC: (AB)
1 /		<u></u>		
2				Prevalence Index Worksheet Total % Cover of:Multiply by
3				OBL Species x1 =
4				FACW Species x2=
50%= 20%= Total Cover:				FAC Species x3 =
Herb Stratum (use scientific names)	% Cover	Species?		FACU Species x4 =
1. Bromus diandrus	30	<u> </u>	OPL	UPL Species x5 =
2. Bronws hordeacous		<u> </u>	FACU	Column Totals (A) (B)
3. Centaurea 30	20		FACU	Prevalance Index = B/A =
4. Brassica negra 5. Avene fatua	5	<u></u>	UPL	
6. Bromus Maidritensis	5	_p_ N	UPL	Hydrophytic Vegetation Indicators Dominance Text is >50%
7			010	Prevalence Index is $\leq 3.0^{1}$
50%= 20%= Total Cover:	100			Morphological Adaptations <sup>1</sup> (provide supporting
Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	10 30101	- P.00.001		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
2				be present.
50%= 20%= Total Cover:			1 10 -	Hydrophytic Vegetation?
% Bare Ground in Herb Stratum % Cover of Bio	lic Crust _	$\leq$		

### Soils

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Profile Depth	Description: (D Matrix	escribe to the	depth needed to doo Redox Features		e indicator or	confirm	the absence of	f indicators.
(inches) 0-4	<u>Color (moist)</u> 1048_4/4	<u>%</u> 100	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Sandy	Lo Am
Types: C	= Concentration D	= Depletion	RM = Reduced Matrix	2	Location: PL =	Pore Lin	ing RC = Ro	ot Channel M = Matrix
Hi Hi Bl Bl St St De Tr	Soil Indicators istosol (A1) istic Epipedon (A2) lack Histic (A3) ydrogen Sulfide (A tratified Layers (A0 cm Muck (A9) (LR epleted Below Dar nick Dark Surface ( andy Mucky Minera	) 3) (LRR C) R D) k Surface (A1 (A12)	Loamy Loamy Deplete 1) Redox	Gleyed M Redox (S d Matrix ( Mucky M Gleyed M ed Matrix Dark Surf ed Dark S Depressio	latrix (S4) 5) S6) ineral (F1) latrix (F2) (F3) iace (F6) urface (F7) ons (F8)		1 cr2 cr Red Red Red Veg Othe <sup>3</sup> Indicators	Problematic Hydric Soils <sup>3</sup> n Muck (A9) (LRR C) n Muck (A10) (LRR B) luced Vetric (F18) Parent Materials (TF2) etated Sand/Gravel Bars er (Explain in Remarks) of hydrophytic vegetation and drology must be present.
Hydro Wetland	logy d Indicators						Secondary	ndicators (2 or more required)
Su Sa Sa Se Su Su Inu Ae	rface Water (A1) gh Water Table (A2 turation (A3) ater Marks (B1) (No diment Deposits (B rface Soil Cracks ( andation Visible on erial Imagery (B7) ater-Stained Leave	2) onriverine) 32) (Nonriverin (B6)	e) Recent Plowed	rust (B12) Invertebri en Sulfide d Rhizosp e of Redu Iron Redu Soils (C6	ates (B13) Odor (C1) heres (C3) uced Iron (C4 action in	•••	Watu Sedi Drift Drai Dry- Thin Cray Satu Aeri	er Marks (B1) (Riverine) iment Deposits (B2) (Riverine) Deposits (B3) (Riverine) nage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) iration Visible on al Imagery (C9) low Aquitard (D3) -Netural Test (D5)

North State Resources				Habitat Type GRASSLAND
Wetland Determination Data Form - Arid W				Wetland Type VPIAD
Project/Site:Sisk Dam Corrective Action Project		City/Coun	v: Merceo	CountySampling Date: 913/84
Applicant/Owner:U.S. Bureau of Reclamation				State: CA Sampling Point: 26
1				
Landform (hillslope, terrace, etc.) SWAVE				convex, none) CONCAVE Slope % 25
Subregion (LRR)	So	oil Map Unit	Name: Da	miluis Clay Loan 2-8%
Are climatic/hydrologic conditions on the site typical for this	time of year	24FES	(If no. explai	in in remarks.)
Are vegetation N, soil N, or hydrology S signif				
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ nature				
Summary of Findings (Attach site map showing				
Hydrophytic vegetation? NO Hydric soil? NO We	liand hydrol	ogy?	ls sample	d area a wetland? 100 Other waters? 100
USACE Jurisdiction	8.000			
Adjacent to Waters Tributary to Waters Isolat	ed (with inte	erstate comm	nerce)	_ Isolated (non jurisdictional)
Explain:				1.0(-())
Evaluation of features designated "Of Indicators: Defined bed and bank Scour_				
Feature Designation: Perenatal Intermittent E	phemeral	Blue-li	ne on USGS	Quad
Natural Drainage Artificial Drai	nage	Navigable	Water	
Remarks SMAL UPUND	Guit	5	A10.10	- WE DAND
Small Oruno :	70112	-e -	NON	- WEIDIND.
Vegetation	Absolute	Dominan	Indicator	Dominance Test Worksheet
Tree Stratum (use scientific names)	% Cover			Number of dominant species
1/	<u></u>			that are OBL, FACW, or FAC: (A)
2				Total number of dominant species
3/				across all strata:
50%= 20%= Total Cover	·			Percent of dominant species that
Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	are OBL, FACW, or FAC: (AB)
1/				Prevalence Index Worksheet
2				Total % Cover of: Multiply by
3				OBL Species x1 =
				FACW Species x 2 =
50%= 20%= Total Cover:				FAC Species x3 =
lerb Stratum (use scientific names)	% Cover	Species?	Status	FACU Species x4 =
Brownes hordeacous		Fas	FACY	
B. diandrus	45			and the second sec
Brassica negra	10	2	UPL	
<u>0</u>				Prevalance Index = B/A =
				Hydrophytic Vegetation Indicators
·				Dominance Text is >50%
· · · · ·				Prevalence Index is ≤ 3.0 <sup>1</sup> Morphological Adaptations <sup>1</sup> (provide supporting
50%= 20%= Total Cover:	160			data in Remarks or on a separate sheet)
/oody/Vine Stratum (use scientific names)	% Cover	Species?	Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
·				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.
50%= 20%= Total Cover:				Hydrophytic Vegetation?
Bare Ground in Herb Stratum % Cover of Bio		-		

8 A

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### Soils

Profile I Depth _	Description: (D Matrix	escribe to the	depth needed to doo Redox Features		ndicator o	r confirm	the absend	e of indicat	ors.
(inches)	<u>Color (moist)</u> 10 42 3/3	<u>%</u> 100	<u>Color (moist)</u>	<u>%</u>	Type <sup>1</sup>		<u>Texture</u>	LOAM	Remarks
Hydric \$HBBHS1D		(Applicable to ) (LRR C) R D) k Surface (A11 (A12)	Loamy Loamy Deplete ) Redox	herwise not Gleyed Mat Redox (S5) d Matrix (S6 Mucky Mine Gleyed Mat d Matrix (F: Dark Surfac d Dark Surf Depression	ed) rix (S4) eral (F1) rix (F2) 3) e (F6) face (F7)	= Pore Lin	Indicators 1 1 2 F F V 0 3Indicate	cm Muck cm Muck Reduced Ve Red Parent Vegetated S Other (Expla-	<u>atic Hydric Soils<sup>3</sup></u> (A9) (LRR C) (A10) (LRR B)
			( 50/ (5				Seconda	ry Indicator	s (2 or more required)
Si Si Se Su Int Ae	urface Water (A1) gh Water Table (A2 aturation (A3) ater Marks (B1) (No ediment Deposits (B urface Soil Cracks ( undation Visible on erial Imagery (B7) ater-Stained Leave	2) onriverine) 32) (Nonriverine (B6)	Salt Cru Biotic C Aquatic Hydroge Oxidized Presend Recent Plowed	st (B11) rust (B12) Invertebrate en Sulfide O d Rhizosphe e of Reduct ron Reduct Soils (C6) xplain in Re	dor (C1) eres (C3) ed Iron (C ion in	4)	V D D D D T C S	Vater Marks ediment De rift Deposi rainage Pa ry-Season	s (B1) (Riverine) eposits (B2) (Riverine) ts (B3) (Riverine) atterns (B10) Water Table (C2) Surface (C7) rrows (C8) /isible on ery (C9) uitard (D3)
Surface Wa	bservations ater Present? Yes le Present? Yes	No	X     Depth (inchest       X     Depth (inchest	· ·	-	Wetland I	Hydrology?	Yes	No X

North State Resources				Habitat Type GRASSIAND
Wetland Determination Data Form - Arid V	Vest Reg	lion		Wetland Type UPLAND
Project/Site: Sisk Dam Corrective Action Project	176		v: Merceo	9/3/00
Applicant/Owner: U.S. Bureau of Reclamation				
Investigator(s):J. Colescott				
Landform (hillslope, terrace, etc.)		Local re	ief (concave	convex none) CONCLUE_ Slope % 2-5
Subregion (LRR) <u>LRR-C</u>	Sc	il Man Unit	Name Ar	burug Loom 2-8%
Are climatic/hydrologic conditions on the site typical for this	time of year	2 4FES	(If no explai	n in remarks )
Are vegetation $\underline{N}_{i}$ soil $\underline{N}_{i}$ , or hydrology $\underline{N}_{i}$ signifi	iconfly dietu	rhod? Are r	ormal circun	netances present? YES
Are vegetation, soil, or hydrology natura		otio? //f.co	orma circuit	nonv annuars in Remarks )
Summary of Findings (Attach site map showing	) sampling p	oint location	s, transects,	important features, etc.)
Hydrophytic vegetation? NO Hydric soil? 4 F5 Wet	land hydrolo	ogy? 465	Is sample	d area a wetland? <u>NO</u> Other waters? <u>NO</u>
Adjacent to Waters Inductory to Waters Isolat	ed (with inte	erstate comm	nerce)	Isolated (non jurisdictional)
Explain:			L	A States" ILA ASSAUED
Evaluation of features designated "Ot Indicators: Defined bed and bank Scour_				
Feature Designation: Perennial IntermittentE	phemeral	Blue-lin	ne on USGS	QuadSCOUR + DEPOSITION
Feature Designation: Perennial Intermittent E Natural Drainage Artificial Drai	nage	Navigable	Water	OBSERVED.
Remarks SUSPECT SWALE = NO		Vr 3 4	A A	AND MOT AN "OTHER
	210 - M	3421011	vo. //	
wates",				
Vegetation	Absolute	Dominant	Indicator	Dominance Test Worksheet
Tree Stratum (use scientific names)	% Cover			Number of dominant species that are OBL, FACW, or FAC:(A)
1/				that are OBL, FACW, or FAC: (A)
2				Total number of dominant species
3				across all strata:
50%= 20%= Total Cover:				Percent of dominant species that
Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	are OBL, FACW, or FAC: (AB)
1				Prevalence Index Worksheet
2				Total % Cover of:Multiply by
3				OBL Species x1 =
4				FACW Species x 2 =
50%= 20%= Total Cover:				FAC Species x3 =
Herb Stratum (use scientific names)	% Cover	Species?	Status	
1. Avena fatua	50	Y_	UPL	
2. Bronus hordeacous		. <u> </u>	Etcu	UPL Species x5 =
3. Bronos d'andrug		N	UPL	Column Totals (A) (B)
4. Brassica negra		N	UPL	Prevalance Index = B/A =
5. RUMEY erigous		N	FACW	Hydrophytic Vegetation Indicators
6				Dominance Text is >50%
7				Prevalence Index is $\leq 3.0^{1}$
50%= 20%= Total Cover:	100			Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet)
Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1	- S	010000		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
2				be present.
50%= Z0%= Total Cover:				Hydrophytic Vegetation? <u>NO</u>
% Bare Ground in Herb Stratum % Cover of Bio		-		
/o bare stound in tiers suddin /o sover of bio	uc orust_			

### Soils

		or (moist)	%	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
-4	JOYR		108		_	-			LOAM			
-12	104R	4/4	60	10412	3/3	40	- 45	NOT	55 10	Am		<u> </u>
												_
/pes: (	C = Concer	ntration D =	Depletion	RM = Red	luced Matrix	2	Location: PL	= Pore Lir	ning RC = F	Root Chann	nel M = Matrix	
/dric	Soil Ind	icators:	(Applicable	to all LR	Rs, unless o	otherwise r	noted)		Indicators for	r Problen	natic Hydric Soils	3
	Histosol (A	(1)			Sandy	Gleyed N	latrix (S4)		1	cm Muck	(A9) (LRR C)	
1	Histic Epip	edon (A2)			Sandy	Redox (S	5)		2	cm Muck	(A10) (LRR B)	
6	Black Histi	c (A3)			Stripp	ed Matrix (	(S6)		R	educed V	etric (F18)	
1	Hydrogen	Sulfide (A4)	E.		Loam	y Mucky M	ineral (F1)		R	ed Parent	Materials (TF2)	
	Stratified L	ayers (AG)	(LRR C)		Loam	y Gleyed N	latrix (F2)		Ve	egetated s	Sand/Gravel Bars	6
1	1 cm Muck	(A9) (LRR	D)	20-	Deplet	ted Matrix	(F3)		<u>×</u> 0	ther (Expl	ain in Remarks)	
(	Depleted E	Below Dark	Surface (A	11) _	Redox	Dark Sur	face (F6)					
1	Thick Dark	Surface (A	12)		Deplet	ted Dark S	urface (F7)				ophytic vegetatio	
{	Sandy Mud	cky Mineral	(S1)		Redox	Depressio	ons (F8)		wetland I	nydrology	must be present	•
				_	Verna	Pools (F9	))					
		<i>tt</i> 0				D # 0	1		1. 0.10 k			
						Depin (ir	nches)	Hyu	ric Soil? 4	27		
Rema SF-Dr lydro	rks N MENT ology	O RED LAME		ATURE DECES		PARSA) CLUJIA	T Ha	OME	R 5010 NJ, CON	APO	FILE SHE RED THEM	HUDE
Rema SF-D/ Iydro Vetlar	rks N MENT ology nd Indic	O RED LAME	ox FF 24 sl	ATURE DECEC	ig Ap Dang i	PAREN	T Ha	OME	N. COM	L PRO USIDE	FILE SHE REIS THEM rs (2 or more req	
Rema SF-D/ Yotlar Vetlar	rks N MENT ology nd Indic	O RED LA CEL	ox FF 24 sl	ATURE DECEC	ig Ap inng i	PARSAJ FLUJA	T Ha	OME	Secondary	y Indicato	rs (2 or more req	uired)
Rema SF-Dr Hydr Vetlar Vetlar S	rks N MENT ology nd Indic Indicators Surface Wa	ators (Any one in ater (A1)	0x FF	ATURE DECEC	Salt Ci	PAR5A) こしり A rust (B11)	r, Hou L DEP	OME	AS, Cont	y Indicato	red them	uired)
Rema SF-Dr Hydro Vetlar Primary S F	rks M MENT ology nd Indic Indicators Surface Wa High Water	ators (Any one in ater (A1) Table (A2)	0x FF	ATURE DECEC	Salt Ci	PAR5A) - LOJA rust (B11) Crust (B12	)	OME	<u>Secondar</u> W	y Indicato	R (2 or more req rs (2 or more req rs (B1) (Riverine)	uired)
Rema SF-Dr Hydro Vetlar rimary S S	rks N MENT ology nd Indicators Surface Wa High Water Saturation	ators (Any one in ater (A1) Table (A2) (A3)	ox Fr 24 50	ATURE DECEC	Salt Ci Biotic Ci Aquati	PARSA) LUJ)A rust (B11) Crust (B12 c Invertebr	r, Hou L DEP	OME	Secondar W Se	y Indicato ater Mark	rs (2 or more req (3 (B1) (Riverine) (B2) (Riverine)	uired)
Rema SF-D/ Hydro Vetlar Primary S S S V V V V V V V V V V V V V V V V	rks M MENT ology nd Indic Indicators Surface Wa High Water Saturation Vater Mark	ators (Any one in ater (A1) Table (A2)	ox Fr 24 50 ndicator is	Sufficient	Salt Ci Biotic C Aquati	PARSAU LUJ) A rust (B11) Crust (B12 c Invertebr gen Sulfide	) rates (B13)	OME	Secondary W Se Dr Dr	y Indicato ater Mark ediment D rift Deposi	rs (2 or more req (s (B1) (Riverine) Deposits (B2) (Riverine) (Riverine)	uired) verine)
Rema SF-D/ Hydro Vetlar Vetlar S S S S S S S	rks N MENT ology nd Indicators Surface Wa ligh Water Saturation Vater Mark Sediment D	ators (Any one in ater (A1) Table (A2) (A3) (S (B1) (Nor	ndicator is	Sufficient	Salt Cu Biotic Cu Aquati Hydrog	PARSA) LUJA rust (B11) Crust (B12 c Invertebr gen Sulfide ed Rhizosp	) rates (B13) e Odor (C1)	on e 05.110	<u>Secondar</u> <u>W</u> Se Dr Dr Dr	y Indicato ater Mark ediment D rift Deposi rainage Pary-Season	rs (2 or more req (2 (B1) (Riverine) (2 (B1) (Riverine) (2 (B1) (Riverine) (2 (B1) (Riverine) (2 (B1) (Riverine) (2 (B1))	uired) verine)
Rema SF-D/ Hydr Vetlar Vetlar S H S S S S S S S S S S S S S S S S S	rks N MENT ology nd Indicators Surface Wa ligh Water Saturation Vater Mark Sediment D	ators (Any one in ater (A1) (A3) (A3) (A3) (S (B1) (Nor Deposits (B2 il Cracks (B	ndicator is	Sufficient	Salt Ci Biotic C Aquati Hydrog Oxidize	PARSA) LUJA rust (B11) Crust (B12 c Invertebr gen Sulfide ed Rhizosp	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C	on e 05.110	<u>Secondar</u> <u></u> W Se Dr Dr Dr Tt	y Indicato ater Mark ediment D rift Deposi rainage P ry-Season nin Muck	rs (2 or more req (s (B1) (Riverine) Deposits (B2) (Riv its (B3) (Riverine atterns (B10) n Water Table (C	uired) verine)
Rema SF-D/ Iydro Vetlar Vetlar S S S S S S S S	rks M MEAT ology nd Indicators Surface Wa High Water Saturation Vater Mark Sediment D Surface So	ators (Any one ii ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	ndicator is	Sufficient	Salt Ci Biotic C Aquati Hydrog Oxidize Preser Recen	PARSAU rust (B11) Crust (B12) c Invertebr gen Sulfide ed Rhizosp nce of Red	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in	on e 05.110	<u>Secondar</u> <u>W</u> Se Dr Dr Tr Cr	y Indicato ater Mark ediment D rainage Pa rainage Pa rainage Pa rainage Pa rainage Pa rainage Pa rainage Pa	rs (2 or more req (3 (B1) (Riverine) (2 (B1) (Riverine) (2 (B1) (Riverine) (2 (B1) (Riverine) (3 (B1) (Riverine) (3 (B1)) (3 (B10) (3 (C)) (4	uired) verine)
Rema SF-D/ Hydro Vetlar Primary S S S S S S S S S S S S S S S S S S S	rks N MENT ology nd Indicators Jundicators Surface Wa Jigh Water Saturation Vater Mark Sediment D Surface So nundation Aerial Image	ators (Any one ii ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	ax Fr 24 50 ndicator is riverine) ?) (Nonriveri 6)	Sufficient	Salt Ci Biotic Ci Aquati Hydrog Oxidize Preser Recen Plowe	PARSAU CUST (B11) Crust (B12) Crust (B12) c Invertebr gen Sulfide ed Rhizosp nce of Red t Iron Redu d Soils (Cf	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in	on e 05.110	<u>Secondar</u> <u>Secondar</u> W Se Dr Dr Dr Dr Cr Sa	y Indicato ater Mark ediment D rainage Pa rainage Pa rainage Pa rainage Pa rainage Pa rainage Pa rainage Pa	rs (2 or more req rs (2 or more req ss (B1) (Riverine) peposits (B2) (Riverine) atterns (B10) n Water Table (C Surface (C7) nrows (C8) Visible-on	uired) verine)
Rema SF-D/ Hydro Vetlar Vetlar S 	rks N MENT ology nd Indicators Jundicators Surface Wa Jigh Water Saturation Vater Mark Sediment D Surface So nundation Aerial Image	ators (Any one in ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	ax Fr 24 50 ndicator is riverine) ?) (Nonriveri 6)	Sufficient	Salt Ci Biotic Ci Aquati Hydrog Oxidize Preser Recen Plowe	PARSAU CUST (B11) Crust (B12) Crust (B12) c Invertebr gen Sulfide ed Rhizosp nce of Red t Iron Redu d Soils (Cf	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in 5)	on e 05.110	AS, Condard Secondard W Secondard W Secondard Dr Dr Dr Dr Cr Sa Adv	y Indicato ater Mark ediment D rift Deposi rainage P ry-Season in Muck rayfish Bu aturation erial Imag	rs (2 or more req rs (2 or more req ss (B1) (Riverine) peposits (B2) (Riverine) atterns (B10) n Water Table (C Surface (C7) nrows (C8) Visible-on	uired) verine)
Rema SF-D/ Hydro Vetlar Primary S S S S S S S S S S S S S S S S S S S	rks N MENT ology nd Indicators Jundicators Surface Wa Jigh Water Saturation Vater Mark Sediment D Surface So nundation Aerial Image	ators (Any one in ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	ax Fr 24 50 ndicator is riverine) ?) (Nonriveri 6)	Sufficient	Salt Ci Biotic Ci Aquati Hydrog Oxidize Preser Recen Plowe	PARSAU CUST (B11) Crust (B12) Crust (B12) c Invertebr gen Sulfide ed Rhizosp nce of Red t Iron Redu d Soils (Cf	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in 5)	on e 05.110	AS, Cork <u>Secondar</u> W Se Dr Dr Dr Dr Tr Cr Ar Ar St	y Indicato ater Mark ediment D rift Deposi rainage P ry-Season in Muck rayfish Bu aturation erial Imag nallow Aq	rs (2 or more requests (B1) (Riverine) beposits (B2) (Riverine) beposits (B2) (Riverine) atterns (B10) of Water Table (C. Surface (C7) irrows (C8) Visible-on- gery (C9)	uired) verine)
Rema SF-D/ Hydr Vetlar Vetlar S 	rks A MEAT ology nd Indic Indicators Surface Wa Jigh Water Saturation Vater Mark Sediment D Surface So nundation Aerial Imag Vater-Stair	AC RED LA LEL ators (Any one in ater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A3) (A3	ax Fr 24 50 ndicator is riverine) ?) (Nonriveri 6) (B9)	sufficient)	Salt Ci Biotic Ci Aquati Hydrog Oxidize Preser Recent Plowe Other (	PAREAU Trust (B11) Crust (B12) c Invertebr gen Sulfide ed Rhizosp nce of Red t Iron Redu d Soils (Ct (Explain in	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in 5)	24)	AS, Condard Secondard W Secondard W Secondard Dr Dr Dr Dr Cr Sa Ad St FA	y Indicato ater Mark ediment D rift Deposi rainage P ry-Season in Muck rayfish Bu aturation erial Imag nallow Aq AC-Netura	rs (2 or more requests (B1) (Riverine) Deposits (B2) (Riverine) Deposit	uired) verine)
Rema SF-D/ Hydr Vetlar Primary S H S S S S S S S S S S S S S S S S S	rks A MEAT ology nd Indic Indicators Surface Wa High Water Saturation Vater Mark Sediment D Surface So nundation Aerial Imag Vater-Stair Observal Water Prese	A C R FD A C FD	ax FF 24 Su ndicator is riverine) (Nonriver 6) (B9)		Salt Ci Biotic Ci Aquati Hydrog Oxidize Preser Recen Plowe Other ( Depth (inch	PAREAU Trust (B11) Crust (B12) c Invertebr gen Sulfide ed Rhizosp ince of Red t Iron Redu d Soils (Cf (Explain in es)	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in 5)	24)	AS, Cork <u>Secondar</u> W Se Dr Dr Dr Dr Tr Cr Ar Ar St	y Indicato ater Mark ediment D rift Deposi rainage P ry-Season in Muck rayfish Bu aturation erial Imag nallow Aq AC-Netura	rs (2 or more requests (B1) (Riverine) Deposits (B2) (Riverine) Deposit	uired) verine)
Rema SF-D/ Hydr Vetlar Primary S S S S S S S S S S S S S S S S S S S	rks A MEAT ology nd Indic Indicators Surface Wa Jigh Water Saturation Vater Mark Sediment D Surface So nundation Aerial Imag Vater-Stair Observat Vater Present ble Present	A C R FD A C FD	ax Frances		Salt Cu Biotic C Biotic C Aquati Hydrog Oxidize Preser Recent Plowe Other ( Depth (inch	PARSAU CUI) A rust (B11) Crust (B12) c Invertebr gen Sulfide ed Rhizosp nce of Red t Iron Redu d Soils (Cf (Explain in es)	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C uction in 5). Remarks)	Wetland	AS, Condar <u>Secondar</u> W Secondar W Secondar Dr Dr Dr Dr Dr Cr Secondar Pr Hydrology?	y Indicato ater Mark ediment D rift Deposi rainage P ry-Season in Muck rayfish Bu aturation erial Imag nallow Aq AC-Netura	rs (2 or more requests (B1) (Riverine) Deposits (B2) (Riverine) Deposit	uired) verine)
Rema Field C Vetlar Vetlar Vetlar S S V S S S S S S S S S S S S S S S S	rks A MEAT Ology nd Indic Indicators Surface Wa High Water Saturation Vater Mark Sediment D Surface So nundation Aerial Imag Vater-Stair Observat Water Present n Present?	A C R FD A C F	0x         F fr.           24         Summary           ndicator is         Indicator is           riverine)         (Nonriverine)           () (Nonriverine)         Nonriverine)           (B9)         Nonriverine)		Salt Ci Biotic Ci Aquati Hydrog Oxidize Preser Recen Plowe Other ( Depth (inch Depth (inch	PAREAU Trust (B11) Crust (B12) c Invertebr gen Sulfide ed Rhizosp ince of Red t Iron Redu d Soils (Cf (Explain in es) es)	(incluce	Wetland les capilla	AS, Condar <u>Secondar</u> W Secondar W Secondar Dr Dr Dr Dr Dr Cr Secondar Pr Hydrology?	y Indicato ater Mark ediment D ift Deposi rainage P ry-Season in Muck rayfish Bu aturation erial Imag nallow Aq AC-Netura Yes	rs (2 or more requests (B1) (Riverine) Deposits (B2) (Riverine) Deposit	uired) verine)

North State Resources				Habitat Type
Wetland Determination Data Form - Arid V				Wetland Type UPUND
Project/Site: Sisk Dam Corrective Action Project		City/Count	y: <u>Mercec</u>	County Sampling Date: 9/3/89
Applicant/Owner: U.S. Bureau of Reclamation				State: CA Sampling Point: 28
Investigator(s):J. Colescott				_
Landform (hillslope, terrace, etc.) MINOR SWALE		_ Local rel	ef (concave	, convex, none) CONCAUE Slope % 0-2
Subregion (LRR) LRR-C	So	il Map Unit N	lame: Pa	amplies Clay Loan 2-8%
Are climatic/hydrologic conditions of the site typical for this t	ime of year	? YES	lf no, explai	n in remarks.)
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ signifi				
Are vegetation N soil N or hydrology N natura				
Summary of Findings (Attach site map showing				
Hydrophytic vegetation? NO Hydric soil? MO Wet	land hydrolo	bgy? NO	Is sample	d area a wetland? <u>NU</u> Other waters? <u>NO</u>
USACE Jurisdiction Adjacent to Waters Indutary to Waters Isolate	ed (with inte	erstate comm	erce)	_ Isolated (non jurisdictional)
Explain:				
Evaluation of features designated "Ot				
Indicators: Defined bed and bank Scour _ Feature Designation: Perengial Intermittent E	Ordin	nary High Wa	e on USGS	apped
Natural Drainage Artificial Drain	nage	Navigable	Vater	
Remarks				
UPUTUD SWALFE.				
1. 10 an 18-28				
Vegetation	Absolute	Dominant	Indicator	Dominance Test Worksheet
Tree Stratum (use scientific names)	% Cover	Species?		Number of dominant species that are OBL, FACW, or FAC:(A)
1		· <u> </u>		that are OBL, FACW, or FAC: (A)
2				Total number of dominant species 2
3				across all strata: (B)
50%= 20%= Total Cover:				Percent of dominant species that
Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	are OBL, FACW, or FAC: (AB)
1/				Prevalence Index Worksheet
2			<u> </u>	Total % Cover of: Multiply by
3				OBL Species x1 =
ł	S - 22 24			FACW Species x2 =
50%= 20%= Total Cover:	Statement of the second	120 101 120	ingennes (	FAC Species x 3 =
Herb Stratum (use scientific names)	% Cover	Species?		FACU Species x 4 =
Bromus Nordeacous		JFG	FACU	UPL Species x 5 =
Avenu fatua		<u> </u>		Column Totals (A) (B)
Hordeam Leporinum	_15_	4	FAC	Prevalance Index = B/A =
Amsiakia - menzicsi		p	UPL	
·				Hydrophytic Vegetation Indicators
·		<u> </u>		Dominance Text is >50% Prevalence Index is $\leq 3.0^{1}$
				Morphological Adaptations <sup>1</sup> (provide supporting
50%= 20%= Total Cover:		5 <b>*</b> 5		data in Remarks or on a separate sheet)
Voody/Vine Stratum (use scientific names)		Species?		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must
				be present.
				Hydrophytic Vegetation? NO
50%= 20%= Total Cover:				nyaropnyuc vegetation 7
Bare Ground in Herb Stratum % Cover of Bio	tic Crust _	-		

# Soils

Profile Description: (Describe to the		licator or confirm	the absence of indicators.
Depth         Matrix           (inches)         Color (moist)         %           0 ~ 6         10 Y R         9/3         000	Redox Features           Color (moist)         %         T	<u>ype1 Loc2</u>	Texture <u>Remarks</u> <u>CRAVELCY LOAM</u>
· · · · · · · · · · · · · · · · · · ·			· ·
Types: C = Concentration D = Depletion R	M = Reduced Matrix <sup>2</sup> Loca	tion: PL = Pore Lir	ning RC = Root Channel M = Matrix
lydric Soil Indicators: (Applicable to	all LRRs, unless otherwise noted	(t	Indicators for Problematic Hydric Soils <sup>3</sup>
Histosol (A1)	Sandy Gleyed Matrix	(S4)	1 cm Muck (A9) (LRR C)
Histic Epipedon (A2)	Sandy Redox (S5)		2 cm Muck (A10) (LRR B)
Black Histic (A3)	Stripped Matrix (S6)		Reduced Vetric (F18)
Hydrogen Sulfide (A4)	Loamy Mucky Minera	al (F1)	Red Parent Materials (TF2)
Stratified Layers (AG) (LRR C)	Loamy Gleyed Matrix	< (F2)	Vegetated Sand/Gravel Bars
1 cm Muck (A9) (LRR D)	Depleted Matrix (F3)		Other (Explain in Remarks)
Depleted Below Dark Surface (A11	) Redox Dark Surface	(F6)	
Thick Dark Surface (A12)	Depleted Dark Surface	ce (F7)	<sup>3</sup> Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Redox Depressions (	(F8)	wetland hydrology must be present.
	Vernal Pools (F9)		
Restrictive Layer (if present): Type:	Depth (Inches	s) Hyd	ric Soil? <u>NO</u>
		s) Hydi	ric Soil? <u>NO</u>
Remarks OPLAND ZOIL		s) Hydi	ric Soil? <u>NO</u>
Remarks OPLAND SOLL Hydrology Wetland Indicators	\$	s) Hydr	ric Soil? <u>NO</u> Secondary Indicators (2 or more required
Remarks OPLAND GOIL Hydrology Wetland Indicators Primary Indicators (Any one indicator is su	flicient)	s) Hydi	
Remarks UPLAND SOLL Hydrology Wetland Indicators	\$	s) Hydi	Secondary Indicators (2 or more required Water Marks (B1) (Riverine)
Remarks ()PLANS 2012 Hydrology Wetland Indicators Primary Indicators (Any one indicator is su Surface Water (A1)	fficient) Salt Crust (B11)		Secondary Indicators (2 or more required Water Marks (B1) (Riverine)
Remarks () PLANS GOIL Hydrology Wetland Indicators Primary Indicators (Any one indicator is su Surface Water (A1) High Water Table (A2)	fficient) Salt Crust (B11) Biotic Crust (B12)	(B13)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine
Remarks ()PLANS ZOIL Hydrology Wetland Indicators Primary Indicators (Any one indicator is su Surface Water (A1) High Water Table (A2) Saturation (A3)	fficient) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates Hydrogen Sulfide Odd	(B13) pr (C1)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine Drift Deposits (B3) (Riverine)
Remarks       PLANS       Zorthow         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is surface Water (A1)	fficient) Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates Hydrogen Sulfide Odd	(B13) pr (C1) es (C3)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10)
Remarks (PLAN) 2012 Hydrology Wetland Indicators Primary Indicators (Any one indicator is su Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine)	fficient)  fficient)  Salt Crust (B11)  Biotic Crust (B12)  Aquatic Invertebrates  Hydrogen Sulfide Odd  Oxidized Rhizosphere	(B13) or (C1) es (C3)   Iron (C4)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2)
Remarks (PLAN) Colors Hydrology Wetland Indicators Primary Indicators (Any one indicator is su Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)	fficient)  fficient)  Salt Crust (B11)  Biotic Crust (B12)  Aquatic Invertebrates  Hydrogen Sulfide Ode  Oxidized Rhizosphere  Presence of Reduced  Recent Iron Reduction Plowed Soils (C6)	(B13) or (C1) es (C3) I Iron (C4) n in	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on
Remarks (PLANE) COLLANE Hydrology Wetland Indicators Primary Indicators (Any one indicator is su Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine Surface Soil Cracks (B6) Inundation Visible on	fficient)  fficient)  Salt Crust (B11)  Biotic Crust (B12)  Aquatic Invertebrates  Hydrogen Sulfide Odd  Oxidized Rhizosphere  Presence of Reduced  Recent Iron Reduction	(B13) or (C1) es (C3) I Iron (C4) n in	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Remarks (PLAN) Colors Hydrology Wetland Indicators Primary Indicators (Any one indicator is su Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)	fficient)  fficient)  Salt Crust (B11)  Biotic Crust (B12)  Aquatic Invertebrates  Hydrogen Sulfide Ode  Oxidized Rhizosphere  Presence of Reduced  Recent Iron Reduction Plowed Soils (C6)	(B13) or (C1) es (C3) I Iron (C4) n in	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3)
Remarks (PLAN) Solution Hydrology Wetland Indicators Primary Indicators (Any one indicator is su Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	fficient)  fficient)  Salt Crust (B11)  Biotic Crust (B12)  Aquatic Invertebrates  Hydrogen Sulfide Ode  Oxidized Rhizosphere  Presence of Reduced  Recent Iron Reduction Plowed Soils (C6)	(B13) or (C1) es (C3) I Iron (C4) n in	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Remarks (PLAN) Control	fficient)Salt Crust (B11)Salt Crust (B12)Aquatic InvertebratesHydrogen Sulfide Odd )Oxidized RhizospherePresence of ReducedRecent Iron Reduction Plowed Soils (C6)Other (Explain in Rem	(B13) or (C1) es (C3) I Iron (C4) n in narks)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Netural Test (D5)
Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is su	fficient)Salt Crust (B11)Salt Crust (B11)Biotic Crust (B12)Aquatic InvertebratesHydrogen Sulfide Odd )Oxidized RhizospherePresence of ReducedRecent Iron Reduction Plowed Soils (C6)Other (Explain in Rem	(B13) or (C1) es (C3) I Iron (C4) n in narks)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3)
Remarks       PLANS       POIL         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is su         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonriverine)         Sediment Deposits (B2) (Nonriverine)         Surface Soil Cracks (B6)         Inundation Visible on         Aerial Imagery (B7)         Water-Stained Leaves (B9)	fficient)Salt Crust (B11)Biotic Crust (B12)Aquatic InvertebratesHydrogen Sulfide Odd )Oxidized RhizospherePresence of ReducedRecent Iron Reduction Plowed Soils (C6)Other (Explain in Rem	(B13) or (C1) es (C3) I Iron (C4) n in narks)	Secondary Indicators (2 or more required        Water Marks (B1) (Riverine)        Sediment Deposits (B2) (Riverine)        Drift Deposits (B3) (Riverine)        Drift Deposits (B10)        Drift Deposits (B10)        Drift Deposits (B10)        Drift Deposits (B10)        Drift Deposits (B2)        Status of the term of the term of term

North State Resources				Habitat Type CRASS LAND
Wetland Determination Data Form - Arid W	lest Reg	ion		Wetland Type Drich
Project/Site:Sisk Dam Corrective Action Project		Citv/Count	v: Merced	County Sampling Date: 9/3/09
Applicant/Owner:U.S. Bureau of Reclamation				State: CA Sampling Point: 29
Investigator(s): J. Colescott				
Landform (hillslope, terrace, etc.) 1 1244		Local rel	ief (concave	CONVEX NOTE Slope % O-2
Subregion (LRR)	So	Local Init /	Nome: Xe	of fluxents, Extremely aravelly
Are climatic/hydrologic conditions on the site typical for this t	imo of voor	VEG	lifno ovoloi	nin romarka l
Are contained by a contraction of the site typical for this t	ine or year	10/	(II 110, explain	The remains.)
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ signification $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natural	cantiy distur	Ded? Are n	ormal circun	
Summary of Findings (Attach site map showing				
Hydrophytic vegetation? NO Hydric soil? 465 Wet	and hydrolo	gy? <u>9R</u> 2	> Is sample	d area a wetland? <u>NO</u> Other waters? <u>NC</u>
Adjacent to Waters Tributary to Waters Isolate	ed (with inte	rstate comm	nerce)	_ Isolated (non jurisdictional)
Explain:				
Evaluation of features designated "Ot				
Indicators: Defined bed and bank Scour _ Feature Designation: Perennial Intermittent E				
Natural Drainage Artificial Drain	nage	Navigable	Water	
Remarks DITTH HARITAT GALL	٢.,	JUDEO	(DXY	INDIATORS PRESENT.
Remarks DITCH HABITAT. SOIL BUT PRESUME LACK OF VE		H-1000		(a) OATION ) OR SATURATION )
15 FOR INSUFFICIENT DURY	tions of	M CI	PPART	DOMINANT HYDROPHUTIC VEG.
	(1(0))	,0 ,0	TTOP	
Vegetation	Absolute	Dominant	Indicator	Dominance Test Worksheet
Tree Stratum (use scientific names)	% Cover	Species?	Status	Number of dominant species that are OBL, FACW, or FAC:(A)
1				that are OBL, FACW, or FAC: (A)
2				Total number of dominant species
3				across all strata:
50%= 20%= Total Cover:				Percent of dominant species that
Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	are OBL, FACW, or FAC:(AB)
1				Prevalence Index Worksheet
2	04			Total % Cover of: Multiply by
3				OBL Species x1 =
4				FACW Species x2 =
50%= Total Cover:				FAC Species $70 \times 3 = 210$
Herb Stratum (use scientific names)	% Cover	Species?	-	FACU Species 20 x4= 80
1. Hordeun leposinom	70	<u> </u>	FAC	UPL Species $10 \times 5 = 50$
2. Bromus hordeaeous		<u> </u>	FACU	Column Totals <u>IOD</u> (A) <u>340</u> (B)
3. Bromus und dritensis	10	N	UPC	Prevalance Index = $B/A = 3.4$
4				Prevalance index - D/A
5				Hydrophytic Vegetation Indicators
6				Dominance Text is >50%
7				Prevalence Index is ≤ 3.0 <sup>1</sup> Morphological Adaptations <sup>1</sup> (provide supporting
50%= 20%= Total Cover:	100		_	data in Remarks or on a separate sheet)
Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.
2				1
50%= 720%= Total Cover:			1	Hydrophytic Vegetation?
% Bare Ground in Herb Stratum % Cover of Bio	ic Crust	=		

Sampling Point 29

### Soils

1 ......

Depth_	Matrix	0/		Features		- 1		<b>-</b> (		Demedia
inches) ∽ <b>分</b>	2,545/3	<u>%</u> 70	<u>Color (n</u> 2.54 3		<u>*</u> 25	<u>Type<sup>1</sup></u>	$\frac{Loc^2}{Q}$	Texture	104	Remarks
	a.010/5_		7.57R		5		<u>RC</u> M	<u>SANDY</u>	LOM	<u> </u>
			<u></u>	16		· ·				
	C = Concentration D = I				2		- Dere Lin	·		nel M = Matrix
	Soil Indicators: (					Location: PL = noted)		•	ot Chanr Problen	natic Hydric Soils <sup>3</sup>
-	Histosol (A1)					latrix (S4)				(A9) (LRR C)
	Histic Epipedon (A2)			•	Redox (S					(A10) (LRR B)
	Black Histic (A3)			•	ed Matrix (	-				etric (F18)
	Hydrogen Sulfide (A4)					lineral (F1)				Materials (TF2)
	Stratified Layers (AG)			- •	•	Aatrix (F2)		Veg	etated	Sand/Gravel Bars
	1 cm Muck (A9) (LRR				ed Matrix			Oth	er (Expl	ain in Remarks)
(	Depleted Below Dark S	Surface (A	11)		Dark Surf	. ,				
1	Thick Dark Surface (A	12)				Surface (F7)		<sup>3</sup> Indicators	s of hydr	ophytic vegetation and
	Sandy Mucky Mineral (		X		Depressio			wetland hy	/drology	must be present.
		. ,			Pools (F9					
_	ive Layer (if present): rks HY DR/C		-		Depth (In	nches)	_ Hydr	ic Soil? <u> </u>	29	
Rema Hydro Wetlar	rks Hy DRIC ology nd Indicators	50105			Depth (In	nches)	_ Hydr		· · ·	
Rema Hydro Wetlar	rks HyDric	50105			Depth (In	nches)	_ Hydr		· · ·	rs (2 or more required)
Rema Hydro Wetlar Primary	rks Hy Dr.C ology nd Indicators	50105	sufficient)	Salt Cru	Depth (In	nches)	_ Hydr	Secondary	Indicato	rs (2 or more required) s (B1) (Riverine)
Rema Hydro Wetlar Primary S	rks Hy DRIC ology nd Indicators Indicators (Any one in	50105	sufficient)				_ Hydr	Secondary	Indicato ter Mark	
Rema Hydro Wetlar Primary S	rks JUDRIC ology Ind Indicators Indicators (Any one in Surface Water (A1)	50105	sufficient)	Biotic C	ust (B11) Frust (B12		Hydr	<u>Secondary</u> Wa Sec	Indicato ter Mark	s (B1) (Riverine)
Rema Hydro Wetlar Primary S S	rks JUDRIC ology nd Indicators Indicators (Any one in Surface Water (A1) ligh Water Table (A2)	Solus adicator is	sufficient)	Biotic C Aquatic	ust (B11) Crust (B12 Invertebr	)	_ Hydr	<u>Secondary</u> Wa Sec Drif	Indicato ter Mark liment D t Depos	s (B1) (Riverine) eposits (B2) (Riverine)
Rema Hydro Wetlar Primary S H S S V	rks JUDRIC ology Ind Indicators Indicators (Any one in Surface Water (A1) High Water Table (A2) Saturation (A3)	Solus adicator is	sufficient)	Biotic C Aquatic Hydrogo	ust (B11) Crust (B12 Invertebr en Sulfide	) ates (B13)	Hydr	Secondary Wa Sec Drif Dra	Indicato ter Mark liment D t Depos inage P	s (B1) (Riverine) eposits (B2) (Riverine) its (B3) (Riverine)
Remain Hydro Wetlar Primary S H S S S S S S S	rks JUDRIC ology nd Indicators Indicators (Any one in Surface Water (A1) ligh Water Table (A2) saturation (A3) Vater Marks (B1) (Nonr	Solus adicator is riverine)	sufficient)	Biotic C Aquatic Hydrogo Oxidize	ust (B11) Crust (B12 Invertebr en Sulfide d Rhizosp	) ates (B13) Odor (C1)		Secondary Wa Sec Drif Dra Dry	Indicato ter Mark liment D t Deposi inage P -Seasor	s (B1) (Riverine) eposits (B2) (Riverine) its (B3) (Riverine) atterns (B10)
Remainer	rks JUDRIC ology nd Indicators Indicators (Any one in Surface Water (A1) tigh Water Table (A2) Saturation (A3) Vater Marks (B1) (Nonr Sediment Deposits (B2) Surface Soil Cracks (B6) Surface Soil Cracks (B6)	Solus adicator is riverine)	sufficient)	Biotic C Aquatic Hydrogo Oxidize Preseno Recent	ust (B11) Crust (B12 Invertebr en Sulfide d Rhizosp ce of Redu Iron Redu	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C4 uction in		Secondary Wa Sec Drif Dra Thi	Indicato ter Mark liment D t Depos inage P -Seasor n Muck	s (B1) (Riverine) eposits (B2) (Riverine) its (B3) (Riverine) atterns (B10) water Table (C2)
Remained in the second	rks JUDRIC ology nd Indicators Indicators (Any one in Surface Water (A1) ligh Water Table (A2) saturation (A3) Vater Marks (B1) (Nonr sediment Deposits (B2) surface Soil Cracks (B6) nundation Visible on Aerial Imagery (B7)	Solus adicator is riverine) ) (Nonriveri δ)	sufficient)	Biotic C Aquatic Hydrogo Oxidize Present Recent	ust (B11) Frust (B12 Invertebr en Sulfide d Rhizosp ce of Redu Iron Redu I Soils (Ce	) ates (B13) Odor (C1) oheres (C3) uced Iron (C4 uction in 5)		Secondary Wa Sec Drif Dra Dry Thin Cra Sat	Indicato ter Mark liment D t Deposi inage P -Seasor n Muck yfish Bu uration	es (B1) (Riverine) peposits (B2) (Riverine) its (B3) (Riverine) atterns (B10) o Water Table (C2) Surface (C7) rrows (C8) visible on
Remained in the second	rks JUDRIC ology nd Indicators Indicators (Any one in Surface Water (A1) tigh Water Table (A2) Saturation (A3) Vater Marks (B1) (Nonr Sediment Deposits (B2) Surface Soil Cracks (B6) Surface Soil Cracks (B6)	Solus adicator is riverine) ) (Nonriveri δ)	sufficient)	Biotic C Aquatic Hydrogo Oxidize Present Recent	ust (B11) Frust (B12 Invertebr en Sulfide d Rhizosp ce of Redu Iron Redu I Soils (Ce	) rates (B13) e Odor (C1) oheres (C3) uced Iron (C4 uction in		Secondary Wa Sec Drif Dry Thiu Cra Sat Aei	Indicato ter Mark liment D t Depos inage P -Seasor Seasor Muck yfish Bu uration ial Imag	as (B1) (Riverine) eeposits (B2) (Riverine) its (B3) (Riverine) atterns (B10) n Water Table (C2) Surface (C7) rrows (C8) visible on gery (C9)
Remained in the second	rks JUDRIC ology nd Indicators Indicators (Any one in Surface Water (A1) ligh Water Table (A2) saturation (A3) Vater Marks (B1) (Nonr sediment Deposits (B2) surface Soil Cracks (B6) nundation Visible on Aerial Imagery (B7)	Solus adicator is riverine) ) (Nonriveri δ)	sufficient)	Biotic C Aquatic Hydrogo Oxidize Present Recent	ust (B11) Frust (B12 Invertebr en Sulfide d Rhizosp ce of Redu Iron Redu I Soils (Ce	) ates (B13) Odor (C1) oheres (C3) uced Iron (C4 uction in 5)		Secondary Wa Sec Drif Dra Dry Thin Cra Sat Sha	Indicato ter Mark liment D t Deposi inage P -Seasor n Muck yfish Bu uration tial Imag illow Aq	es (B1) (Riverine) peposits (B2) (Riverine) its (B3) (Riverine) atterns (B10) o Water Table (C2) Surface (C7) rrows (C8) visible on gery (C9) uitard (D3)
Rema Hydro Wetlar Primary S H S S S S S S S S S S S S S S S S S	rks JUDRIC ology nd Indicators Indicators (Any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Vater Marks (B1) (Nonr Sediment Deposits (B2) Surface Soil Cracks (B6) hundation Visible on Aerial Imagery (B7) Vater-Stained Leaves (	Solus adicator is riverine) ) (Nonriveri δ)	sufficient)	Biotic C Aquatic Hydrogo Oxidize Present Recent	ust (B11) Frust (B12 Invertebr en Sulfide d Rhizosp ce of Redu Iron Redu I Soils (Ce	) ates (B13) Odor (C1) oheres (C3) uced Iron (C4 uction in 5)		Secondary Wa Sec Drif Dra Dry Thin Cra Sat Sha	Indicato ter Mark liment D t Deposi inage P -Seasor n Muck yfish Bu uration tial Imag illow Aq	as (B1) (Riverine) eeposits (B2) (Riverine) its (B3) (Riverine) atterns (B10) n Water Table (C2) Surface (C7) rrows (C8) visible on gery (C9)
Rema Hydro Wetlar Primary S S H S S S Ir A S S S S S S S S S S S S S S S S S S	rks JUDRIC ology nd Indicators Indicators (Any one in Surface Water (A1) ligh Water Table (A2) Saturation (A3) Vater Marks (B1) (Nonr Sediment Deposits (B2) Surface Soil Cracks (B6) nundation Visible on Aerial Imagery (B7) Vater-Stained Leaves ( Dbservations	Solus adicator is niverine) (Nonriveri S) (B9)	sufficient)	Biotic C Aquatic Hydrogo Oxidize Presend Recent Plowed Other (E	ust (B11) Crust (B12 Invertebr en Sulfide d Rhizosp ce of Redu Iron Redu I Soils (C6 Explain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C4 uction in <u>5)</u> Remarks)	4)	Secondary — Wa — Sec — Drif — Dra — Dry — Thin — Cra — Sat Aen — Sha — FAC	Indicato ter Mark liment D t Deposi inage P -Seasor n Muck s yfish Bu uration - rial Imag Ilow Aq C-Netura	as (B1) (Riverine) peposits (B2) (Riverine) its (B3) (Riverine) atterns (B10) n Water Table (C2) Surface (C7) rrows (C8) visible on pery (C9) uitard (D3) al Test (D5)
Rema Hydro Wetlar Primary S H S S S S S S S S S S S S S S S S S	rks JUDRIC ology nd Indicators Indicators (Any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Vater Marks (B1) (Nonr Sediment Deposits (B2) Surface Soil Cracks (B6) nundation Visible on Aerial Imagery (B7) Vater-Stained Leaves ( Observations Vater Present? Yes _	Solus idicator is riverine) (Nonriveri (B9)	sufficient)	Biotic C Aquatic Hydrogo Oxidize Presenc Recent Plowed Other (E	ust (B11) Crust (B12 Invertebr en Sulfide d Rhizosp ce of Redu Iron Redu I Soils (C6 Explain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C4 uction in <u>5)</u> Remarks)	4)	Secondary Wa Sec Drif Dra Dry Thin Cra Sat Sha	Indicato ter Mark liment D t Deposi inage P -Seasor n Muck s yfish Bu uration - rial Imag Ilow Aq C-Netura	as (B1) (Riverine) peposits (B2) (Riverine) its (B3) (Riverine) atterns (B10) n Water Table (C2) Surface (C7) rrows (C8) visible on pery (C9) uitard (D3) al Test (D5)
Remain Hydro Wetlar Primary S S H S S S S S S S S S S S S S S S S	rks JUDRIC ology nd Indicators Indicators (Any one in Surface Water (A1) ligh Water Table (A2) Saturation (A3) Vater Marks (B1) (Nonr Sediment Deposits (B2) Surface Soil Cracks (B6) nundation Visible on Aerial Imagery (B7) Vater-Stained Leaves ( Dbservations	Solcs         adicator is         niverine)         (Nonriveri         δ)         (B9)	sufficient) 	Biotic C Aquatic Hydrogo Oxidize Presend Recent Plowed Other (E	ust (B11) Crust (B12 Invertebr en Sulfide d Rhizosp ce of Redu Iron Redu I Soils (C6 Explain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C4 uction in 5) Remarks)	4)	Secondary Wa Sec Drif Drif Dra Thin Cra Sha Sha Sha FAC	Indicato ter Mark liment D t Deposi inage P -Seasor n Muck s yfish Bu uration - rial Imag Ilow Aq C-Netura	as (B1) (Riverine) peposits (B2) (Riverine) its (B3) (Riverine) atterns (B10) n Water Table (C2) Surface (C7) rrows (C8) visible on pery (C9) uitard (D3) al Test (D5)

North State Resources				Habitat Type GRASSLAND
Wetland Determination Data Form - A	rid West Reg	ion		Wetland Type UPLAND
Project/Site: Sisk Dam Corrective Action Project		City/Count	v. Merced	County Sampling Date: 9/3/0
Applicant/Owner:U.S. Bureau of Reclamation				State: <u>CA</u> Sampling Point: <u>30</u>
Investigator(a):				
Landform (billslope forrace atc.) PLALA		L ocal rati	iof (concovo	, convex, none) DEPRESSIONSlope % 0-27
Subrosion (I BP) I DP C	C-	Local leit	lamo. Vo	rofluvents, Edremely Gravelly
Are alimetic/hudralasis and titises on the site tunical f	SC			in amonda l
Are climatic/hydrologic conditions on the site typical for				
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$	_ significantly distu	rbed? Are n	ormal circun	Instances present? <u>Vreg</u>
Are vegetation, soli, or hydrology	_ naturally problem	atic? (If nee	eded, explai	n any answers in Remarks.)
Summary of Findings (Attach site map sl				
Hydrophytic vegetation? ND Hydric soil? 4E5	2 Wetland hydrolo	ogy? 4ES	Is sample	d area a wetland?
USACE Jurisdiction				
Adjacent to Waters Tributary to Waters	Isolated (with inte	erstate comm	ierce)	_ Isolated (non jurisdictional)
Explain:			-	· · · · · ·
Evaluation of features designated				
Indicators: Defined bed and bank S Feature Designation: Perennial Intermittent				
Natural Drainage Artificia				
				MUST BE FOR INSUFFICIE
DORATION, OR SUFFICIENT	TLY IN FO	ERNE	NT In	SUPPORT DAMINANT
HYDROPHYTIC VELY, N	AN - WED	Adi	, jo	Sofficial Porto en
Million Ho Viela. N	UN WELL	JAND.		
Vegetation	Absoluto	Dominant	Indicator	Dominance Test Worksheet
	Absolute % Cover			Dominance Test Worksheet Number of dominant species
Tree Stratum (use scientific names)	Absolute <u>% Cover</u>			그는 그렇게 제가에 잘 알 것에서 잘 많아야 한 것을 얻는 것 것이라. 가슴 것은 것 같은 것이라.
				Number of dominant species that are OBL, FACW, or FAC: (A)
Vegetation           Tree Stratum (use scientific names)           1.           2.           3.				Number of dominant species
Tree Stratum (use scientific names)				Number of dominant species 1 (A) Total number of dominant species 3 (B)
Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total	<u>% Cover</u>		<u>Status</u>	Number of dominant species (A) Total number of dominant species
Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total	% Cover                       Cover:            % Cover         % Cover	<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:(A) Total number of dominant species across all strata:(B) Percent of dominant species that are OBL, FACW, or FAC:(AB) <b>Prevalence Index Worksheet</b>
Tree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)	% Cover	<u>Species?</u> <u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)	% Cover	<u>Species?</u> <u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)	% Cover	<u>Species?</u> Species?	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)	% Cover	<u>Species?</u> <u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)	% Cover	Species?	Status Status Status	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)         1.         2.         3.         50%=	% Cover	Species?	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)	% Cover	Species?	Status Status Status Status FAC	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)	% Cover           Cover:	Species?	Status Status Status FACU VPL UPL	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)	% Cover           Cover:	Species?	Status Status Status FACU VPL UPL	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)	% Cover           Cover:	Species?	Status Status Status FACU VPL UPL	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)	% Cover           Cover:	Species?	Status Status Status FACU VPL UPL	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)	% Cover           Cover:	Species?	Status Status EAC VPL UPL	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)  1	% Cover           Cover:	Species?	Status Status EAC VPL UPL	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)  1	% Cover           Cover:	Species?	Status Status EAC VPL UPL	Number of dominant species that are OBL, FACW, or FAC:
Tree Stratum (use scientific names)  1	% Cover           Cover:	Species?	Status Status EAC VPL UPL	Number of dominant species that are OBL, FACW, or FAC:

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### Soils

Depth _ nches)	Matrix Color (moist)	%		(moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
1-12	2.54 6/2	70	10 YR	5/6	26	·C	M	GLAY	LAM
			GLEYI	6/104	5	<u>D</u>	M	<u> </u>	2
ydric	C = Concentration D = <b>Soil Indicators:</b> Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4 Stratified Layers (AG I cm Muck (A9) (LRF Depleted Below Dark Thick Dark Surface (A Sandy Mucky Minera	(Applicable )) (LRR C) (D) Surface (A1 (A12)	to all LRRs 	s, unless o Sandy Sandy Strippe Loamy Loamy Deplete Redox	therwise r Gleyed M Redox (S ed Matrix ( Mucky M Gleyed M ed Matrix Dark Surf ed Dark S	atrix (S4) 5) S6) ineral (F1) fatrix (F2) (F3) face (F6) urface (F7)		Indicators for F1 cm2 cmRedRedVegeOthe <sup>3</sup> Indicators	t Channel M = Matrix Problematic Hydric Soils <sup>3</sup> Muck (A9) (LRR C) Muck (A10) (LRR B) uced Vetric (F18) Parent Materials (TF2) etated Sand/Gravel Bars er (Explain in Remarks) of hydrophytic vegetation and drology must be present.
	ive Layer (if present rks CIFAR R		FEANE	Vernal	Depth (In estated			ic Soil? X	
Rema lydr Vetlar	rks CIEAR R ology nd Indicators	EDOX	- 2004 - 14 					c soils.	5
Rema Hydro Vetlar Primary	rks CLEAR R ology nd Indicators Indicators (Any one	EDOX	- 2004 - 14 	ees f	2246.1			Secondary In	ndicators (2 or more required
Rema Hydro Vetlar Primary S	rks CLEAR R ology nd Indicators Indicators (Any one surface Water (A1)	ED0χ	- 2004 - 14 	Salt Cru	ust (B11)			Secondary Ir	ndicators (2 or more required er Marks (B1) (Riverine)
Remain Hydro Vetlar Primary S	rks CLEAR R ology nd Indicators Indicators (Any one Surface Water (A1) ligh Water Table (A2	ED0χ	- 2004 - 14 	Salt Cri Biotic C	ust (B11) Crust (B12	) )		Secondary Ir	ndicators (2 or more required er Marks (B1) (Riverine) ment Deposits (B2) (Riverine
Reman Hydro Vetlar Primary S H S	rks CIFAR R ology nd Indicators Indicators (Any one surface Water (A1) ligh Water Table (A2 saturation (A3)	FDΦX	- 2004 - 14 	Salt Cro Biotic C Aquatic	ust (B11) Crust (B12)	) ates (B13)		Secondary II	ndicators (2 or more required er Marks (B1) (Riverine) ment Deposits (B2) (Riverine Deposits (B3) (Riverine)
Remain Hydro Vetlar Primary S H S S V	rks CLEAR R ology nd Indicators Indicators (Any one Surface Water (A1) ligh Water Table (A2 saturation (A3) Vater Marks (B1) (No	EDΦX indicator is s	sufficient)	Salt Cru Biotic C Aquatic	ust (B11) Crust (B12) Invertebr en Sulfide	) ates (B13) Odor (C1)		Secondary Ir Wate Vate Sedi Drift	ndicators (2 or more required er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) nage Patterns (B10)
Reman Hydro Wetlar Primary S H S S S	rks CLEAR R ology nd Indicators Indicators (Any one Surface Water (A1) ligh Water Table (A2 saturation (A3) Vater Marks (B1) (No sediment Deposits (B	EDOX indicator is s ) nriverine) 2) (Nonriverin	sufficient)	Salt Cru Biotic C Aquatic Hydrog	ust (B11) Crust (B12) Invertebr en Sulfide	) ates (B13) Odor (C1) oheres (C3)	H4 DR 1	Secondary In Secondary In Wate Sedin Drift Drain Dry-	ndicators (2 or more required er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2)
Remain Hydro Wetlar Primary S S S S S S S S S S S	rks CLEAR R ology nd Indicators Indicators (Any one Surface Water (A1) ligh Water Table (A2 saturation (A3) Vater Marks (B1) (No	EDOX indicator is s ) nriverine) 2) (Nonriverin 36)	sufficient)	Salt Cru Biotic C Aquatic Hydrog X Oxidize Presend Recent Plowed	ust (B11) Crust (B12) Invertebr en Sulfide d Rhizosp ce of Redu Iron Redu d Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in	H4 DR 1	Secondary In Secondary In Wate Sedi Drift Drift Drair Dry-1 Thin Cray Satu Aeria	ndicators (2 or more required er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) nage Patterns (B10)
Rema Hydro Netlar Primary S S S S S S S S S S S S S S S S S S S	rks CLEAR R ology nd Indicators Indicators (Any one Surface Water (A1) ligh Water Table (A2 saturation (A3) Vater Marks (B1) (No sediment Deposits (B surface Soil Cracks (I sundation Visible on verial Imagery (B7)	EDOX indicator is s ) nriverine) 2) (Nonriverin 36)	sufficient)	Salt Cru Biotic C Aquatic Hydrog X Oxidize Presend Recent Plowed	ust (B11) Crust (B12) Invertebr en Sulfide d Rhizosp ce of Redu Iron Redu d Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in ))	H~U DR2 (	Secondary Ir Secondary Ir Wate Sedir Drair Drair Dry-S Thin Cray Satur Aeria Shall FAC	ndicators (2 or more required er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible on al Imagery (C9) low Aquitard (D3) -Netural Test (D5)
Reman Hydro Vetlar Primary S S S S S S S S S S S S S S S S S S S	rks CLEAR R ology nd Indicators Indicators (Any one Surface Water (A1) ligh Water Table (A2 saturation (A3) Vater Marks (B1) (No sediment Deposits (B surface Soil Cracks (I sundation Visible on verial Imagery (B7) Vater-Stained Leaves	EDOX indicator is s ) nriverine) 2) (Nonriverin 36)	ne)	Salt Cru Biotic C Aquatic Hydrog X Oxidize Presend Recent Plowed	ust (B11) Crust (B12) Invertebr en Sulfide d Rhizosp ce of Redu Iron Redu I Soils (C6 Explain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in ))	H~U DR2 (	Secondary Ir Secondary Ir Wate Sedir Drair Drair Dry-S Thin Cray Satur Aeria Shall FAC	ndicators (2 or more required er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible-on al Imagery (C9) low Aquitard (D3)
Reman Hydro Wetlar Primary S S S S S S S S S S S S S S S S S S S	rks CLEAR R ology nd Indicators Indicators (Any one Surface Water (A1) ligh Water Table (A2 Saturation (A3) Vater Marks (B1) (No sediment Deposits (B surface Soil Cracks (B surface Soil Cr	EDOX indicator is s indicator is s ) nriverine) 2) (Nonriverin 36) 5 (B9) No	sufficient)	Salt Cru Biotic C Aquatic Y Oxidize Present Plowed Other (I	ust (B11) Crust (B12) Invertebr en Sulfide ed Rhizosp ce of Redu Iron Redu Iron Redu Soils (C6 Explain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in ))	H~U DR2 (	Secondary Ir Secondary Ir Wate Sedir Drair Drair Dry-S Thin Cray Satur Aeria Shall FAC	ndicators (2 or more required er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible on al Imagery (C9) low Aquitard (D3) -Netural Test (D5)

Remarks WEAN WETUTND HYDROLOGY INDICATORS.

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North State Resources				Hobitot Type	GRASSLAND
Wetland Determination Data Form - Arid V	Nest Reg	lion		Wetland Type	SEASONAL WAL
Project/Site:Sisk Dam Corrective Action Project			Marcad County		
Applicant/Owners U.C. Purses of Declaration			Merced County	State: C	A_Sampling Point: 3/
Applicant/Owner: U.S. Bureau of Reclamation					A_ Samping Found
Investigator(s): J. Colescott					Share & A.Z.
Landform (hillslope, terrace, etc.) MINOL DEBLE	7918N	Local relief	(concave, convex	(, none) Coro C	Ent Conversion
Subregion (LRR)	So	il Map Unit Nar	me: <u>Nevot</u>	JUYENS,	TYJ. GRAVELLY
Are climatic/hydrologic conditions on the site typical for this					
Are vegetation, soil, or hydrology signif	icantly distu	rbed? Are norm	mal circumstances	s present?	2
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natur	ally problem	atic? (If neede	ed, explain any an	swers in Remarks	s.)
Summary of Findings (Attach site map showing					
Hydrophytic vegetation? 155 Hydric soil? 159 We	tland hydrolo	Dgy? 4155 1	ls sampled area a	wetland? YF25	Other waters? <u>NG</u>
USACE Jurisdiction Adjacent to Waters X Tributary to Waters M Isolai Explain:	ted (with inte	erstate commer	rce) Isolate	ed (non jurisdiction	nal)
Evaluation of features designated "Of					
Indicators: Defined bed and bank Scour Feature Designation: Peremial Intermittent E	Ephemeral	Blue-line	on USGS Quad		
Natural Drainage Artificial Drai	inage	Navigable Wa	ater		
Remarks SMALL POLYDON WOHF	ERE A	ALL THE	E VPLANT	GRASS	ES FEU
OUT + THE HORDENM 15 C					
USE DE LO RE UPAND	FAR	-			
USE DP 30 the UPLAND	FAIR.	•			
	-		ndicator Dom	inance Test Wor	ksheet
Vegetation	Absolute % Cover	Dominant Ir	Status Num	ber of dominant s	pecies
Vegetation	Absolute % Cover		Status Num		pecies
Vegetation Tree Stratum (use scientific names)	Absolute % Cover	Dominant Ir	Status Num that a	ber of dominant s are OBL, FACW, (	pecies or FAC: (A) nant species
Vegetation Tree Stratum (use scientific names)	Absolute % Cover	Dominant Ir	Status Num that a	ber of dominant s	pecies or FAC: (A)
Vegetation Tree Stratum (use scientific names)	Absolute % Cover	Dominant Ir	Status Num <u>Status</u> Num that a	ber of dominant s are OBL, FACW, number of domin s all strata:	pecies or FAC: (A) nant species (B)
Vegetation Tree Stratum (use scientific names)	Absolute <u>% Cover</u>	Dominant Ir	Status Num Status Total Total Acros	ber of dominant s are OBL, FACW, o number of domin	pecies or FAC: (A) mant species (B) pecies that
Vegetation Tree Stratum (use scientific names)	Absolute <u>% Cover</u> <u></u> <u>% Cover</u>	Dominant Ir Species? S  Species? S	Status     Num       Status     Num       Total     acros       Status     Perce       Status     are C	ber of dominant s are OBL, FACW, number of domin s all strata: ent of dominant s DBL, FACW, or FA	pecies or FAC: (A) hant species (B) pecies that (AB)
Vegetation Tree Stratum (use scientific names)  50%= 20%= Total Cover Total Cover Tapling/Shrub Stratum (use scientific names)	Absolute <u>% Cover</u> <u>% Cover</u>	Dominant Ir Species? S Species? S Species? S	Status Num Status Num Total acros Status are C Preva	ber of dominant s are OBL, FACW, o number of domin ss all strata: ent of dominant sp	pecies or FAC: (A) hant species (B) pecies that (AB)
Vegetation         Tree Stratum (use scientific names)	Absolute <u>% Cover</u> <u>% Cover</u>	Dominant Ir Species? S Species? S Species? S	Status     Num       Status     Num       Total     acros       Status     Perce       Status     Preve       Total     acros	ber of dominant s are OBL, FACW, o number of domin s all strata: ent of dominant s DBL, FACW, or FA alence Index Wo % Cover of:	pecies or FAC: (A) nant species (B) pecies that (AB) rksheet
/egetation         ree Stratum (use scientific names)	Absolute <u>% Cover</u> <u>% Cover</u>	Dominant Ir Species? S  Species? S	Status     Nuministree       Status     Total       Across     Perces       Status     are C       Marcel     Total       OBL     OBL	ber of dominant s are OBL, FACW, d number of domin ss all strata: ent of dominant s DBL, FACW, or FA alence Index Wo % Cover of: Species	pecies or FAC: (A) nant species (B) pecies that (AB) rksheet Multiply by
Vegetation         Free Stratum (use scientific names)	Absolute <u>% Cover</u> <u>% Cover</u> <u>% Cover</u>	Dominant Ir Species? S Species? S	Status     Num       Status     Total       acros     Perce       Status     are C       Status     Prevent       OBL     FAC	ber of dominant s are OBL, FACW, d number of domin ss all strata: ent of dominant s DBL, FACW, or FA alence Index Wo % Cover of: Species N Species	pecies or FAC:(A) pecies that(B) pecies that(AB) AC:(AB) rksheet X1 = X2 =
Vegetation Tree Stratum (use scientific names)  50%=20%=Total Cover Total Cover Total Cover 50%=20%=Total Cover 50%=20%=Total Cover Total Cover Stratum (use scientific names)	Absolute <u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>% Cover</u>	Dominant Ir Species? S Species? S Species? S Species? S	Status     Num       Status     Total       across     Perce       Status     Perce       Total     across       Status     Perce       Gata     Preval       Total     across       Status     FAC       Status     FAC       Status     FAC	ber of dominant s are OBL, FACW, d number of domin ss all strata: ent of dominant s OBL, FACW, or FA alence Index Wo <u>% Cover of:</u> Species Species Species	pecies or FAC:(A) ant species (B) pecies that(AB) AC:(AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB)
/egetation         ree Stratum (use scientific names)	Absolute <u>% Cover</u> <u>% Cover</u> % Cover	Dominant Ir Species? S Species? S Species? S Species? S	Status     Num       Status     Total       across     Perce       Status     Perce       Total     across       Status     Percev       Total     OBL       FAC     FAC       Status     FAC	ber of dominant s are OBL, FACW, o number of domin ss all strata: ent of dominant s DBL, FACW, or FA alence Index Wo <u>% Cover of:</u> Species Species Species J Species	pecies or FAC:(A) hant species (B) pecies that AC:(AB) rksheet rksheet rksh
Vegetation         Tree Stratum (use scientific names)         50%=	Absolute <u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>1 60</u>	Dominant Ir Species? S Species? S Species? S Species? S	Status     Numithat a       Status     Total       across     Percention       Status     Percention       Status     Prevention       Status     FACN       Status     FACN       Status     FACN       Status     FACN	ber of dominant s are OBL, FACW, or number of domin ss all strata: ent of dominant s DBL, FACW, or FA alence Index Wo % Cover of: Species Species Species Species Species Species	pecies or FAC:(A) ant species (B) pecies that(AB) AC:(AB) arksheet (AB) arksh
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Vegetation         Free Stratum (use scientific names)         50%=         50%=         20%=         Total Cover         Sapling/Shrub Stratum (use scientific names)         50%=         20%=         50%=         20%=         Total Cover         Hordyum I < perinder in the perinder in	Absolute <u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>1 Ó0</u> <u>% Cover</u>	Dominant Ir Species? S Species? S Species? S Yes y Species? S Species? S	Status     Num       Status     Num       Total       across       Perce       are C       Preva       Total       OBL       FAC       FAC       FAC       Colum       Preva       Hydr       Status       Indice       Status	ber of dominant s are OBL, FACW, or number of dominant ss all strata: ent of dominant sp DBL, FACW, or FA alence Index Wo % Cover of: Species	pecies or FAC:(A) ant species (B) pecies that AC:(AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB) <b>rksheet</b> (AB) <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b> <b>rksheet</b>

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### Soils

Depth <u>Matrix</u> nches) <u>Color (moist)</u> <u>%</u>		-eatures oist)%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
-6 2.59 4/2 50	1042 51		<u> </u>	m	GRAVELY	- BYNRE
					5. 	
			·		·	
ypes: C = Concentration D = Depletion		and the second	Location: PL	= Pore Lir		
ydric Soil Indicators: (Applica	able to all LRRs, u	while we cannot the same	an east to the second second			lematic Hydric Soils <sup>3</sup>
Histosol (A1)		Sandy Gleyed N	1. State 1.			ick (A9) (LRR C)
Histic Epipedon (A2)		Sandy Redox (S				ick (A10) (LRR B)
Black Histic (A3)	5 <del></del>	Stripped Matrix	•			d Vetric (F18)
Hydrogen Sulfide (A4)		Loamy Mucky M				ent Materials (TF2)
Stratified Layers (AG) (LRR C	>)	Loamy Gleyed N				ed Sand/Gravel Bars
1 cm Muck (A9) (LRR D)	a <del></del>	Depleted Matrix			Other (E	xplain in Remarks)
Depleted Below Dark Surface	(A11)	Redox Dark Sur	face (F6)			1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
Thick Dark Surface (A12)		Depleted Dark S	Contraction of the second second			ydrophytic vegetation and
Sandy Mucky Mineral (S1)	X	Redox Depressi			wettand hydroid	ogy must be present.
		Vernal Pools (FS	9)			
Restrictive Laver (if present). Type:	ND	Denth (Ir	nches) -	- Hvd	ric Soil? YIES	
D 1		Depth (Ir	nches)	- Hydi	ric Soil? YUES	
Restrictive Layer (if present): Type: Remarks HYDRIC 501L		Depth (Ir	nches)	- Hydi	ric Soil? YUES	
D 1		Depth (Ir	nches)	- Hydi	ric Soil? YUES	
Remarks HYDRIC 5012		Depth (Ir	nches)	- Hydi	ric Soil? YUES	
Remarks HYDRIC 501L Hydrology Wetland Indicators	-5	Depth (Ir	nches)	- Hydi		ators (2 or more required)
Remarks HYDRIC 5012 Hydrology Wetland Indicators Primary Indicators (Any one indicator	r is sufficient)		nches)	Hydi	Secondary Indic	ators (2 or more required)
Remarks HYDRIC 5012 Hydrology Wetland Indicators Primary Indicators (Any one indicator Surface Water (A1)	is sufficient)	Salt Crust (B11)		- Hydi	Secondary Indic	arks (B1) (Riverine)
Remarks HYDRIC 5012 Hydrology Wetland Indicators Primary Indicators (Any one indicator Surface Water (A1) High Water Table (A2)	r is sufficient)	Salt Crust (B11) Biotic Crust (B12	2)	Hydi	Secondary Indic	arks (B1) (Riverine) It Deposits (B2) (Riverine)
Remarks HYDRIC 5012 Hydrology Wetland Indicators Primary Indicators (Any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3)	is sufficient)	Salt Crust (B11) Biotic Crust (B12 Aquatic Inverteb	?) rates (B13)	- Hydi	Secondary Indic	arks (B1) (Riverine) It Deposits (B2) (Riverine) Dosits (B3) (Riverine)
Remarks HYDRIC 5072 Hydrology Wetland Indicators Primary Indicators (Any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine)	r is sufficient)	Salt Crust (B11) Biotic Crust (B12 Aquatic Invertebr Hydrogen Sulfide	?) rates (B13) ∋ Odor (C1)	Hydi	Secondary Indic Water M Sedimen Drift Dep Drainage	arks (B1) (Riverine) It Deposits (B2) (Riverine) posits (B3) (Riverine) Patterns (B10)
Remarks HYDRIC 5012 Hydrology Wetland Indicators Primary Indicators (Any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3)	r is sufficient)	Salt Crust (B11) Biotic Crust (B12 Aquatic Inverteb	?) rates (B13) ∋ Odor (C1)	<u>Hyd</u>	Secondary Indic Water M Sedimen Drift Dep Drainage	arks (B1) (Riverine) It Deposits (B2) (Riverine) Dosits (B3) (Riverine)
Remarks HYDRIC 5072 Hydrology Wetland Indicators Primary Indicators (Any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine)	verine)	Salt Crust (B11) Biotic Crust (B12 Aquatic Invertebr Hydrogen Sulfide	2) rates (B13) e Odor (C1) pheres (C3)		Secondary Indic	arks (B1) (Riverine) It Deposits (B2) (Riverine) posits (B3) (Riverine) Patterns (B10)
Remarks HYDRIC 5072 Hydrology Wetland Indicators Primary Indicators (Any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonri Surface Soil Cracks (B6) Inundation Visible on	verine)	Salt Crust (B11) Biotic Crust (B12 Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C4 uction in		Secondary Indic Water M Sedimen Drift Dep Drainage Dry-Sea Thin Muc Crayfish	arks (B1) (Riverine) at Deposits (B2) (Riverine) posits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ck Surface (C7) Burrows (C8)
Remarks HYDRIC 5072 Hydrology Wetland Indicators Primary Indicators (Any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonri Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)	verine)	Salt Crust (B11) Biotic Crust (B12 Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Plowed Soils (Ce	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C- uction in 6)		Secondary Indic Water M Sedimen Drift Dep Drainage Dry-Sea Thin Muc Crayfish Saturatio	arks (B1) (Riverine) at Deposits (B2) (Riverine) posits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ck Surface (C7) Burrows (C8) on Visible on
Remarks HYDRIC 5072 Hydrology Wetland Indicators Primary Indicators (Any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonri Surface Soil Cracks (B6) Inundation Visible on	verine)	Salt Crust (B11) Biotic Crust (B12 Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C- uction in 6)		Secondary Indic Water M Sedimen Drift Dep Drainage Dry-Sea Thin Muc Crayfish Saturatio Aerial In	arks (B1) (Riverine) at Deposits (B2) (Riverine) posits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ck Surface (C7) Burrows (C8) on Visible on magery (C9)
Remarks HYDRIC 5072 Hydrology Wetland Indicators Primary Indicators (Any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonri Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)	verine)	Salt Crust (B11) Biotic Crust (B12 Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Plowed Soils (Ce	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C- uction in 6)		Secondary Indic Water M Sedimen Drift Dep Drainage Dry-Sea Thin Muc Crayfish Saturatio Aerial In Shallow	arks (B1) (Riverine) at Deposits (B2) (Riverine) posits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ok Surface (C7) Burrows (C8) on Visible on magery (C9) Aquitard (D3)
Remarks HYDRIC 5012 Hydrology Wetland Indicators Primary Indicators (Any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonri Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	verine)	Salt Crust (B11) Biotic Crust (B12 Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Plowed Soils (Ce	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C- uction in 6)		Secondary Indic Water M Sedimen Drift Dep Drainage Dry-Sea Thin Muc Crayfish Saturatio Aerial In Shallow	arks (B1) (Riverine) at Deposits (B2) (Riverine) posits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ck Surface (C7) Burrows (C8) on Visible on magery (C9)
Remarks HYDRIC 5012 Hydrology Wetland Indicators Primary Indicators (Any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonri Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations	verine)	Salt Crust (B11) Biotic Crust (B12 Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Red Plowed Soils (Co Other (Explain in	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C- uction in 6)	4)	Secondary Indic Water M Sedimen Drift Dep Drainage Dry-Sea Thin Muc Crayfish Saturatio Aerial In Shallow	arks (B1) (Riverine) at Deposits (B2) (Riverine) posits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ck Surface (C7) Burrows (C8) on Visible on hagery (C9) Aquitard (D3) ural Test (D5)
Remarks       HYDRIC 5012         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator	verine)	Salt Crust (B11) Biotic Crust (B12 Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Plowed Soils (Cr Other (Explain in	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C- uction in 6)	4)	Secondary Indic Water M Sedimen Drift Dep Drainage Dry-Sea Thin Muc Crayfish Saturatio Aerial In Shallow	arks (B1) (Riverine) at Deposits (B2) (Riverine) posits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ck Surface (C7) Burrows (C8) on Visible on hagery (C9) Aquitard (D3) ural Test (D5)
Remarks HYDRIC 5012 Hydrology Wetland Indicators Primary Indicators (Any one indicator Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonri Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations	verine)	Salt Crust (B11) Biotic Crust (B12 Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Red Plowed Soils (Co Other (Explain in	2) rates (B13) e Odor (C1) pheres (C3) luced Iron (C- uction in 6)	4)	Secondary Indic Water M Sedimen Drift Dep Drainage Dry-Sea Thin Muc Crayfish Saturatio Aerial In Shallow	arks (B1) (Riverine) at Deposits (B2) (Riverine) posits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ck Surface (C7) Burrows (C8) on Visible on hagery (C9) Aquitard (D3) ural Test (D5)

North State Resources				Habitat Type _ GRASSIAN D
Wetland Determination Data Form - Arid W	est Reg	ion		Wetland Type SEASONAL WTUS
Project/Site: <u>Sisk Dam Corrective Action Project</u>		Citu/Count	w Morcod	County Sampling Date: 9/3/8
Applicant/Owner:U.S. Bureau of Reclamation		City/Count	y. <u>Interceu</u>	State: CA Sampling Point: 32
Investigator(s):J. Colescott				
Landform (hillslope, terrace, etc.) MINOR DEPRES	SION	Local rel	of (concave	CONVEX Slope % 2%
Subregion (LRR)	Col	LOCALIER	lomo: Val	rofluvents Very Gravelly
Are climatic/hydrologic conditions on the site typical for this ti				
이 가슴 이 것은 것은 것 같아요. 것은 것 같았는지 것 같아요. 이 것은 것 같아요. 이 가슴은 것이 가슴을 가슴을 가슴을 가슴을 가슴을 가슴을 가슴을 가슴을 가슴다. 나는 것은 것을 가슴다. 나는 것은 것을 가슴을 가슴다. 나는 것은 것을 가슴 가슴다. 나는 것은 것을 가슴 다. 나는 것은 것을 가슴 다. 나는 것은 것을 것을 것을 수 있다. 나는 것은 것을 가슴 다. 나는 것이 같이				
Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u> signific	antiy distur	Ded? Are n	ormal circum	istances present?
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natural	lly problema	atic? (If nee	eded, explain	any answers in Remarks.)
Summary of Findings (Attach site map showing				
Hydrophytic vegetation? YES Hydric soil? YES Wetta	and hydrolo	gy? 4ES	Is sampled	area a wetland? <u>16</u> Other waters? <u>No</u>
USACE Jurisdiction Adjacent to Waters <u>2</u> Isolate Explain:	d (with inte	rstate comm	erce)	Isolated (non jurisdictional)
Evaluation of features designated "Otl	her Wat	ers of t	he Unite	ed States"
Indicators: Defined bed and bank Scour	Ordin	ary High Wa	ater Mark Ma	apped
Feature Designation: Pereprial Intermittent Ep	hemeral	Blue-lin	e on USGS	Quad
Natural Drainage Artificial Drain Remarks	age	Navigable	Nater	·
Tree Stratum (use scientific names)	Absolute <u>% Cover</u>	Dominant Species?		Dominance Test Worksheet Number of dominant species that are OBL, FACW, or FAC:(A)
Vegetation Tree Stratum (use scientific names) 	<u>% Cover</u>			Number of dominant species
Tree Stratum (use scientific names)           1.           2.           3.           50%=20%=	<u>% Cover</u>	<u>Species?</u> 	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       D       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that       (L)
Tree Stratum (use scientific names)	<u>% Cover</u>		<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC: (A) Total number of dominant species (B)
Tree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u> 	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC: (A) Total number of dominant species across all strata: (B) Percent of dominant species that are OBL, FACW, or FAC: (AB) Prevalence Index Worksheet
Tree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	Status Status	Number of dominant species that are OBL, FACW, or FAC:       Q       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       66       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by
Tree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	Status Status	Number of dominant species that are OBL, FACW, or FAC:       Q
Tree Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	Status Status	Number of dominant species that are OBL, FACW, or FAC:       Q       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       66       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by
Tree Stratum (use scientific names)	% Cover % Cover	Species? Species? Species?	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       Q(A)         Total number of dominant species across all strata:       3(B)         Percent of dominant species that are OBL, FACW, or FAC:       66(AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species
Tree Stratum (use scientific names)	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> % Cover	<u>Species?</u>	Status Status Status	Number of dominant species that are OBL, FACW, or FAC:       Q       (A)         Total number of dominant species across all strata:       G       (B)         Percent of dominant species that are OBL, FACW, or FAC:       G       (A)         Prevalence Index Worksheet Total % Cover of:       Multiply by       (A)         OBL Species       x1 =
Tree Stratum (use scientific names)	<u>% Cover</u> <u>% Cover</u> % Cover	Species?	Status Status Status	Number of dominant species that are OBL, FACW, or FAC:       Q       (A)         Total number of dominant species across all strata:       G       (B)         Percent of dominant species that are OBL, FACW, or FAC:       G       (A)         Percent of dominant species that are OBL, FACW, or FAC:       G       (A)         Prevalence Index Worksheet       G       (AB)         Prevalence Index Worksheet       Multiply by       OBL Species         Total % Cover of:       Multiply by       X1 =         FACW Species       X2 =       X2 =         FAC Species       X3 =       X4 =
Tree Stratum (use scientific names)	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>25</u> 25	Species?	Status Status Status FAC W	Number of dominant species that are OBL, FACW, or FAC:       Q       (A)         Total number of dominant species across all strata:       G       (B)         Percent of dominant species that are OBL, FACW, or FAC:       G       (A)         Prevalence Index Worksheet Total % Cover of:       Multiply by       (A)         OBL Species       x1 =
Tree Stratum (use scientific names)	% Cover % Cover % Cover 25 25 25	Species?	Status Status Status FACW OBL	Number of dominant species that are OBL, FACW, or FAC:       Q       (A)         Total number of dominant species across all strata:       G       (B)         Percent of dominant species that are OBL, FACW, or FAC:       G       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by       (AB)         OBL Species       x1 =
Tree Stratum (use scientific names) 50%=	% Cover % Cover % Cover 25 25 25	Species?	Status Status FACU OBL FACU	Number of dominant species that are OBL, FACW, or FAC: $\bigcirc$ $\bigcirc$ $\bigcirc$ $\bigcirc$ $\bigcirc$ $\bigcirc$ $(A)$ Total number of dominant species across all strata: $\bigcirc$
Tree Stratum (use scientific names)	% Cover % Cover % Cover 25 25 10 5	Species?	Status Status Status FACW OBL	Number of dominant species that are OBL, FACW, or FAC:       Q       (A)         Total number of dominant species across all strata:       G       (B)         Percent of dominant species that are OBL, FACW, or FAC:       G       (A)         Percent of dominant species that are OBL, FACW, or FAC:       G       (A)         Prevalence Index Worksheet Total % Cover of:       Multiply by       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by       (AB)         OBL Species       x1 =
Tree Stratum (use scientific names)	% Cover % Cover % Cover 25 25 10 5	Species?	Status Status FACU OBL FACU	Number of dominant species that are OBL, FACW, or FAC:       Q       (A)         Total number of dominant species across all strata:       G       (B)         Percent of dominant species that are OBL, FACW, or FAC:       G       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by       (AB)         Prevalence Index Worksheet       x 1 =       (AB)         FACW Species       x 2 =       (AB)         FACU Species       x 3 =       (AB)         FACU Species       x 4 =       (AB)         UPL Species       x 5 =       (AB)         Prevalance Index = B/A =       (A)       (B)         Prevalance Index = B/A =       (A)       (B)         Prevalance Index = B/A =       (A)       (B)         Multiply to Vegetation Indicators       (A)       (B)
Tree Stratum (use scientific names) 50%=	% Cover % Cover % Cover ≥5 25 10 5	Species?	Status Status FACU OBL FACU	Number of dominant species that are OBL, FACW, or FAC: $\bigcirc$ $\bigcirc$ $\bigcirc$ $(A)$ Total number of dominant species across all strata: $\bigcirc$ $\bigcirc$ $\bigcirc$ $(A)$ Percent of dominant species that are OBL, FACW, or FAC: $\bigcirc$ $\bigcirc$ $\bigcirc$ $\bigcirc$ Prevalence Index Worksheet Total % Cover of: $\bigcirc$ Multiply by $\bigcirc$ $\bigcirc$ Prevalence Index Worksheet       x1 = $\bigcirc$ $\bigcirc$ $x1 =$ $\bigcirc$ FACW Species       x1 = $x2 =$ $\bigcirc$ $x3 =$ $\bigcirc$ FACW Species       x2 = $x3 =$ $\bigcirc$ $\bigcirc$ $\bigcirc$ FACU Species       x4 = $\bigcirc$ $\bigcirc$ $(B)$ $\bigcirc$ $(B)$ Prevalance Index = B/A = $\bigcirc$ $(A)$ $(B)$ $\bigcirc$ $\bigcirc$ $\bigcirc$ Hydrophytic Vegetation Indicators $\bigcirc$ $\bigcirc$ $\bigcirc$ $\bigcirc$ $\bigcirc$ $\bigcirc$ Morphological Adaptations <sup>1</sup> (provide supporting $\square$ $\square$ $\square$ $\square$ $\square$
Tree Stratum (use scientific names)	% Cover % Cover % Cover 25 25 25 10 5	Species?	Status Status FACW FACW FACW FACW	Number of dominant species that are OBL, FACW, or FAC: $\bigcirc$ $\bigcirc$ $(A)$ Total number of dominant species across all strata: $\bigcirc$ $\bigcirc$ $(A)$ Percent of dominant species that are OBL, FACW, or FAC: $\bigcirc$ $\bigcirc$ $(B)$ Percent of dominant species that are OBL, FACW, or FAC: $\bigcirc$ $\bigcirc$ $(AB)$ Prevalence Index Worksheet Total % Cover of:       Multiply by $\bigcirc$ OBL Species       x 1 = $\bigcirc$ FACW Species       x 2 = $\bigcirc$ FAC Species       x 3 = $\bigcirc$ FACU Species       x 4 = $\bigcirc$ UPL Species       x 5 = $\bigcirc$ Column Totals $(A)$ $(B)$ Prevalance Index = B/A = $\bigcirc$ $\bigcirc$ Morphological Adaptations <sup>1</sup> (provide supportindata in Remarks or on a separate sheet) $\bigcirc$
Tree Stratum (use scientific names)	% Cover           % Cover	Species?	Status Status FACW FACW FACW FACW	Number of dominant species that are OBL, FACW, or FAC: $\bigcirc$ (A)         Total number of dominant species across all strata: $\bigcirc$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $\bigcirc$ (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalence Index = B/A =       (B)         Prevalence Index = B/A =       (B)         Prevalence Index = B/A =       (B)         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supportindata in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation 1 (Explain
Tree Stratum (use scientific names) 50%=	% Cover           % Cover	Species?	Status Status FACW FACW FACW FACW	Number of dominant species that are OBL, FACW, or FAC: $\bigcirc$ $\bigcirc$ $\bigcirc$ $\bigcirc$ $(A)$ Total number of dominant species across all strata: $\bigcirc$
Tree Stratum (use scientific names)	% Cover % Cover % Cover 25 25 10 5 % Cover	Species?	Status Status FACW FACW FACW FACW	Number of dominant species that are OBL, FACW, or FAC: $\bigcirc$ $\bigcirc$ $(A)$ Total number of dominant species across all strata: $\bigcirc$ $\bigcirc$ $(A)$ Percent of dominant species that are OBL, FACW, or FAC: $\bigcirc$ $\bigcirc$ $\bigcirc$ Prevalence Index Worksheet Total % Cover of: $\bigcirc$ $\bigcirc$ $\bigcirc$ Prevalence Index Worksheet $\frown$ $\frown$ $\bigcirc$ Total % Cover of: $\bigcirc$ $\bigcirc$ $\bigcirc$ OBL Species $x 1 =$ $=$ $=$ FACW Species $x 2 =$ $x 3 =$ $=$ FACU Species $x 4 =$ $=$ $(A)$ $(B)$ Prevalence Index = B/A = $(A)$ $(B)$ $(B)$ Prevalance Index = B/A = $(A)$ $(B)$ $(B)$ Prevalence Index is $\leq 3.0^1$ $(A)$ $(B)$ $(B)$ Prevalence Index is $\leq 3.0^1$ $(B)$ $(B)$ $(B)$ Prevalence Index is $\leq 3.0^1$ $(B)$ $(B)$ $(B)$ Prevalence Index is $\leq 3.0^1$ $(B)$ $(B)$ $(B)$ $(B)$ Problematic Hydrophytic Vegetations (provide supportindata in Remarks or on a separate s

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### Soils

Depth ( <u>inches</u> ) ひ - 4   ↓	Matrix Color (moist) OYRY73	90	Co	olor (moist)	<u>%</u> 10	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Levrur	Remarks
1-10 10		80	107E		20	P	M	·	4
Types:         C = C           Lydric Soi         Histo          Histo         Histo	Concentration D = I Indicators: bool (A1) c Epipedon (A2) k Histic (A3) ogen Sulfide (A4) ified Layers (AG) Muck (A9) (LRR eted Below Dark Surface (A y Mucky Mineral	Applicable (LRR C) D) Surface (A 12)	<u>e to</u> all L	Sandy Sandy Stripp Loam Loam Deple Redo:	otherwise y Gleyed N y Redox (S ed Matrix y Mucky N y Gleyed N ted Matrix x Dark Sur	Matrix (S4) (S5) (S6) lineral (F1) Matrix (F2) (F3) face (F6) Surface (F7) ons (F8)		Indicators for Pro 1 cm M 2 cm M Reduce Red Pa Vegetat Other (B <sup>3</sup> Indicators of b	hannel M = Matrix blematic Hydric Soils <sup>3</sup> uck (A9) (LRR C) uck (A10) (LRR B) d Vetric (F18) rent Materials (TF2) ed Sand/Gravel Bars Explain in Remarks) hydrophytic vegetation and ogy must be present.
	ayer (if present)				I Pools (FS Depth (I	?) nches)	Hydr	ric Soil? YES	
Remarks Hydrolo Wetland I	999 ndicators	Soic	s.				Hydr		cators (2 or more required)
Remarks Hydrolo Wetland In Primary India Surface High V Satura Water Sedim X Surface Inunda Aerial	HYDRIC gy	So (C ndicator is riverine) ) (Nonriver 3)	S	nt) Sait C Biotic Aquati Hydrog Oxidiz Preser Recen Plowe	Depth (II rust (B11) Crust (B12 c Inverteb gen Sulfide ed Rhizos nce of Red t Iron Red d Soils (C	e) e) c) e) dor (C1) pheres (C3) luced Iron (0 uction in		Secondary India	cators (2 or more required) Marks (B1) (Riverine) Int Deposits (B2) (Riverine) posits (B3) (Riverine) e Patterns (B10) ason Water Table (C2) ick Surface (C7) n Burrows (C8) en-Visible on magery (C9) Aquitard (D3) etural Test (D5)

Remarks WRIDNO HYDROLOGY

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North State Resources				Habitat Type GRASSLAND
Wetland Determination Data Form - Arid W	lest Reg	ion		Wetland Type UPUND
Project/Site: <u>Sisk Dam Corrective Action Project</u>		CitulCount	w Morood	
Applicant/Owner:U.S. Bureau of Reclamation			y. <u>Ivierceu</u>	State: <u>CA</u> Sampling Point: <u>33</u>
Investigator(s):			<u></u>	
Landform (hillslope, terrace, etc.)		Local rai	of loopoour	MANE Slone % 0-2
Subregion (LRR)LRR-C	Ca	Local rel	ler (concave,	convex, none) to Exp Gravellu
Are climatic/hydrologic conditions on the site typical for this to		· · · · · · · · · · · · · · · · · · ·		
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ signified Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natural	cantiy distur	rbea? Are n	ormal circum	stances present?
Summary of Findings (Attach site map showing				
Hydrophytic vegetation? NO Hydric soil? NO Wet	and hydrolo	bgy? NO	Is sampled	area a wetland? DO Other waters? NO
USACE Jurisdiction Adjacent to Waters Tributary to Waters Isolate Explain: Evaluation of features designated "Oth Indicators: Defined bed and bank Scour Feature Designation Perennial Intermittent Effects	her Wat	ters of t hary High Wa Blue-lir	he Unite ater Mark Ma ie on USGS	ed States"
Natural Drainage Artificial Drain	lage	Navigable	Water	·
Remarks UPLAND PAIR TO	ND	27		
UPUTIO TITE IS	5	74.		2
			-	
Vegetation Tree Stratum (use scientific names)	Absolute	Dominant Species?		Dominance Test Worksheet Number of dominant species
	% Cover	Species?	Status	that are OBL, FACW, or FAC: (A)
2				Total number of dominant species
3.				across all strata:
50%= 20%= Total Cover:			124	Percent of dominant species that
apling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	are OBL, FACW, or FAC: (AB)
·				Prevalence Index Worksheet
				Prevalence index worksheet
	<del>.                                    </del>			Total % Cover of: Multiply by
				Total % Cover of:         Multiply by           OBL Species         x 1 =
50%= 20%= Total Cover:				Total % Cover of:         Multiply by           OBL Species         x 1 =           FACW Species         x 2 =
50%= 20%= Total Cover: erb Stratum (use scientific names)	% Cover	Species?		Total % Cover of:         Multiply by           OBL Species         x 1 =           FACW Species         x 2 =           FAC Species         x 3 =
50%= Total Cover: erb Stratum (use scientific names) Bromos bordeacous	% Cover (@ 0	<u> </u>	FACU	Total % Cover of:       Multiply by         OBL Species       x1 =         FACW Species       x2 =         FAC Species       x3 =         FACU Species       x4 =
50%= 20%= Total Cover: lerb Stratum (use scientific names) Bromos bordeacous Grindelja camporum	% Cover <u>(00</u> 2.5	<u> </u>	FACU	Total % Cover of:       Multiply by         OBL Species       x1 =         FACW Species       x2 =         FAC Species       x3 =         FACU Species       x4 =         UPL Species       x5 =
50%= 20%= Total Cover: lerb Stratum (use scientific names) Bromos Lordea cous Grindelia namporum Bromus diandrug	% Cover (00 2.5 10	Y Y N	FACU FACU VPL	Total % Cover of:       Multiply by         OBL Species       x1 =         FACW Species       x2 =         FAC Species       x3 =         FACU Species       x4 =         UPL Species       x5 =         Column Totals       (A)
50%= 20%= Total Cover: lerb Stratum (use scientific names) Bromos bordeacous Grindelja camporum Bromus diandrug Lepidium latifolium	% Cover (00 2.5 10 5	Y Y N N	FACU	Total % Cover of:       Multiply by         OBL Species       x1 =         FACW Species       x2 =         FAC Species       x3 =         FACU Species       x4 =         UPL Species       x5 =         Column Totals       (A)       (B)         Prevalance Index = B/A =
50%= 20%= Total Cover: leto Stratum (use scientific names) Bromos Lordeacous Grindelia namporum Bromus diandrug Lepidium latifolium	% Cover (00 2.5 10 5	Y Y N N	FACU FACU VPL	Total % Cover of:       Multiply by         OBL Species       x1 =         FACW Species       x2 =         FAC Species       x3 =         FACU Species       x4 =         UPL Species       x5 =         Column Totals       (A)       (B)         Prevalance Index = B/A =
50%= Total Cover: lerb Stratum (use scientific names) Bromos bordeacous Grindelja camporum Bromus diandrug Lepidion latifolium	% Cover (00 2.5 10 5	Y Y N N	FACU FACU VPL	Total % Cover of:       Multiply by         OBL Species       x 1 =         FACW Species       x 2 =         FAC Species       x 3 =         FACU Species       x 4 =         UPL Species       x 5 =         Column Totals       (A)         Prevalance Index = B/A =         Hydrophytic Vegetation Indicators            Dominance Text is >50%
50%= Total Cover: lerb Stratum (use scientific names) Bromos bordeacous Grindelia namporum Bromus diandrug Lepidium latifolium	% Cover (00 2.5 10 5	× × ×	FACU PACU VIL FACU	Total % Cover of:Multiply byOBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals(A)Prevalance Index = B/A =Hydrophytic Vegetation IndicatorsDominance Text is >50%Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supporting)
50%= Total Cover: lerb Stratum (use scientific names) Bromos bordeacous Grindelja camporum Bromus diandrug Lepidium latifolium 50%= 20%= Total Cover:	% Cover (@ 0 2.5 ] 0 5	× × ×	FACU PACU PACU FACU	Total % Cover of:Multiply byOBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals(A)Prevalance Index = B/A =Hydrophytic Vegetation IndicatorsDominance Text is >50%Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supportindata in Remarks or on a separate sheet)
50%= 20%= Total Cover: lerb Stratum (use scientific names) <u>Bromos bordea cous</u> <u>Grindelja camporum</u> <u>Bromus diandrug</u> <u>Lepidiom latifolium</u> 50%= 20%= Total Cover: body/Vine Stratum (use scientific names)	% Cover <u>(00</u> <u>2.5</u> <u>10</u> <u>5</u> % Cover	× × ×	FACU PACU PACU FACU	Total % Cover of:Multiply byOBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals(A)Prevalance Index = B/A =Hydrophytic Vegetation IndicatorsDominance Text is >50%Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supportindata in Remarks or on a separate sheet)Problematic Hydrophytic Vegetation <sup>1</sup> (Explain
50%= Total Cover: lerb Stratum (use scientific names) Bromos bordea cous Grindelia namporum Bromus diandrug Lepidium latifolium 50%= 20%= Total Cover: boody/Vine Stratum (use scientific names)	% Cover <u>(00</u> <u>2.5</u> <u>10</u> <u>5</u> % Cover	× × ×	FACU PACU PACU FACU	Total % Cover of:Multiply byOBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals(A)Prevalance Index = B/A =Hydrophytic Vegetation IndicatorsDominance Text is >50%Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supportint)
50%= 20%= Total Cover: lerb Stratum (use scientific names) <u>Bromos bordea cous</u> <u>Grindelja camporum</u> <u>Bromus diandrug</u> <u>Lepidiom latifolium</u> 50%= 20%= Total Cover: body/Vine Stratum (use scientific names)	% Cover <u>(00</u> <u>2.5</u> <u>10</u> <u>5</u> % Cover	Y           N           N           N           Species?	FACU PACU PACU FACU Status	Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =         UPtrophytic Vegetation Indicators         Ominance Text is >50%         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supportindata in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation <sup>1</sup> (Explain 1/Indicators of hydric soil and wetland hydrology must

### Soils

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~1						
1 1040 5/11 100	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
-6 1048 5/4 100	-	<u>^</u>			<u>GRAVELLY</u>	Catry
pres: C = Concentration D = Depletion RM =	Reduced Matrix	2	ocation: PL	= Pore Lin	ing RC = Root Ch	annel M = Matrix
vdric Soil Indicators: (Applicable to all	LRRs, unless oth	erwise no	oted)		Indicators for Prob	ematic Hydric Soils <sup>3</sup>
Histosol (A1)	Sandy G	Bleyed Ma	atrix (S4)		1 cm Mu	ick (A9) (LRR C)
Histic Epipedon (A2)	Sandy R	edox (S5	5)		2 cm Mu	ick (A10) (LRR B)
Black Histic (A3)	Stripped	Matrix (S	56)		Reduced	d Vetric (F18)
Hydrogen Sulfide (A4)	Loamy M	Aucky Mir	neral (F1)			ent Materials (TF2)
Stratified Layers (AG) (LRR C)	Loamy C	Bleyed Ma	atrix (F2)		Vegetate	ed Sand/Gravel Bars
1 cm Muck (A9) (LRR D)	Depleted	d Matrix (	F3)		Other (E	xplain in Remarks)
Depleted Below Dark Surface (A11)	Redox D	ark Surfa	ace (F6)			
Thick Dark Surface (A12)	Depleted	Dark Su	urface (F7)			ydrophytic vegetation and
Sandy Mucky Mineral (S1)	Redox D	epression	ns (F8)		wetland hydrold	ogy must be present.
	Vernal P	ools (F9)				
Restrictive Layer (if present): Type:		Depth (Inc	ches) <u> </u>	Hydr	ic Soil? NO	
Remarks NIAN HUNDER	16.1. 6					
	50125					_
lydrology Vetland Indicators					Secondary Indic	ators (2 or more required
Iydrology Vetland Indicators rimary Indicators (Any one indicator is sufficient	ent)	et (B11)				ators (2 or more required
Iydrology         Vetland Indicators         rimary Indicators (Any one indicator is sufficient	ent) Salt Crus				Water M	larks (B1) (Riverine)
Iydrology         Vetland Indicators         rimary Indicators (Any one indicator is sufficient	ent) Salt Crus Biotic Cr	ust (B12)			Water M Sedimer	larks (B1) (Riverine) ht Deposits (B2) (Riverine
Iydrology         Vetland Indicators         rimary Indicators (Any one indicator is sufficient	ent) Salt Crus Biotic Cru Aquatic I	ust (B12) nvertebra	ates (B13)		Water M Sedimer Drift Dep	larks (B1) (Riverine) ht Deposits (B2) (Riverine posits (B3) (Riverine)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is sufficient	ent) Salt Crus Biotic Cru Aquatic I Hydrogel	ust (B12) nvertebra n Sulfide	ates (B13) Odor (C1)		Water M Sedimer Drift Dep Drainage	larks (B1) (Riverine) ht Deposits (B2) (Riverine posits (B3) (Riverine) e Patterns (B10)
Iydrology         Vetland Indicators         rimary Indicators (Any one indicator is sufficient	ent) Salt Crus Biotic Crus Aquatic I Hydrogei Oxidized	ust (B12) nvertebra n Sulfide Rhizospl	ates (B13) Odor (C1) heres (C3)		Water M Sedimer Drift Dep Drainage	larks (B1) (Riverine) ht Deposits (B2) (Riverine posits (B3) (Riverine) e Patterns (B10) son Water Table (C2)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is sufficient	ent) Salt Crus Biotic Crus Aquatic I Hydrogel Oxidized Presence	ust (B12) nvertebra n Sulfide Rhizospl e of Redu	ates (B13) Odor (C1) heres (C3) iced Iron (C	4)	Water M Sedimer Drift Dep Drainage Dry-Sea Thin Mu	larks (B1) (Riverine) ht Deposits (B2) (Riverine posits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ck Surface (C7)
Iydrology         Vetland Indicators         rimary Indicators (Any one indicator is sufficient	ent) Salt Crus Biotic Crus Aquatic I Hydrogen Oxidized Presence Recent In	ust (B12) nvertebra n Sulfide Rhizospl e of Redu	ates (B13) Odor (C1) heres (C3) iced Iron (C ction in	4)	Water M Sedimer Drift Dep Drift Dep Drainage Dry-Sea Crayfish	larks (B1) (Riverine) ht Deposits (B2) (Riverine) posits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ck Surface (C7) Burrows (C8)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is sufficient	ent) Salt Crus Biotic Cru Aquatic I Aquatic I Oxidized Oxidized Presence Recent In Plowed	ust (B12) nvertebra n Sulfide Rhizospl of Redu on Reduction Soils (C6)	ates (B13) Odor (C1) heres (C3) iced Iron (C ction in	4)	Water M Sedimer Drift Dep Drainage Dry-Sea Crayfish Saturatio	larks (B1) (Riverine) ht Deposits (B2) (Riverine posits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ck Surface (C7)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is sufficient	ent) Salt Crus Biotic Cru Aquatic I Aquatic I Oxidized Oxidized Presence Recent In Plowed	ust (B12) nvertebra n Sulfide Rhizospl of Redu on Reduction Soils (C6)	ates (B13) Odor (C1) heres (C3) iced Iron (C ction in )	4)	Water M Sedimer Drift Dep Drainage Dry-Sea Thin Mu Crayfish Saturatio Aerial In	larks (B1) (Riverine) ht Deposits (B2) (Riverine) posits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ck Surface (C7) Burrows (C8) on Visible-on
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is sufficient	ent) Salt Crus Biotic Cru Aquatic I Aquatic I Oxidized Oxidized Presence Recent In Plowed	ust (B12) nvertebra n Sulfide Rhizospl of Redu on Reduction Soils (C6)	ates (B13) Odor (C1) heres (C3) iced Iron (C ction in )	4)	Water M Sedimer Drift Dep Drainage Dry-Sea Thin Mu Crayfish Saturatio Aerial In Shallow	larks (B1) (Riverine) at Deposits (B2) (Riverine) posits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ck Surface (C7) Burrows (C8) on Visible-on nagery (C9)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is sufficient	ent)Salt CrusBiotic CruAquatic IAquatic IOxidizedOxidizedPresenceRecent IrPlowedOther (Es	ust (B12) nvertebra n Sulfide Rhizospl of Redu on Redu Soils (C6) kplain in F	ates (B13) Odor (C1) heres (C3) iced Iron (C ction in )		Water M Sedimer Drift Dep Drainage Dry-Sea Thin Mu Crayfish Saturatio Aerial In Shallow FAC-Ne	larks (B1) (Riverine) at Deposits (B2) (Riverine) bosits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ck Surface (C7) Burrows (C8) on Visible on nagery (C9) Aquitard (D3) tural Test (D5)
Hydrology         Vetland Indicators rimary Indicators (Any one indicator is sufficient 	ent) Salt Crus Biotic Cru Aquatic I Aquatic I Oxidized Oxidized Oxidized Presence Recent Ir Other (Es	ust (B12) nvertebra n Sulfide Rhizospl of Redu on Reduc Soils (C6) cplain in F	ates (B13) Odor (C1) heres (C3) iced Iron (C ction in )		Water M Sedimer Drift Dep Drainage Dry-Sea Thin Mu Crayfish Saturatio Aerial In Shallow	larks (B1) (Riverine) at Deposits (B2) (Riverine) bosits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ck Surface (C7) Burrows (C8) on Visible on nagery (C9) Aquitard (D3) tural Test (D5)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is sufficient	ent) Salt Crus Biotic Cru Aquatic I Aquatic I Oxidized Oxidized Oxidized Presence Recent Ir Other (Es	ust (B12) nvertebra n Sulfide Rhizospl of Redu on Reduc Soils (C6) kplain in F	ates (B13) Odor (C1) heres (C3) loced Iron (C ction in ) Remarks)		Water M Sedimer Drift Dep Drainage Dry-Sea Thin Mu Crayfish Saturation Aerial In Shallow FAC-Net Hydrology? Yes	larks (B1) (Riverine) at Deposits (B2) (Riverine) bosits (B3) (Riverine) e Patterns (B10) son Water Table (C2) ck Surface (C7) Burrows (C8) on Visible on nagery (C9) Aquitard (D3) tural Test (D5)

Wetland Determination Data Form - Arid W		Habitat Type <u>GRTSSLAND</u> Wetland Type <u>UPLAND</u>
Project/Site: <u>Sisk Dam Corrective Action Project</u> Applicant/Owner: <u>U.S. Bureau of Reclamation</u> Investigator(s): <u>J. Colescott</u>		State: <u>CA</u> Sampling Point: <u>&gt;7</u>
Landform (hillslope, terrace, etc.) PLAIN Subregion (LRR) LRR-C Are climatic/hydrologic conditions on the site typical for this ti	Soil Map Unit Name:	wents, extremely gravelly
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ signific Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natural	cantly disturbed? Are normal circumstanc	es present? 1/25
Summary of Findings (Attach site map showing Hydrophytic vegetation? NO Hydric soil? NO Weth		
USACE Jurisdiction Adjacent to Waters Isolate Explain:	ed (with interstate commerce) Isola	ated (non jurisdictional)
Evaluation of features designated "Otlendicators:       Defined bed and bank Scour         Feature Designation:       Perennial IntermittentEp         Natural Drainage Artificial Drain	Ordinary High Water Mark Mapped ohemeral Blue-line on USGS Quad	
Remarks UPLAND SWALE - NUM EVENTS, BUT CORRENTLY ITTO MELT OR INDICATORS OF FLOO	ERE ARE NO WE	ETLAND PARAMETERS
Vegetation Tree Stratum (use scientific names)	% Cover Species? Status Nu	minance Test Worksheet mber of dominant species t are OBL, FACW, or FAC: (A)
2	acr	al number of dominant species (B)
50%= Z0%= Total Cover: Sapling/Shrub Stratum (use scientific names) 1. Baccharis Dilularis	4 YES IDPL	OBL, FACW, or FAC: _25_ (AB)
2	<u>Tot</u>	All Worksheet       al % Cover of:     Multiply by       L Species     x 1 =
4	4 FA	CW Species         x2 =           C Species         x3 =           CU Species         x4 =
1. Bromus hordeacous 2. Hordeur leporinum 3. Bromus madriteusis	25 Y FAC UP	CU Species         x 4 =           L Species         x 5 =           umn Totals         (A)
4. Bronus d'andrus 5. Eradium Datras	10 N UPL Pre	valance Index = B/A = drophytic Vegetation Indicators
6	_	<ul> <li>Dominance Text is &gt;50%</li> <li>Prevalence Index is ≤ 3.01</li> <li>Morphological Adaptations1 (provide supporting data in Remarks or on a separate sheet)</li> </ul>
Woody/Vine Stratum (use scientific names) 1	% Cover Species? Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) licators of hydric soil and wetland hydrology must present.
2 20%= Total Cover: % Bare Ground in Herb Stratum 20 % Cover of Biot	Нус	Irophytic Vegetation? <u>NO</u>

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### Soils

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inches) Color (moist) %	Color (moist)	<u>%</u> Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
2-3 104R 4/3 100	~		~	GRAVELLY	
3-8 104R 9/4 100	-	~ -	-	n	и
Types: C = Concentration D = Depletion F	RM = Reduced Matrix	<sup>2</sup> Location: P	L = Pore Li	ning RC = Root C	hannel M = Matrix
lydric Soil Indicators: (Applicable to	o all LRRs, unless ott	herwise noted)		Indicators for Pro	blematic Hydric Soils <sup>3</sup>
Histosol (A1)	Sandy (	Gleyed Matrix (S4)		1 cm M	luck (A9) (LRR C)
Histic Epipedon (A2)	Sandy F	Redox (S5)		2 cm M	luck (A10) (LRR B)
Black Histic (A3)	Stripped	d Matrix (S6)		Reduce	ed Vetric (F18)
Hydrogen Sulfide (A4)	Loamy I	Mucky Mineral (F1)			arent Materials (TF2)
Stratified Layers (AG) (LRR C)	Loamy (	Gleyed Matrix (F2)			ted Sand/Gravel Bars
1 cm Muck (A9) (LRR D)	Deplete	d Matrix (F3)		Other (	Explain in Remarks)
Depleted Below Dark Surface (A11	l) Redox [	Dark Surface (F6)		123	
Thick Dark Surface (A12)	Deplete	d Dark Surface (F7)	)		hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Redox [	Depressions (F8)		wetland hydro	logy must be present.
	Vernal F	Pools (F9)			
Remarks NON - HYDRIC		Depth (Inches)	— Hyd	Iric Soil? 100	
Hydrology Wetland Indicators	SOILS	Depth (Inches)	— Hyd		cators (2 or more required)
Remarks NOW - HYDRIC Hydrology Wetland Indicators Primary Indicators (Any one indicator is su	ufficient)		<u> </u>	Secondary Indi	cators (2 or more required) Marks (B1) (Riverine)
Remarks NOW - HYDRIC Hydrology Wetland Indicators Primary Indicators (Any one indicator is su Surface Water (A1)	ufficient)	st (B11)	<u> </u>	Secondary Indi	Marks (B1) (Riverine)
Remarks NOW - HYDR/C Hydrology Wetland Indicators Primary Indicators (Any one indicator is su Surface Water (A1) High Water Table (A2)	ufficient) Salt Cru	st (B11) rust (B12)		Secondary Indi	Marks (B1) (Riverine) ent Deposits (B2) (Riverine)
Remarks NOW - HYDRIC Hydrology Wetland Indicators Primary Indicators (Any one indicator is su Surface Water (A1) High Water Table (A2) Saturation (A3)	ufficient)Salt CruBiotic CrAquatic	st (B11) rust (B12) Invertebrates (B13)		Secondary Indi	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine)
Remarks       NOW + HYDRIC         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is su	ufficient) Salt Cru Biotic Cr Aquatic Hydroge	st (B11) rust (B12) Invertebrates (B13) en Sulfide Odor (C1)	)	Secondary Indi	Marks (B1) (Riverine) ent Deposits (B2) (Riverine)
Remarks       NOW - HYDRIC         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is su	ufficient) Salt CruBiotic CrAquaticHydroge a)Oxidized	st (B11) rust (B12) Invertebrates (B13) en Sulfide Odor (C1) I Rhizospheres (C3	)	Secondary Indi Water I Sedime Drift De Drainag Dry-Se	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10)
Remarks       NOW + HYDRIC         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is su	ufficient)  Ifficient)  Salt Crue Biotic Cr Aquatic Hydroge Oxidized Presence	st (B11) rust (B12) Invertebrates (B13) en Sulfide Odor (C1)	)	Secondary Indi	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2)
Remarks       NOW - HYDRIC         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is su	ufficient) Salt Crue Biotic Crue Aquatic Hydroge Oxidized Presence Recent I	st (B11) rust (B12) Invertebrates (B13) en Sulfide Odor (C1) I Rhizospheres (C3 e of Reduced Iron (	)	Secondary Indi Water I Sedime Drift De Dry-Se Thin M Crayfis	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7)
Remarks       NOW + HYDRIC         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is su	ufficient)	st (B11) rust (B12) Invertebrates (B13) en Sulfide Odor (C1) I Rhizospheres (C3 e of Reduced Iron ( ron Reduction in	)	Secondary Indi Sedime Sedime Drift De Drinag Dry-Se Thin M Sedima	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8)
Remarks       NOW - HYDRIC         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is su	ufficient)	st (B11) rust (B12) Invertebrates (B13) en Sulfide Odor (C1) I Rhizospheres (C3 e of Reduced Iron ( ron Reduction in Soils (C6)	)	Secondary Indi	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) ion Visible on
Remarks       NOW - HYDRIC         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is su	ufficient)	st (B11) rust (B12) Invertebrates (B13) en Sulfide Odor (C1) I Rhizospheres (C3 e of Reduced Iron ( ron Reduction in Soils (C6)	)	Secondary Indi	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) ion Visible on Imagery (C9)
Remarks       NOW - HYDRIC         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is su	ufficient)	st (B11) rust (B12) Invertebrates (B13) en Sulfide Odor (C1) I Rhizospheres (C3 e of Reduced Iron ( ron Reduction in Soils (C6)	) ) C4)	Secondary Indi Water I Sedime Drift De Dry-Se Thin M Crayfis Saturat Shallov FAC-Ne	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) ion Visible on Imagery (C9) v Aquitard (D3)
Remarks       NOW - HYDRIC         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is su	ufficient)	st (B11) rust (B12) Invertebrates (B13) en Sulfide Odor (C1) I Rhizospheres (C3 e of Reduced Iron ( ron Reduction in Soils (C6) xplain in Remarks)	) ) C4)	Secondary Indi	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) ion Visible on Imagery (C9) v Aquitard (D3)
Remarks       NOW - HUDRIC         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is su	ufficient) Salt Cru Biotic Cr Aquatic Hydroge e)Oxidized Recent I Plowed Other (E	st (B11) rust (B12) Invertebrates (B13) en Sulfide Odor (C1) I Rhizospheres (C3 e of Reduced Iron ( ron Reduction in Soils (C6) xplain in Remarks)	) ) C4)	Secondary Indi Water I Sedime Drift De Dry-Se Thin M Crayfis Saturat Shallov FAC-Ne	Marks (B1) (Riverine) ent Deposits (B2) (Riverine) eposits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) h Burrows (C8) ion Visible on Imagery (C9) v Aquitard (D3)

ŝ	North State Resources	Habitat Type GRASSLAND
	Wetland Determination Data Form - Arid West Region	Wetland Type SEASONIA WIND
	Project/Site: <u>Sisk Dam Corrective Action Project</u> City/County: <u>Merced C</u> Applicant/Owner: <u>U.S. Bureau of Reclamation</u>	
	Investigator(s): J. Colescott Landform (hillslope, terrace, etc.) Local relief (concave, of Subregion (LRR) LRR-C Soil Map Unit Name: Xere	convex, none) <u>CONCLUE</u> slope % <u>2-4</u> %
	Are climatic/hydrologic conditions on the site typical for this time of year? $\underline{4feS}$ (If no, explain Are vegetation $\underline{N}$ , soil $\underline{P}$ , or hydrology $\underline{N}$ significantly disturbed? Are normal circums Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ naturally problematic? (If needed, explain	in remarks.) stances present? YK-5
	Summary of Findings (Attach site map showing sampling point locations, transects, in Hydrophytic vegetation? $\underline{4E2}$ Hydric soil? $\underline{4E2}$ Wetland hydrology? $\underline{4E2}$ Is sampled	moortant features, etc.)
	USACE Jurisdiction Adjacent to Waters Isolated (with interstate commerce)	
	Explain: Evaluation of features designated "Other Waters of the United Indicators: Defined bed and bank Scour Ordinary High Water Mark Mark Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS O Natural Drainage Artificial Drainage Navigable Water	oped
	Remarks DEPRESSIONAL UNDFORM MELEIS ittE DEST.	- 3-PARAMENER WEILAND
	Vegetation     Absolute     Dominant     Indicator       Tree Stratum (use scientific names)     % Cover     Species?     Status       1.    /    /    /	Dominance Test Worksheet Number of dominant species that are OBL, FACW, or FAC: 3 (A)
	2	Total number of dominant species across all strata:
	50%=     20%=     Total Cover:       Sapling/Shrub Stratum (use scientific names)     % Cover     Species?     Status       1. H4roplex     ent. Formis     5     Y     FAC	Percent of dominant species that 75 (AB) are OBL, FACW, or FAC:
		Prevalence Index Worksheet       Total % Cover of:     Multiply by       OBL Species     x1 =
	4	FACW Species         x 2 =           FAC Species         x 3 =
مر بر محمد محمد م	Herb Stratum (use scientific names)% Cover Species? Status1. Hardeum leporinum402. Brown us hordeacous202. Brown us hordeacous20	FACU Species x 4 = UPL Species x 5 =
	3. Heliotropion curassavicum 20 Y OBL 4. Grindelia camporum 10 NO FACU	Column Totals (A) (B) Prevalance Index = B/A =
	5. Lepidium latitalium <u>5 N</u> FACU 6. Exadium botry <u>5</u> N UPL	Hydrophytic Vegetation Indicators Dominance Text is >50% Prevalence Index is ≤ 3.0 <sup>1</sup> Morphological Adaptations <sup>1</sup> (provide supporting
	50% = 50 $20% = 2x$ Total Cover: $103$ Woody/Vine Stratum (use scientific names)       % Cover Species? Status         I.	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.
1 . S	2	Hydrophytic Vegetation? <u>YES</u>

		Sampling Point
Soils		·
Profile Description: (Describe to the dep Depth Matrix	th needed to document the indicator or co Redox Features	onfirm the absence of indicators.
(inches) Color (moist) %	Color (moist) % Type1 L	<u>oc<sup>2</sup> Texture Remarks</u>
0-3 104R 4/3 95 71	54R 4/6 5 C M	1. CORTVERCY LOTTIN
3-8 104R 5/4 97 7:5	5 YR 5/6 3 C V	<u>M. n /1</u>
		· ·
<sup>1</sup> Types: C = Concentration D = Depletion RM =	Reduced Matrix <sup>2</sup> Location: PL = P	ore Lining RC = Root Channel M = Matrix
Hydric Soil Indicators: (Applicable to all	LRRs, unless otherwise noted)	Indicators for Problematic Hydric Soils <sup>3</sup>
Histosol (A1)	Sandy Gleyed Matrix (S4)	1 cm Muck (A9) (LRR C)
Histic Epipedon (A2)	Sandy Redox (S5)	2 cm Muck (A10) (LRR B)
Black Histic (A3)	Stripped Matrix (S6)	Reduced Vetric (F18)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Red Parent Materials (TF2)
Stratified Layers (AG) (LRR C)	Loamy Gleyed Matrix (F2)	Vegetated Sand/Gravel Bars
1 cm Muck (A9) (LRR D)	Depleted Matrix (F3)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	wetland hydrology must be present.
Sandy Mucky Mineral (S1)	Redox Depressions (F8)	
	Vernal Pools (F9)	
Restrictive Layer (if present): Type:	Depth (Inches)	
Remarks WEAK, BUT 50	FFICIENT INDICATO	
Remarks WEAK, BUT 50 Hydrology		
Remarks WEAK, BUT 50	FFICIENT INDICATO	
Remarks WEAK, BUT 50 Hydrology Wetland Indicators Primary Indicators (Any one indicator is suffici	FFICIENT INDICATO	RS OF MUDRIC SOILS, Secondary Indicators (2 or more required)
Remarks WEAK, BUT 50 Hydrology Wetland Indicators Primary Indicators (Any one indicator is sufficiSurface Water (A1)	FFICIENT     1/0 DICATO       ent)	R5       OF       \$94 DRIC       \$01 L5 ,          Secondary Indicators (2 or more required)          Water Marks (B1) (Riverine)
Remarks       WF2AK       BUT 50         Hydrology       Wetland Indicators         Primary Indicators (Any one indicator is sufficient on the sufficient	EFICIENT INDICATO ent) Salt Crust (B11) Biotic Crust (B12)	R5       OF       \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$
Remarks       WF2AVK,       BUT       SO         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sufficiently indicators (Any one indicator is sufficiently indicators)	ent) Salt Crust (B11) Salt Crust (B12) Aquatic Invertebrates (B13)	R5       OF       \$4 DRIC \$201L5,
Remarks       WF2AK       BUT 50         Hydrology       Wetland Indicators         Primary Indicators (Any one indicator is sufficient or indicator indicator is sufficient or indicator is sufficient or indicator is sufficient or indicator is sufficient or indicator or indited or indited or indited or indicator or indited or indicator or	ent) Salt Crust (B11) Salt Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	R5       OF       Image: Applic Appli
Remarks       WF2AVA,       BUT       SO         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sufficient)	ent) Salt Crust (B11) Salt Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres (C3)	R5       OF       \$4 DRIC \$201L5,         Secondary Indicators (2 or more required)         Water Marks (B1) (Riverine)         Sediment Deposits (B2) (Riverine)         Drift Deposits (B3) (Riverine)         Drainage Patterns (B10)         Dry-Season Water Table (C2)
Remarks       WF2AVA,       BUT       GO         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sufficil)	ent) Salt Crust (B11) Salt Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres (C3) Presence of Reduced Iron (C4)	R5       OF       Image: Applic Appli
Remarks       WF2AVK       BUT       SO         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sufficient)	ent) Salt Crust (B11) XI_Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in	R5       OF       HDRIC SOILS,         Secondary Indicators (2 or more required)         Water Marks (B1) (Riverine)         Sediment Deposits (B2) (Riverine)         Drift Deposits (B3) (Riverine)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Thin Muck Surface (C7)         Crayfish Burrows (C8)
Remarks       WF2AVK,       BUT       SO         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sufficil)	ent) Salt Crust (B11) Al Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Plowed Soils (C6)	R5       OF       Image: Additional and the second and the second arguments of the second argument and the second argument
Remarks       WF2AVK       BUT       SO         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sufficient)	ent) Salt Crust (B11) XI_Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in	R5       OF       Image: Provide and the second
Remarks       WF2AVK       BUT       SO         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sufficient)	ent) Salt Crust (B11) Al Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Plowed Soils (C6)	R5       OF       Image: Additional and the second and the second arguments of the second argument and the second argument
Remarks       WEAK       BUT       SO         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sufficient)	ent) Salt Crust (B11) Salt Crust (B12) Aquatic Invertebrates (B13) Aquatic Invertebrates (B13) Aquatic Invertebrates (B13) Aquatic Invertebrates (C1) Oxidized Rhizospheres (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Plowed Soils (C6) Other (Explain in Remarks)	R5       OF       Image: Provide a state of the
Remarks       WF2AVA, BUT 50         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sufficil)	ent) Salt Crust (B11) Salt Crust (B12) Aquatic Invertebrates (B13) Aquatic Invertebrates (B13) Aquatic Invertebrates (B13) Aquatic Invertebrates (C1) Oxidized Rhizospheres (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Plowed Soils (C6) Other (Explain in Remarks)	R5       OF       Image: Provide a state of the
Remarks       WF2AVA, BUT 50         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sufficil)	ent)  Salt Crust (B11)  Salt Crust (B12)  Aquatic Invertebrates (B13)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres (C3)  Presence of Reduced Iron (C4)  Recent Iron Reduction in  Plowed Soils (C6)  Depth (inches) We	R5       OF       Image: Additional and the second and the sec
Remarks       WEAK, BUT 50         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sufficil)	EFFICIENT       IND DICATO         ent)	R5       OF       Image: Provide a state of the

Remarks SUFFICIENT INDICTIONS OF WEITHID HYDROLOGY.

	North State Resources				Habitat Type Grassland
	Wetland Determination Data Form - Arid W	Vest Reg	jion		Habitat Type Grassland Wetland Type UPLAND
	Project/Site:		City/County	v. Merced	9/14/
	Applicant/Owner:U.S. Bureau of Reclamation			wiciocu	State: <u>CA</u> Sampling Point: <u>36</u>
	Investigator(s):J. Colescott				
	Landform (hillslope, terrace, etc.) SWALE		Local roli	of (concave	CONVEX DODE) CONCLUE Slope % 3 - 5
	Subregion (LRR)	So	Loodi Tell	Isme XP	ro Flovents, Etremely Gravelly
	Are climatic/hydrologic conditions on the site typical for this t	time of year	o VEG A	If no ovolair	n in remarks )
	Are climatic/hydrologic conditions on the site typical for this time of year? $\underline{\Psi FS}$ (If no, explain in remarks.) Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ significantly disturbed? Are normal circumstances present? $\underline{\Psi FS}$				
	Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u> natura				
	Summary of Findings (Attach site map showing	sampling p	oint locations	s, transects,	important features, etc.)
	Hydrophytic vegetation? NO Hydric soil? 475 Wet	land hydrolo	ogy? NO	Is sampled	d area a wetland? <u>ND</u> Other waters? <u>PD</u>
	USACE Jurisdiction Adjacent to Waters Isolate	ed (with inte	erstate comm	erce)	Isolated (non jurisdictional)
	Explain:		· · · · ·		
	Evaluation of features designated "Ot				
	Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad				
	Natural Drainage Natificial Drainage Navigable Water				
	Remarks DEWNGTEFAM END OF WET SWALE, WATFOR MUST				
	FITTER SOAK IN OR SPRE	17 8.		+ A AM	< JUNPAPHUTE VEL
	RITTER SOAR HIS OR SPACE	UTS OF	UT B	ECTOS	R HIDFOILTIC VIG.
	DISAPOPEARS.				
	DISAPPEARS,	Absolute	Dominant	Indicator	Dominance Test Worksheet
		Absolute % Cover			Number of dominant species
	Vegetation	2012/2012/07/07			Number of dominant species (A) that are OBL, FACW, or FAC: (A)
	Vegetation	2012/2012/07/07			Number of dominant species (A) that are OBL, FACW, or FAC: (A) Total number of dominant species <
	Vegetation           Tree Stratum (use scientific names)           1.           2.           3.	<u>% Cover</u>			Number of dominant species 1 (A) that are OBL, FACW, or FAC: 1 (A) Total number of dominant species 3 (B)
	Vegetation           Tree Stratum (use scientific names)           1.           2.           3.           50%=           20%=           Total Cover:	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that       7
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=	% Cover	Species?	<u>Status</u>	Number of dominant species (A) that are OBL, FACW, or FAC: (A) Total number of dominant species <
	Vegetation           Tree Stratum (use scientific names)           1.           2.           3.           50%=           20%=           Total Cover:	% Cover	Species?	<u>Status</u>	Number of dominant species       1       (A)         Total number of dominant species       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       37       (AB)         Prevalence Index Worksheet       6       6
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=	% Cover	Species?	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that       2
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=	% Cover	Species?	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       37       (AB)         Prevalence Index Worksheet       48
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         1.         1.         1.         1.         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         1. </td <td><u>% Cover</u> <u>% Cover</u> <u>1</u></td> <td>Species?</td> <td><u>Status</u></td> <td>Number of dominant species       1       (A)         Total number of dominant species       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       37       (AB)         Prevalence Index Worksheet       77       (AB)</td>	<u>% Cover</u> <u>% Cover</u> <u>1</u>	Species?	<u>Status</u>	Number of dominant species       1       (A)         Total number of dominant species       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       37       (AB)         Prevalence Index Worksheet       77       (AB)
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3. $50\%=$ 20\%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         1.         1. $formed = 10^{-1} \text{ pl ex } 120\% = 10^{-1} \text{ formed } 50\% = 10^{-1} \text{ Total Cover:         3.         4.         50\% = 15^{-1} 20\% = 12^{-1}  Total Cover:   $	<u>% Cover</u> <u>//</u> <u>//</u> 	Species?	Status Status FAC	Number of dominant species       1       (A)         Total number of dominant species       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       37       (AB)         Prevalence Index Worksheet       70tal % Cover of:       Multiply by         OBL Species       71 =       1
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         1.         1.         1.         2.         3.         2.         3.         4.         50%=         50%=         20%=         1. <t< td=""><td>% Cover          </td><td>Species?</td><td>Status Status FAC Status</td><td>Number of dominant species       1       (A)         Total number of dominant species       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       37       (AB)         Prevalence Index Worksheet       77       (AB)         Prevalence Index Worksheet       1       1         Total % Cover of:       1       1         PACW Species       1       1         FACW Species       1       1</td></t<>	% Cover	Species?	Status Status FAC Status	Number of dominant species       1       (A)         Total number of dominant species       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       37       (AB)         Prevalence Index Worksheet       77       (AB)         Prevalence Index Worksheet       1       1         Total % Cover of:       1       1         PACW Species       1       1         FACW Species       1       1
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3. $50\%$ =         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         1.         1. $form f         2.         3.         2.         3.         4.         50%=         50%=         20%=         2.         3.         4.         50%=         50%=         20%=         20%=         7         Total Cover:         Herb Stratum (use scientific names)         1.       B romus         1.       B romus         1.       B romus   $	<u>% Cover</u> <u>% Cover</u> <u>1</u> <u>% Cover</u> <u>2</u>	Species?	Status Status FAC Status UPL	Number of dominant species       1       (A)         Total number of dominant species       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet       (AB)         Total % Cover of:       Multiply by         OBL Species       1 =         FACW Species       x 2 =         FAC Species       x 3 =         FACU Species       x 4 =
2.1	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         1.         A+ riplex         50%=         20%=         3.         4.         50%=         50%=         20%=         3.         4.         50%=         20%=         7.         Total Cover:         Herb Stratum (use scientific names)         1.         B romus         1.         B romus         2.         3.         4.         50%=         50%=         50%         2.         3.         4.         50%         2.         3.         2.         3.         3.         4.         5.         6.         6.         7.         7. <td>% Cover           % Cover           1           % Cover           1           % Cover           2.0</td> <td>Species?</td> <td>Status Status FAC Status UPL FACU</td> <td>Number of dominant species       1       (A)         Total number of dominant species       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       <math>(B)</math>         Percent of dominant species that are OBL, FACW, or FAC:       <math>(B)</math>         Prevalence Index Worksheet       <math>(AB)</math>         PIC Species       <math>(AB)</math>         VPL Species       <math>(AB)</math>         VPL Species       <math>(AB)</math></td>	% Cover           % Cover           1           % Cover           1           % Cover           2.0	Species?	Status Status FAC Status UPL FACU	Number of dominant species       1       (A)         Total number of dominant species       3       (B)         Percent of dominant species that are OBL, FACW, or FAC: $(B)$ Percent of dominant species that are OBL, FACW, or FAC: $(B)$ Prevalence Index Worksheet $(AB)$ PIC Species $(AB)$ VPL Species $(AB)$ VPL Species $(AB)$
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         1.         1.         1.         1.         2.         3.         2.         3.         4.         50%=         50%         7         7         7         7         8         10	<u>% Cover</u> <u>1</u> <u>% Cover</u> <u>1</u> <u>% Cover</u> <u>2</u> <u>2</u> <u>5</u>	Species?	Status Status FAC Status UPL UPL	Number of dominant species       1       (A)         Total number of dominant species       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet       (AB)         Total % Cover of:       Multiply by         OBL Species $x 2 =$ FACW Species $x 3 =$ FAC Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         1. $4$ $50\%=_{5}$ 20%=	<u>% Cover</u> <u>1</u> <u>% Cover</u> <u>1</u> <u>% Cover</u> <u>20</u> <u>15</u> <u>15</u> <u>15</u>	Species?	Status Status FAC Status UPL FAC	Number of dominant species       1       (A)         Total number of dominant species       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet       (AB)         Total % Cover of:       Multiply by         OBL Species $x 2 =$ FACW Species $x 3 =$ FAC Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         1.         1.         1.         1.         1.         2.         3.         2.         3.         4.         50%=         60%=         7         7         7         8         9         9         10      <	% Cover	Species?	Status Status FAC Status UPL FAC UPL	Number of dominant species       1       (A)         Total number of dominant species       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet       (AB)         Total % Cover of:       Multiply by         OBL Species $x 2 =$ FACW Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         1.         1. $4$ $50%=$ $50%=$ $20\%=$ $70\%=$	% Cover           % Cover           % Cover           1           15           15           15           15           15           15           15	Species?	Status Status FAC Status UPL UPL UPL UPL	Number of dominant species       1       (A)         Total number of dominant species       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (A)         Prevalence Index Worksheet       (AB)         Total % Cover of:       Multiply by         OBL Species       (A)         FACW Species       (A)         FACU Species       (A)         FACU Species       (A)         VPL Species       (A)         Output       (A)         Obscies       (A)         (B)       (B)         Prevalence Index Worksheet       (A)         Total % Cover of:       Multiply by         OBL Species       (A)         Y       (B)         Prevalence       (A)         Prevalence       (A)         (B)       (B)         Prevalance Index = B/A =       (B)         Prevalence Index is < 3.01
	Vegetation Tree Stratum (use scientific names) 1	% Cover	Species?	Status Status FAC Status UPL FAC UPL	Number of dominant species       1       (A)         Total number of dominant species       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (A)         Prevalence Index Worksheet       (AB)         Total % Cover of:       Multiply by         OBL Species       (A)         FACW Species       (A)         FACU Species       (A)         FACU Species       (A)         VPL Species       (A)         Output       (A)         Prevalance Index = B/A =         UPL Species       (A)         (B)       (B)         Prevalance Index = B/A =         Hydrophytic Vegetation Indicators         Dominance Text is >50%         Prevalence Index is $\leq 3.0^1$
	Vegetation Tree Stratum (use scientific names) 1	% Cover           % Cover           1           1           15           15           15           15           15	Species?	Status Status FAC UPL UPL UPL UPL UPL	Number of dominant species       1       (A)         Total number of dominant species       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (AB)         Prevalence Index Worksheet       (AB)         Total % Cover of:       Multiply by         OBL Species $x 2 =$ FACW Species $x 3 =$ FAC Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)         Prevalence Index is $\leq 3.01$ Morphological Adaptations <sup>1</sup> (provide support data in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation <sup>1</sup> (Explai)
	Vegetation Tree Stratum (use scientific names) 1	% Cover           % Cover           % Cover           1           1           1           1           1           15           15           15           15           15           5	Species?	Status Status FAC UPL UPL UPL UPL UPL	Number of dominant species that are OBL, FACW, or FAC:       1       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet Total % Cover of:       (AB)         Prevalence Index Worksheet       (AB)         Total % Cover of:       Multiply by         OBL Species       (A =
	Vegetation Tree Stratum (use scientific names) 1	% Cover           % Cover           1           1           15           15           15           15           15	Species?	Status Status FAC UPL UPL UPL UPL UPL	Number of dominant species       1       (A)         Total number of dominant species       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (AB)         Prevalence Index Worksheet       (AB)         Total % Cover of:       Multiply by         OBL Species $x 2 =$ FACW Species $x 3 =$ FAC Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)         Prevalence Index is $\leq 3.01$ Morphological Adaptations <sup>1</sup> (provide support data in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation <sup>1</sup> (Explai)

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Soils

nches) <u>Color (moist)</u> <u>%</u>	<u>Redox Feature</u> Color (moist)	<u>% Type1</u>	Loc <sup>2</sup>	Texture Remarks
-10 104R4/4 85	7.5YR-5/6	10 0	PL	GRAVENY LOAM
	7.5 YR 6/1	5 D	PL	
	1			
pes: C = Concentration D = Depletion	RM = Reduced Matrix	<sup>2</sup> Location: PL	= Pore Li	ning RC = Root Channel M = Matrix
dric Soil Indicators: (Applicab	ole to all LRRs, unless o	therwise noted)		Indicators for Problematic Hydric Soils <sup>3</sup>
Histosol (A1)	Sandy	Gleyed Matrix (S4)		1 cm Muck (A9) (LRR C)
Histic Epipedon (A2)	Sandy	Redox (S5)		2 cm Muck (A10) (LRR B)
Black Histic (A3)	Strippe	d Matrix (S6)		Reduced Vetric (F18)
Hydrogen Sulfide (A4)	Loamy	Mucky Mineral (F1)		Red Parent Materials (TF2)
Stratified Layers (AG) (LRR C)	Loamy	Gleyed Matrix (F2)		Vegetated Sand/Gravel Bars
1 cm Muck (A9) (LRR D)	Deplete	ed Matrix (F3)		Other (Explain in Remarks)
Depleted Below Dark Surface (	(A11) Redox	Dark Surface (F6)		•
Thick Dark Surface (A12)		ed Dark Surface (F7)		<sup>3</sup> Indicators of hydrophytic vegetation ar
Sandy Mucky Mineral (S1)	Redox	Depressions (F8)		wetland hydrology must be present.
	Vernal	Pools (F9)		
estrictive Layer (if present): Type: _		Depth (Inches)		ric Soil? YES
emarks				
vdrology				
letland Indicators	s sufficient).			Secondary Indicators (2 or more require
Vetland Indicators rimary Indicators (Any one indicator is				Secondary Indicators (2 or more require
Vetland Indicators rimary Indicators (Any one indicator is Surface Water (A1)	Salt Cru	ıst (B11)		Water Marks (B1) (Riverine)
Vetland Indicators rimary Indicators (Any one indicator is Surface Water (A1) High Water Table (A2)	Salt Cru Biotic C	rust (B12)		Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverin
High Water Table (A2) Saturation (A3)	Salt Cru Biotic C Aquatic	rust (B12) Invertebrates (B13)		<ul> <li>Water Marks (B1) (Riverine)</li> <li>Sediment Deposits (B2) (Riverine)</li> <li>Drift Deposits (B3) (Riverine)</li> </ul>
Vetland Indicators rimary Indicators (Any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonnverine)	Salt Cru Biotic C Aquatic Hydroge	rust (B12) Invertebrates (B13) en Sulfide Odor (C1)		Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverin Drift Deposits (B3) (Riverine) Drainage Patterns (B10)
Vetland Indicators rimary Indicators (Any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonnverine) Sediment Deposits (B2) (Nonrive	Salt Cru Biotic C Aquatic Hydroge erine) Oxidized	rust (B12) Invertebrates (B13) en Sulfide Odor (C1) d Rhizospheres (C3)		Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverin Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2)
Vetland Indicators rimary Indicators (Any one indicator is 	Salt Cru Biotic C Aquatic Hydroge erine) Oxidized Presend	rust (B12) Invertebrates (B13) en Sulfide Odor (C1) d Rhizospheres (C3) æ of Reduced Iron (C		Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverin Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7)
Vetland Indicators rimary Indicators (Any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonrive Surface Soil Cracks (B6) Inundation Visible on	Salt Cru Biotic C Aquatic Hydroge erine) Oxidized Presenc Recent	rust (B12) Invertebrates (B13) en Sulfide Odor (C1) d Rhizospheres (C3) e of Reduced Iron (C Iron Reduction in		Water Marks (B1) (Riverine)         Sediment Deposits (B2) (Riverine)         Drift Deposits (B3) (Riverine)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Thin Muck Surface (C7)         Crayfish Burrows (C8)
Vetland Indicators rimary Indicators (Any one indicator is 	Salt Cru Biotic C Aquatic Hydroge Oxidized Presenc Recent Plowed	rust (B12) Invertebrates (B13) en Sulfide Odor (C1) d Rhizospheres (C3) e of Reduced Iron (C Iron Reduction in Soils (C6)		Water Marks (B1) (Riverine)         Sediment Deposits (B2) (Riverine)         Drift Deposits (B3) (Riverine)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Thin Muck Surface (C7)         Crayfish Burrows (C8)         Saturation Visible on
Vetland Indicators rimary Indicators (Any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonrive Surface Soil Cracks (B6) Inundation Visible on	Salt Cru Biotic C Aquatic Hydroge Oxidized Presenc Recent Plowed	rust (B12) Invertebrates (B13) en Sulfide Odor (C1) d Rhizospheres (C3) e of Reduced Iron (C Iron Reduction in		Water Marks (B1) (Riverine)         Sediment Deposits (B2) (Riverine)         Drift Deposits (B3) (Riverine)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Thin Muck Surface (C7)         Crayfish Burrows (C8)         Saturation Visible on         Aerial Imagery (C9)
/etland Indicators         imary Indicators (Any one indicator is	Salt Cru Biotic C Aquatic Hydroge Oxidized Presenc Recent Plowed	rust (B12) Invertebrates (B13) en Sulfide Odor (C1) d Rhizospheres (C3) e of Reduced Iron (C Iron Reduction in Soils (C6)		Water Marks (B1) (Riverine)         Sediment Deposits (B2) (Riverine)         Drift Deposits (B3) (Riverine)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Thin Muck Surface (C7)         Crayfish Burrows (C8)         Saturation Visible on         Aerial Imagery (C9)         Shallow Aquitard (D3)
Vetland Indicators rimary Indicators (Any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonrive Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	Salt Cru Biotic C Aquatic Hydroge Oxidized Presenc Recent Plowed	rust (B12) Invertebrates (B13) en Sulfide Odor (C1) d Rhizospheres (C3) e of Reduced Iron (C Iron Reduction in Soils (C6)		Water Marks (B1) (Riverine)         Sediment Deposits (B2) (Riverine)         Drift Deposits (B3) (Riverine)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Thin Muck Surface (C7)         Crayfish Burrows (C8)         Saturation Visible on         Aerial Imagery (C9)
Vetland Indicators         rimary Indicators (Any one indicator is	Salt Cru Biotic C Aquatic Hydroge Oxidized Presend Recent Recent Other (E	rust (B12) Invertebrates (B13) en Sulfide Odor (C1) d Rhizospheres (C3) e of Reduced Iron (C Iron Reduction in Soils (C6) Explain in Remarks)	C4)	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverin Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Netural Test (D5)
Vetland Indicators         rimary Indicators (Any one indicator is         imary Indicators (Any one indicator is         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonriverine)         Sediment Deposits (B2) (Nonrive         Surface Soil Cracks (B6)         Inundation Visible on         Aerial Imagery (B7)         Water-Stained Leaves (B9)	<pre>Salt CruBiotic CAquaticAquatic erine)OxidizedPresendRecentRecentOther (EOther (E)</pre>	rust (B12) Invertebrates (B13) en Sulfide Odor (C1) d Rhizospheres (C3) e of Reduced Iron (C Iron Reduction in Soils (C6) explain in Remarks)	C4)	Water Marks (B1) (Riverine)         Sediment Deposits (B2) (Riverine)         Drift Deposits (B3) (Riverine)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Thin Muck Surface (C7)         Crayfish Burrows (C8)         Saturation Visible on         Aerial Imagery (C9)         Shallow Aquitard (D3)
Vetland Indicators         imary Indicators (Any one indicator is	<ul> <li>Salt Cru</li> <li>Biotic C</li> <li>Aquatic</li> <li>Hydroge</li> <li>oxidized</li> <li>Presend</li> <li>Presend</li> <li>Recent</li> <li>Plowed</li> <li>Other (E</li> </ul>	rust (B12) Invertebrates (B13) en Sulfide Odor (C1) d Rhizospheres (C3) e of Reduced Iron (C Iron Reduction in Soils (C6) Explain in Remarks)	.Wetland	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Netural Test (D5)
Vetland Indicators         imary Indicators (Any one indicator is	Salt Cru     Biotic C     Aquatic     Aquatic     Mydroge erine)Oxidized     Presend     Presend     Plowed     Other (E     Other (E     Other (E     Depth (inchest     Io	rust (B12) Invertebrates (B13) en Sulfide Odor (C1) d Rhizospheres (C3) æ of Reduced Iron (C Iron Reduction in Soils (C6) Explain in Remarks)	.Wetland	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Netural Test (D5) Hydrology? Yes No
etland Indicators         mary Indicators (Any one indicator is	<ul> <li>Salt Cru</li> <li>Biotic C</li> <li>Aquatic</li> <li>Hydroge</li> <li>oxidized</li> <li>Presend</li> <li>Presend</li> <li>Recent</li> <li>Plowed</li> <li>Other (E</li> </ul>	rust (B12) Invertebrates (B13) en Sulfide Odor (C1) d Rhizospheres (C3) e of Reduced Iron (C Iron Reduction in Soils (C6) Explain in Remarks)	.Wetland	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Netural Test (D5)

Remarks

	North State Resources		•		Habitat Type (JRASSLAND) Wetland Type SEASONAL WT2D
	Wetland Determination Data Form - Arid				
	Project/Site:Sisk Dam Corrective Action Project		_ City/Coun	ity: Merced	Sampling Date: 1/1/1/0
	Applicant/Owner: <u>U.S. Bureau of Reclamation</u>				State: <u>CA</u> Sampling Point: <u>37</u>
	Investigator(s): <u>J. Colescott</u>				- Colatie Slope % 2.4
	Landform (hillstope, terrace, etc.) SWALE				
*	Subregion (LRR) <u>LRR-C</u> Are climatic/hydrologic conditions on the site typical for this				
	Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ signi				
ŝ)	Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ nature		atio? //f no		in any answers in Remarks )
	······································				
	Summary of Findings (Attach site map showin	ig sampling p	oint location	ns, transects,	, important features, etc.)
	Hydrophytic vegetation? 4755 Hydric soil? 4755 We	etland hydrolo	ogy? 14	2 Is sample	d area a wetland? <u>The S</u> Other waters? <u>NO</u>
	USACE Jurisdiction Adjacent to Waters Tributary to Waters Isola Explain: のんいたこてたり いいた つりいれ	ted (with inte	erstate comr	merce)	_ Isolated (non jurisdictional)
	Evaluation of features designated "O Indicators: Defined bed and bank Scour	ther Wa	ters of 1	the Unite	ed States"
	Feature Designation: Perennial Intermittent	Ephemeral	Blue-li	ne on USGS	Quad
	Natural Drainage Artificial Dra				
	APPEAR TO CONTINUE DOWN	TH I	WATL	AND	PARAMETERS. DOES NOT
(a)	APPEAR TO CONTINUE DOWN	1520PVE	10	ANY &	DHER FRANCE.
	/// /				
			. <u> </u>	<u></u>	
	Vegetation	Absolute	Dominan	t Indicator	Dominance Test Worksheet
			Dominan	<u></u>	Dominance Test Worksheet Number of dominant species that are OBL, FACW, or FAC:(A)
	Vegetation	Absolute	Dominan	t Indicator	Number of dominant species
	Vegetation	Absolute	Dominan	t Indicator	Number of dominant species
	Vegetation	Absolute <u>% Cover</u>	Dominan	t Indicator	Number of dominant species
	Vegetation       Tree Stratum (use scientific names)       1.       2.       3.	Absolute <u>% Cover</u>	Dominan Species?	t Indicator Status	Number of dominant species that are OBL, FACW, or FAC:(A) Total number of dominant species
,	Vegetation           Tree Stratum (use scientific names)           1.           2.           3.           50%=20%=Total Cover	Absolute <u>% Cover</u>	Dominan	t Indicator Status	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       5       (B)         Percent of dominant species that are OBL, FACW, or FAC:       60       (AB)
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover         Sapling/Shrub Stratum (use scientific names)	Absolute <u>% Cover</u>	Dominan Species?	t Indicator Status	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       5       (B)         Percent of dominant species that are OBL, FACW, or FAC:       60       (AB)         Prevalence Index Worksheet       60       (AB)
•	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=20%=	Absolute <u>% Cover</u>	Dominan Species? Species? Yes	Status	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       5       (B)         Percent of dominant species that are OBL, FACW, or FAC:       60       (AB)         Prevalence Index Worksheet       60       (AB)
*	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover         Sapling/Shrub Stratum (use scientific names)         1.         Atroplex         Jcnt*formis         2.         Bacchar's         4.	Absolute <u>% Cover</u>	Dominan Species? Species? Yes	Status	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       5       (B)         Percent of dominant species that are OBL, FACW, or FAC:       60       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       1 =
*	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=20%=	Absolute <u>% Cover</u>	Dominan Species? Species? Yes	Status	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       5       (B)         Percent of dominant species that are OBL, FACW, or FAC:       60       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       1 =       41 =         FACW Species       2 =       2 =
*	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover         Sapling/Shrub Stratum (use scientific names)         1.         Atropley         2.         2.         3.         2.         3.         4.         50%=         50%=         20%=         20%=         Total Cover	Absolute <u>% Cover</u> <u>% Cover</u> <u>5</u> <u>7</u> % Cover	Dominan Species? Species? YES YES Species?	t Indicator Status Status FAC UPC Status	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       5       (B)         Percent of dominant species that are OBL, FACW, or FAC:       60       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x1 =$ FACW Species $x2 =$ FAC Species $x3 =$
3 (1)	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover         Sapling/Shrub Stratum (use scientific names)         1.         Atroplex         Jcnt*formis         2.         bacchar's         j' l'ularis         3.         4.         50%=         50%=         20%=         Total Cover         Herb Stratum (use scientific names)         1. $V/P/a$ 50%=         20%=         20%=         Total Cover         Herb Stratum (use scientific names)         1.         V/P/a         bromside         1.	Absolute <u>% Cover</u> <u>% Cover</u> <u>5</u> <u>5</u> <u>70</u> % Cover <u>25</u>	Dominan Species? <u>YES</u> <u>YES</u> Species? <u>YES</u>	t Indicator Status <u>Status</u> <u>FAC</u> UPC Status <u>FAC</u>	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       5       (B)         Percent of dominant species that are OBL, FACW, or FAC:       60       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x1 =$ FACW Species $x2 =$ FAC Species $x3 =$ FACU Species $x4 =$
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover         Sapling/Shrub Stratum (use scientific names)         1.         Atropley         2.         2.         3.         2.         3.         4.         50%=         50%=         20%=         2         50%=         20%=         2         50%=         20%=         2         50%=         2         20%=         2         1.         Vulpia         bromside         2.         1.         Vulpia         bromside         2.         1.         1.         1.         1.         1.         1.         1.         1.         1.         1.         1.         1.	Absolute % Cover % Cover % Cover 5 10 % Cover 25 25	Dominan Species? YES YES Species? YES Species? YES	Status Status FAC UPC Status FACW FACW FACW	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       5       (B)         Percent of dominant species that are OBL, FACW, or FAC:       60       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x1 =$ FACW Species $x2 =$ FAC Species $x3 =$ FACU Species $x4 =$ UPL Species $x5 =$
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=	Absolute % Cover % Cover 5 5 70 % Cover 25 25 25	Dominan Species? YES YES Species? YES Species? YES YES	Status Status Status FAC UPC Status FAC UPC Status FAC UPC	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       5       (B)         Percent of dominant species that are OBL, FACW, or FAC:       6       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       x1 =         FACW Species       x2 =         FAC Species       x3 =         FACU Species       x4 =         UPL Species       x5 =         Column Totals       (A)
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover         Sapling/Shrub Stratum (use scientific names)         1.         Atroplex         Jcnt*formis         2.         Bacchar's         1.         Atroplex         Jcnt*formis         3.         4.         50%=         50%=         20%=         7         7         7         7         1.         1.         1.         1.         2.	Absolute % Cover % Cover 5 10 % Cover 25 25 25 15	Dominan Species? YES YES Species? YES Species? YES	Status Status FAC UPC Status FACW FACW FACW FACW	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       5       (B)         Percent of dominant species that are OBL, FACW, or FAC:       6.0       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       x1 =         FACW Species       x2 =         FAC Species       x3 =         FACU Species       x4 =         UPL Species       x5 =         Column Totals       (A)         Prevalance Index = B/A =       (B)
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=	Absolute % Cover % Cover 5 5 70 % Cover 25 25 25	Dominan Species? YES YES Species? YES Species? YES YES	Status Status Status FAC UPC Status FAC UPC Status FAC UPC	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       5       (B)         Percent of dominant species that are OBL, FACW, or FAC:       6.0       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       x1 =         FACW Species       x2 =         FAC Species       x3 =         FACU Species       x4 =         UPL Species       x5 =         Column Totals       (A)         Prevalance Index = B/A =       (B)
	Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover         Sapling/Shrub Stratum (use scientific names)         1.         Atroplex         1.         1.         1.         2. <td>Absolute % Cover % Cover 5 10 % Cover 25 25 25 15</td> <td>Dominan Species? YES YES Species? YES Species? YES YES</td> <td>Status Status FAC UPC Status FACW FACW FACW FACW</td> <td>Number of dominant species that are OBL, FACW, or FAC:       <math>(A)</math>         Total number of dominant species across all strata:       <math>(B)</math>         Percent of dominant species that are OBL, FACW, or FAC:       <math>(B)</math>         Prevalence Index Worksheet Total % Cover of:       <math>(AB)</math>         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       <math>x 1 =</math>         FACW Species       <math>x 2 =</math>         FAC Species       <math>x 4 =</math>         UPL Species       <math>x 5 =</math>         Column Totals       <math>(A)</math>         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (Calumn Totals         Dominance Text is &gt;50%       Prevalence Index is &lt; 3.01</td>	Absolute % Cover % Cover 5 10 % Cover 25 25 25 15	Dominan Species? YES YES Species? YES Species? YES YES	Status Status FAC UPC Status FACW FACW FACW FACW	Number of dominant species that are OBL, FACW, or FAC: $(A)$ Total number of dominant species across all strata: $(B)$ Percent of dominant species that are OBL, FACW, or FAC: $(B)$ Prevalence Index Worksheet Total % Cover of: $(AB)$ Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 4 =$ UPL Species $x 5 =$ Column Totals $(A)$ Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (Calumn Totals         Dominance Text is >50%       Prevalence Index is < 3.01
	Vegetation Tree Stratum (use scientific names) 1	Absolute % Cover % Cover 5 10 % Cover 25 25 25 25 15 P	Dominan Species? <u>YES</u> <u>YES</u> Species? <u>YES</u> <u>YES</u> <u>YES</u>	Status Status FAC UPC Status FACW FACW FACW FACW	Number of dominant species that are OBL, FACW, or FAC:       3       (A)         Total number of dominant species across all strata:       5       (B)         Percent of dominant species that are OBL, FACW, or FAC:       6.0       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =         Hydrophytic Vegetation Indicators         Dominance Text is >50%         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supportint)
	Vegetation         Tree Stratum (use scientific names)         1	Absolute % Cover % Cover 5 5 10 % Cover 25 25 15 100 100	Dominan Species? YES YES YES YES YES N N N	Status Status FAC UPC Status FAC UPC Status FAC UPC UPC UPC UPC	Number of dominant species that are OBL, FACW, or FAC:       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet Total % Cover of:       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supportindate in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation <sup>1</sup> (Explain       (Explain
	Vegetation         Tree Stratum (use scientific names)         1	Absolute % Cover % Cover 5 10 % Cover 25 25 25 25 15 P	Dominan Species? YES YES YES YES YES N N N	Status Status FAC UPC Status FAC UPC Status FAC UPC UPC UPC UPC	Number of dominant species that are OBL, FACW, or FAC: $(A)$ Total number of dominant species across all strata: $(B)$ Percent of dominant species that are OBL, FACW, or FAC: $(B)$ Prevalence Index Worksheet Total % Cover of: $(AB)$ Prevalence Index Worksheet $(AB)$ Total % Cover of:       Multiply by         OBL Species $x1 =$ FACW Species $x2 =$ FAC Species $x3 =$ FACU Species $x5 =$ Column Totals $(A)$ Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)         Prevalence Index = B/A =       (B)         Prevalence Index = B/A =       (B)         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supportindate in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation 1 (Explain 1 functicators of hydric soil and wetland hydrology must
	Vegetation         Tree Stratum (use scientific names)         1	Absolute % Cover % Cover 5 5 10 % Cover 25 25 15 100 100	Dominan Species? YES YES YES YES YES N N N	Status Status FAC UPC Status FAC UPC Status FAC UPC UPC UPC UPC	Number of dominant species that are OBL, FACW, or FAC:       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet Total % Cover of:       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supportindate in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation <sup>1</sup> (Explain       (Explain

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(inches) <u>Color (moist)</u>	<u>%</u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
-10 107R4/4	Contraction of the second s	57R5/6	10	$\Sigma_{-}$	PL	GRAVE W		_
	Z	5YR 91	_5		PL_			_
ypes: C = Concentration D = I ydric Soil Indicators: ( Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (AG) ( 1 cm Muck (A9) (LRR I Depleted Below Dark S Thick Dark Surface (A1 Sandy Mucky Mineral (	Applicable to a (LRR C) D) Surface (A11) (2)	Sandy Sandy Strippe Loamy Loamy Deplete Redox Redox	therwise r Gleyed M Redox (S d Matrix ( Mucky M Gleyed M ed Matrix Dark Surf	latrix (S4) (S6) ineral (F1) fatrix (F2) (F3) iace (F6) urface (F7) ons (F8)		Indicators for Pro1 cm M2 cm MReduceRed PaVegetalOther (I 3Indicators of I	hannel <u>M = Matrix</u> blematic Hydric Sol luck (A9) (LRR C) luck (A10) (LRR B) ed Vetric (F18) rent Materials (TF2 ted Sand/Gravel Ba Explain in Remarks hydrophytic vegetal logy must be prese	) Irs ) ion and
	Type:		Depth (In	iches)	_ Hydri	ic Soil? YES		
Remarks HyDEIC Hydrology Vetland Indicators	50125		Depth (In	iches)	_ Hydri		cators (2 or more re	equired
Remarks HyDE/C lydrology Vetland Indicators rimary Indicators (Any one in	50125	cient)		iches)	_ Hydri	Secondary India	cators (2 or more re	
Remarks HyDEIC Iydrology Vetland Indicators mary Indicators (Any one in Surface Water (A1)	50125	cient) Salt Cru	ust (B11)		_ Hydri	Secondary India	Aarks (B1) (Riverin	e)
temarks HyDE/C Iydrology Vetland Indicators imary Indicators (Any one in Surface Water (A1) High Water Table (A2)	50125	cient) Salt Cru 2_Biotic C	ust (B11) rust (B12)	)	_ Hydri	Secondary India	Aarks (B1) (Riverin nt Deposits (B2) (F	e) liverine
temarks HyDEIC Iydrology Vetland Indicators imary Indicators (Any one in Surface Water (A1) High Water Table (A2) Saturation (A3)	SOILS	cient) Salt Cru Biotic C Aquatic	ust (B11) rust (B12) Invertebra	) ates (B13)	_ Hydri	Secondary India	/larks (B1) (Riverin nt Deposits (B2) (R posits (B3) (Riverir	e) liverine
Remarks HyDE/C Iydrology Vetland Indicators rimary Indicators (Any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri	SOILS	cient) Salt Cru Biotic C Aquatic Hydroge	ist (B11) rust (B12) Invertebra en Sulfide	) ates (B13) Odor (C1)	Hydri	Secondary India	farks (B1) (Riverin nt Deposits (B2) (F posits (B3) (Riverin e Patterns (B10)	e) Riverine Ne)
Remarks HyDEIC Hydrology Vetland Indicators rimary Indicators (Any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri Sediment Deposits (B2)	dicator is suffic verine) (Noniverine)	cient) Salt Cru Biotic C Aquatic Hydroge Oxidized	ist (B11) rust (B12) Invertebra en Sulfide d Rhizosp	) ates (B13) Odor (C1) heres (C3)		Secondary India	farks (B1) (Riverin nt Deposits (B2) (R posits (B3) (Riverir le Patterns (B10) ason Water Table (	e) Riverine 1e)
Remarks HyDE/C Hydrology Vetland Indicators Inimary Indicators (Any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri	SOILS dicator is suffic (verine) (Nonriverine)	cient) Salt Cru Biotic C Aquatic Aquatic Hydroge Oxidized Presend Recent Recent	ist (B11) rust (B12) Invertebra en Sulfide d Rhizosp te of Redu Iron Redu Soils (C6	) ates (B13) Odor (C1) heres (C3) uced Iron (C4		Secondary India	Marks (B1) (Riverin nt Deposits (B2) (Riverin posits (B3) (Riverin te Patterns (B10) ason Water Table ( ason Water Table ( ack Surface (C7) n Burrows (C8) on Visible on	e) Riverine Ne)
Remarks HyDRIC Hydrology Vetland Indicators rimary Indicators (Any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri Sediment Deposits (B2) Surface Soil Cracks (B6 Inundation Visible on Aerial Imagery (B7)	SOILS dicator is suffic (verine) (Nonriverine)	cient) Salt Cru Biotic C Aquatic Aquatic Hydroge Oxidized Presend Recent Recent	ist (B11) rust (B12) Invertebra en Sulfide d Rhizosp te of Redu Iron Redu Soils (C6	) ates (B13) Odor (C1) heres (C3) uced Iron (C4 iction in		Secondary India Water M Sedime Drift De Drainag Dry-Sea Thin Mu Crayfish Saturati Aerial M Shallow	Marks (B1) (Riverin nt Deposits (B2) (Riverin posits (B3) (Riverin e Patterns (B10) ason Water Table ( ick Surface (C7) n Burrows (C8) on Visible on magery (C9) r Aquitard (D3)	e) Riverine Ne)
Remarks HyDRIC Hydrology Vetland Indicators rimary Indicators (Any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri Sediment Deposits (B2) Surface Soil Cracks (B6 Inundation Visible on Aerial Imagery (B7)	SOILS dicator is suffic (verine) (Nonriverine) ) B9)	cient) Salt Cru Biotic C Aquatic Aquatic Hydroge Oxidized Presend Recent Recent	ist (B11) rust (B12) Invertebra en Sulfide d Rhizosp te of Redu Iron Redu Soils (C6	) ates (B13) Odor (C1) heres (C3) uced Iron (C4 iction in		Secondary India Water M Sedime Drift De Drainag Dry-Sea Thin Mu Crayfish Saturati Aerial M Shallow	Marks (B1) (Riverin nt Deposits (B2) (F posits (B3) (Riverin e Patterns (B10) ason Water Table ( ick Surface (C7) n Burrows (C8) on Visible on magery (C9)	e) Riverine Ne)
Remarks HyDRIC Hydrology Vetland Indicators rimary Indicators (Any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri Sediment Deposits (B2) Surface Soil Cracks (B6 Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (1)	SOILS dicator is suffic (verine) (Nonriverine) ) B9)	cient) Salt Cru Biotic C Aquatic Aquatic Hydroge Oxidized Presend Recent Recent	ist (B11) rust (B12) Invertebra en Sulfide d Rhizosp te of Redu Iron Redu Soils (C6	) ates (B13) Odor (C1) heres (C3) uced Iron (C4 uction in )) Remarks)	t)	Secondary IndiaWater MSedimeDrift DeDrainagDry-SeaThin MuCrayfishSaturati Aerial MShallowFAC-Ne	Marks (B1) (Riverin nt Deposits (B2) (Riverin posits (B3) (Riverin e Patterns (B10) ason Water Table ( ick Surface (C7) n Burrows (C8) on Visible on magery (C9) r Aquitard (D3)	e) Riverine Ne)
Remarks HyDRIC Hydrology Vetland Indicators rimary Indicators (Any one in Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri Sediment Deposits (B2) Surface Soil Cracks (B6 Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (I ield Observations mface Water Present? Yes	SOILS dicator is suffic (Nonriverine) (Nonriverine) ) B9)	cient) Salt Cru Biotic C Aquatic Hydroge Oxidized Presend Presend Recent Plowed Other (E	Ist (B11) rust (B12) Invertebra en Sulfide d Rhizosp æ of Redu Iron Redu Soils (C6 Explain in	) ates (B13) Odor (C1) heres (C3) uced Iron (C4 uction in )) Remarks)	t)	Secondary India Water M Sedime Drift De Drainag Dry-Sea Thin Mu Crayfish Saturati Aerial M Shallow	Marks (B1) (Riverin nt Deposits (B2) (Riverin posits (B3) (Riverin e Patterns (B10) ason Water Table ( ick Surface (C7) n Burrows (C8) on Visible on magery (C9) r Aquitard (D3)	e) Riverine Ne)
Hydrology         Netland Indicators         Primary Indicators (Any one in         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1) (Nonri         Sediment Deposits (B2)         Surface Soil Cracks (B6         Inundation Visible on         Aerial Imagery (B7)         Water-Stained Leaves (Intervations)	SOILS dicator is suffic (verine) (Nonriverine) ) B9)	cient) Salt Cru Biotic C Aquatic Hydroge Oxidized Presend Plowed Other (E	Ist (B11) rust (B12) Invertebra en Sulfide d Rhizosp te of Redu Iron Redu Soils (C6 Explain in	) ates (B13) Odor (C1) heres (C3) uced Iron (C4 action in ) Remarks)	t)	Secondary India Water M Sedime Drift De Drift De Dry-Sea Thin ML Crayfish Staturati Aerial M Shallow FAC-Nee Aydrology? Yes	Marks (B1) (Riverin nt Deposits (B2) (Riverin posits (B3) (Riverin e Patterns (B10) ason Water Table ( ick Surface (C7) n Burrows (C8) on Visible on magery (C9) r Aquitard (D3)	e) Riverine Ne)

Remarks WEFLAND 140201044 INDICTORS,

	North State Resources		Habitat Type (SPASSUENS)
	Wetland Determination Data Form - Arid V		Wetland Type         UPLAND           County         Sampling Date: 9/14/09
÷	Project/Site: <u>Sisk Dam Corrective Action Project</u> Applicant/Owner: <u>U.S. Bureau of Reclamation</u> Investigator(s): <u>J. Colescott</u>		State: <u>CA</u> Sampling Point: <u>38</u>
	Landform (hillslope, terrace, etc.) Swhve Subregion (LRR) LRR-C	Soil Map Unit Name: Xel	rof wents, Ext, Gravelly
*	Are climatic/hydrologic conditions on the site typical for this Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ significant Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ nature	icantly disturbed? Are normal circum	istances present? <u>YES</u>
ā	Summary of Findings (Attach site map showing Hydrophytic vegetation? <u>NO</u> Hydric soil? <u>465</u> Wet	sampling point locations, transects, land hydrology? <u>NO</u> is sampled	important features, etc.) d area a wetland? $\underline{NU}$ Other waters? $\underline{NO}$
	USACE Jurisdiction Adjacent to Waters Tributary to Waters Isolat Explain:	ed (with interstate commerce)	Isolated (non jurisdictional)
	Evaluation of features designated "Ot         Indicators:       Defined bed and bank Scour         Feature Designation:       Perennial IntermittentE         Natural Drainage Artificial Drainage       Artificial Drainage	Ordinary High Water Mark Ma phemeral Blue-line on USGS	apped
•.:	Remarks DOWNSLOPE EDD D DOCUMENTS NON-WER	OF & DEPRES	SIDNUTL AREA. DP S.
	Vegetation Tree Stratum (use scientific names) 1	Absolute Dominant Indicator % Cover Species? Status	Dominance Test Worksheet Number of dominant species that are OBL, FACW, or FAC:(A)
*	2		Total number of dominant species across all strata:
	Sapling/Shrub Stratum (use scientific names) 1. Atroplex leutificrimis	% Cover Species? Status	Percent of dominant species that 40 (AB) are OBL, FACW, or FAC: (AB)
	2		Total % Cover of:         Multiply by           OBL Species
	4	5 % Cover Species? Status	FACW Species x2 = FAC Species x3 = FACU Species x4 =
, second of conducts to a	1. Vulpia bromaides 2. Bronus hardencous	25 Y FACW 20 N Etcu	FACU Species         x 4 =           UPL Species         x 5 =           Column Totals         (A)
	3. B. madritensis. 4. Eradium botrys 5. Brassica meara	20 <u>4</u> <u>UPL</u> 20 <u>M</u> <u>UPL</u> 15 <u>N</u> <u>UPL</u>	Prevalance Index = B/A =
	6		Dominance Text is >50% Prevalence Index is ≤ 3.0 <sup>1</sup> Morphological Adaptations <sup>1</sup> (provide supporting
•) 3 <sup>23</sup>	50%=       20%=       Total Cover:         Woody/Vine Stratum (use scientific names)       1.	% Cover Species? Status	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must
an a	2		be present. Hydrophytic Vegetation? <u>NO</u>

Sampling Point 38

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#### Soils

Depth <u>M</u> (inches) <u>Color (</u>	atrix%	(	<u>Redox Feature</u> Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
D-12 104124			1R 2/2	5	RM	M	GANDY	Letter
							=	
Types: C = Concentrat	on D = Depletic	PM =	Poducad Matrix	2	Location: PL	- Doro Lin		t Channel M = Matrix
lydric Soil Indica							<u> </u>	Problematic Hydric Soils <sup>3</sup>
Histosol (A1)	itors <u>. (Applica</u>		Sandy					Muck (A9) (LRR C)
Histic Epipede	n (Δ2)		Sandy	•	• •			Muck (A10) (LRR B)
Black Histic (A	• •		Strippe		-			Iced Vetric (F18)
Hydrogen Sul			Loamy		• •			Parent Materials (TF2)
Stratified Laye	. ,	21	Loamy	-				etated Sand/Gravel Bars
1 cm Muck (A		·)·	Deplete	-	• •		0	r (Explain in Remarks)
Depleted Belo		Δ11)		Dark Surf			Outo	
Thick Dark Su					Surface (F7)		<sup>3</sup> Indicators	of hydrophytic vegetation and
Sandy Mucky				Depressi				rology must be present.
				Pools (F9	• •			'
					1			
	resent): Type: HYDR			Depth (In	nches)	Hydri	ic Soil? NC	
Wetland Indicato	HYDRI	C 3	0115	Depth (In	nches)	Hydri		
Remarks Hydrology Wetland Indicator Primary Indicators (Ar	HY DRI	C 3	01L5		nches)	Hydri	Secondary Ir	dicators (2 or more required
Remarks Hydrology Wetland Indicator Primary Indicators (Ar	HYDR/ rs iy one indicator (A1)	C 3	0)LS ent)Salt Cru	ust (B11)		Hydri	Secondary Ir	idicators (2 or more required r Marks (B1) (Riverine)
Remarks Hydrology Wetland Indicato Primary Indicators (ArSurface WaterHigh Water Tal	HY DR/ rs iv one indicator (A1) ble (A2)	C 3	0)L5 ent) Salt Cru Biotic C	ust (B11) rust (B12)	)	Hydri	<u>Secondary Ir</u> Wate Sedir	idicators (2 or more required r Marks (B1) (Riverine) nent Deposits (B2) (Riverine
Remarks Hydrology Wetland Indicator Primary Indicators (Ar Surface Water High Water Tal Saturation (A3)	HY DR/ rs iv one indicator (A1) ble (A2)	C 5	<i>٥ ) L</i> 5 ent) Salt Cru Biotic C	ust (B11) rust (B12) Invertebr	) ates (B13)	Hydri	Secondary Ir Wate Sedir Drift	dicators (2 or more required r Marks (B1) (Riverine) nent Deposits (B2) (Riverine Deposits (B3) (Riverine)
Remarks Hydrology Wetland Indicato Primary Indicators (Ar Surface Water High Water Tal Saturation (A3) Water Marks (E	HY DR/ rs iv one indicator (A1) ble (A2)	C 5	0) L 5 ent) Salt Cru Biotic C Aquatic Hydroge	ust (B11) rust (B12) Invertebr	) ates (B13) Odor (C1)	Hydri	<u>Secondary Ir</u> Wate Sedir Drift	udicators (2 or more required r Marks (B1) (Riverine) ment Deposits (B2) (Riverine Deposits (B3) (Riverine) age Patterns (B10)
Remarks Hydrology Wetland Indicator Primary Indicators (Ar Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo	HY DR/ rs y one indicator (A1) ble (A2) (Nonriverine) sits (B2) (Nonri	C 5	oll LS ent) Salt Cru Biotic C Aquatic Hydroge Oxidized	ust (B11) rust (B12) Invertebr en Sulfide d Rhizosp	) ates (B13) Odor (C1) oheres (C3)		Secondary Ir Wate Sedir Drift Drain Dry-S	dicators (2 or more required r Marks (B1) (Riverine) nent Deposits (B2) (Riverine Deposits (B3) (Riverine) age Patterns (B10) Season Water Table (C2)
Remarks Hydrology Wetland Indicato Primary Indicators (Ar Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo	HY D.R. rs y one indicator (A1) ble (A2) 1) (Nonriverine) sits (B2) (Nonri acks (B6)	C 5	<ul> <li>b) L 5</li> <li>Ent)</li> <li>Salt Cru</li> <li>Biotic C</li> <li>Aquatic</li> <li>Hydroge</li> <li>Oxidized</li> <li>Presend</li> </ul>	ust (B11) rust (B12) Invertebr en Sulfide d Rhizosp æ of Redu	) ates (B13) Odor (C1) oheres (C3) uced Iron (C-		Secondary Ir Wate Sedir Drift Drain Dry-S Thin	udicators (2 or more required r Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) age Patterns (B10) Season Water Table (C2) Muck Surface (C7)
Remarks Hydrology Wetland Indicator Primary Indicators (Ar Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil	HY D.24 rs y one indicator (A1) ble (A2) 1) (Nonriverine) sits (B2) (Nonri acks (B6) ble on	C 5	<ul> <li>b) L5</li> <li>Salt Cru</li> <li>Biotic C</li> <li>Aquatic</li> <li>Hydroge</li> <li>Oxidized</li> <li>Presend</li> <li>Recent</li> </ul>	ust (B11) rust (B12) Invertebr en Sulfide d Rhizosp æ of Redu Iron Redu	) ates (B13) Odor (C1) oheres (C3) uced Iron (C- uction in		Secondary Ir Wate Sedir Drift Drain Dry-S Thin Cray	dicators (2 or more required r Marks (B1) (Riverine) nent Deposits (B2) (Riverine) Deposits (B3) (Riverine) age Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8)
Remarks Hydrology Wetland Indicator Primary Indicators (Ar Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil Aerial Imagery	HY D & rs y one indicator (A1) ble (A2) 1) (Nonriverine) sits (B2) (Nonri acks (B6) ble on (B7)	C 5	<ul> <li>b) LS</li> <li>ent)</li> <li>Salt Cru</li> <li>Biotic C</li> <li>Aquatic</li> <li>Hydroge</li> <li>Oxidized</li> <li>Presend</li> <li>Recent</li> <li>Plowed</li> </ul>	ust (B11) rust (B12) Invertebr en Sulfide d Rhizosp æ of Redu Iron Redu Soils (Ce	) ates (B13) Odor (C1) oheres (C3) uced Iron (C- uction in		Secondary Ir Wate Sedir Drift Drain Dry-S Thin Cray	dicators (2 or more required r Marks (B1) (Riverine) nent Deposits (B2) (Riverine) Deposits (B3) (Riverine) age Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ation Visible on
Remarks Hydrology Wetland Indicator Primary Indicators (Ar Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil	HY D & rs y one indicator (A1) ble (A2) 1) (Nonriverine) sits (B2) (Nonri acks (B6) ble on (B7)	C 5	<ul> <li>b) LS</li> <li>ent)</li> <li>Salt Cru</li> <li>Biotic C</li> <li>Aquatic</li> <li>Hydroge</li> <li>Oxidized</li> <li>Presend</li> <li>Recent</li> <li>Plowed</li> </ul>	ust (B11) rust (B12) Invertebr en Sulfide d Rhizosp æ of Redu Iron Redu Soils (Ce	) ates (B13) Odor (C1) oheres (C3) uced Iron (C- uction in		Secondary Ir Wate Sedir Drift Drain Dry-S Thin Crayt Satur Aeria	dicators (2 or more required r Marks (B1) (Riverine) nent Deposits (B2) (Riverine) Deposits (B3) (Riverine) age Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8)
Remarks Hydrology Wetland Indicator Primary Indicators (Ar Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil Aerial Imagery	HY D & rs y one indicator (A1) ble (A2) 1) (Nonriverine) sits (B2) (Nonri acks (B6) ble on (B7)	C 5	<ul> <li>b) LS</li> <li>ent)</li> <li>Salt Cru</li> <li>Biotic C</li> <li>Aquatic</li> <li>Hydroge</li> <li>Oxidized</li> <li>Presend</li> <li>Recent</li> <li>Plowed</li> </ul>	ust (B11) rust (B12) Invertebr en Sulfide d Rhizosp æ of Redu Iron Redu Soils (Ce	) ates (B13) Odor (C1) oheres (C3) uced Iron (C- uction in		Secondary Ir Wate Sedir Drift Dry-S Thin Cray Satur Aeria Shall	ndicators (2 or more required or Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) age Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible on al Imagery (C9)
Remarks Hydrology Wetland Indicato Primary Indicators (Ar Surface Water High Water Tal Saturation (A3) Water Marks (B Sediment Depo Surface Soil Cr Inundation Visil Aerial Imagery Water-Stained	HY DR/ rs y one indicator (A1) (A1) (Nonriverine) sits (B2) (Nonri acks (B6) ble on (B7) .eaves (B9)	c 5	<ul> <li>b) LS</li> <li>ent)</li> <li>Salt Cru</li> <li>Biotic C</li> <li>Aquatic</li> <li>Hydroge</li> <li>Oxidized</li> <li>Presend</li> <li>Recent</li> <li>Plowed</li> </ul>	ust (B11) rust (B12) Invertebr en Sulfide d Rhizosp æ of Redu Iron Redu Soils (Ce	) ates (B13) Odor (C1) oheres (C3) uced Iron (C- uction in	4)	Secondary Ir Wate Sedir Drift Dry-S Thin Cray Satur Aeria Shall FAC-	adicators (2 or more required r Marks (B1) (Riverine) nent Deposits (B2) (Riverine) Deposits (B3) (Riverine) age Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ation Visible on al Imagery (C9) ow Aquitard (D3) Netural Test (D5)
Remarks Hydrology Wetland Indicator Primary Indicators (Ar Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil Aerial Imagery Water-Stained Field Observation	HY DR/ rs y one indicator (A1) (A1) (Nonriverine) sits (B2) (Nonri acks (B6) ble on (B7) .eaves (B9)	C 5	<ul> <li>b) LS</li> <li>ent)</li> <li>Salt Cru</li> <li>Biotic C</li> <li>Aquatic</li> <li>Hydroge</li> <li>Oxidized</li> <li>Presend</li> <li>Recent</li> <li>Plowed</li> </ul>	ust (B11) rust (B12) Invertebr en Sulfide d Rhizosp æ of Redu Iron Redu Soils (Co Explain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C- uction in	4)	Secondary Ir Wate Sedir Drift Dry-S Thin Cray Satur Aeria Shall	adicators (2 or more required r Marks (B1) (Riverine) nent Deposits (B2) (Riverine) Deposits (B3) (Riverine) age Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ation Visible on al Imagery (C9) ow Aquitard (D3) Netural Test (D5)
Remarks Hydrology Wetland Indicator Primary Indicators (Ar Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Surface Soil Cr Inundation Visil Aerial Imagery	HY DR/ rs y one indicator (A1) (A1) (Nonriverine) sits (B2) (Nonri acks (B6) ble on (B7) .eaves (B9)	c 5	<ul> <li>b) LS</li> <li>ent)</li> <li>Salt Cru</li> <li>Biotic C</li> <li>Aquatic</li> <li>Hydroge</li> <li>Oxidized</li> <li>Presend</li> <li>Recent</li> <li>Plowed</li> <li>Other (E</li> </ul>	ust (B11) rust (B12) Invertebr en Sulfide d Rhizosp xe of Redu Iron Redu Soils (C6 Explain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C- uction in	4)	Secondary Ir Wate Sedir Drift Dry-S Thin Cray Satur Aeria Shall FAC-	adicators (2 or more required r Marks (B1) (Riverine) nent Deposits (B2) (Riverine) Deposits (B3) (Riverine) age Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ation Visible on al Imagery (C9) ow Aquitard (D3) Netural Test (D5)

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North State Resources				Habitat Type GRASSIMID
Wetland Determination Data Form - Arid W	lest Reg	ion		Wetland Type
Project/Site:Sisk Dam Corrective Action Project		City/Count	ty: Merced	County Sampling Date: 9/14/0
Applicant/Owner: U.S. Bureau of Reclamation				State: CA_Sampling Point: 39
Investigator(s): J. Colescott				
Landform (hillslope, terrace, etc.) Surtie		_ Local rel	lief (concave	, convex, none) <u>Concrue</u> Slope % <u>O-2</u>
Subregion (LRR)	So	il Map Unit I	Name: Xe	roblucuts, Ext. Gentruy
Are climatic/hydrologic conditions on the site typical for this ti	ime of year	YES !	(If no, explai	n in remarks.)
Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u> signific				
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natura	Illy problem	atic? (If nee	eded, explai	n any answers in Remarks.)
Summary of Findings (Attach site map showing Hydrophytic vegetation? YES Hydric soil? YES Weth				
USACE Jurisdiction Adjacent to Waters Tributary to Waters Isolate		erstate comm	nerce)	Isolated (non jurisdictional)
Explain: CONNECTED VIL UPLAND SU				
Evaluation of features designated "Ot Indicators: Defined bed and bank Scour_				
Feature Designation: Perennial Intermittent Ep	ohemeral	Blue-lin	e on USGS	Quad
Natural Drainage Artificial Drain	nage	Navigable	Water	
Remarks SMAL DEPRESSIONAL	WEIT	AND		
	A. 10-1 -			
0.10				
		<u> </u>		
Vegetation	Absolute		Indicator	Dominance Test Worksheet Number of dominant species
	Absolute % Cover	Dominant Species?		Dominance Test Worksheet Number of dominant species that are OBL, FACW, or FAC:(A)
Vegetation Tree Stratum (use scientific names)				Number of dominant species that are OBL, FACW, or FAC: (A)
Vegetation				Number of dominant species
Vegetation Tree Stratum (use scientific names) 1				Number of dominant species that are OBL, FACW, or FAC:
Vegetation         Tree Stratum (use scientific names)         1.         2.         3.		<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC: (A) Total number of dominant species 7
Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=20%=	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       Q       (A)         Total number of dominant species across all strata:       Q       (B)         Percent of dominant species that are OBL, FACW, or FAC:       100       (AB)
Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         .	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       A         Total number of dominant species across all strata:       A         Percent of dominant species that       B
Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (D)         (A)       (A)         Percent of dominant species that are OBL, FACW, or FAC:       (A)         Prevalence index Worksheet       (A)
Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (D)         (A)       (A)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet Total % Cover of:       Multiply by
Vegetation         Tree Stratum (use scientific names)         1.	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       (A)         Total number of dominant species across all strata:       (A)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet Total % Cover of:       (AB)         OBL Species       (A)
Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         .	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet Total % Cover of:       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FAC Species $x 4 =$
Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         .	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u>	<u>Species?</u>	Status Status Status Status FACW	Number of dominant species that are OBL, FACW, or FAC:       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (D)         (AB)       (AB)         Prevalence Index Worksheet Total % Cover of:       (AB)         OBL Species       100         (AB)       (AB)         Prevalence Index Worksheet Total % Cover of:       (AB)         OBL Species       100         (AB)       (AB)         FACW Species       100         (AB)       (AB)         (
Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         .	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>40</u> 20	<u>Species?</u>	Status Status Status FACW	Number of dominant species that are OBL, FACW, or FAC:       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet Total % Cover of:       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FAC Species $x 4 =$
Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         .	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>40</u> <u>20</u>	Species?	Status Status Status FACW	Number of dominant species that are OBL, FACW, or FAC:       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (D)         (AB)       (AB)         Prevalence Index Worksheet Total % Cover of:       (AB)         OBL Species       10         (AB)       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       10         (AB)       10         (AB)       (AB)         Prevalence Index Worksheet Total % Cover of:       Multiply by         OBL Species       10         (AB)       10         (AB)       (AB)
Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=         20%=         Total Cover:         Sapling/Shrub Stratum (use scientific names)         Sapling/Shrub Stratum (use scientific names)         .	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>40</u> 20	Species?	Status Status Status FACW OF2L FACU UfL	Number of dominant species that are OBL, FACW, or FAC:       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (D)         (AB)       (AB)         Prevalence index Worksheet Total % Cover of:       (AB)         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FAC Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (A)
Vegetation Tree Stratum (use scientific names) 1	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>40</u> <u>20</u>	Species?	Status Status Status FACW OBL FACW UPL FACW	Number of dominant species that are OBL, FACW, or FAC: $(A)$ Total number of dominant species across all strata: $(B)$ Percent of dominant species that are OBL, FACW, or FAC: $(DO)$ (AB)         Prevalence index Worksheet Total % Cover of: $(A)$ OBL Species $x1 =$ FACW Species $x2 =$ FAC Species $x3 =$ FAC Species $x4 =$ UPL Species $x5 =$ Column Totals $(A)$ Prevalance Index = B/A =       (A)
Vegetation Tree Stratum (use scientific names) 1 2 3 50%= 20%= Total Cover: Sapling/Shrub Stratum (use scientific names)  Sapling/Shrub Stratum (use scientific names)  50%= 20%= Total Cover: terb Stratum (use scientific names)   	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>40</u> <u>20</u>	Species?	Status Status Status FACW OF2L FACU UfL	Number of dominant species that are OBL, FACW, or FAC:       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (D)         (AB)       (AB)         Prevalence index Worksheet Total % Cover of:       (AB)         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =         Hydrophytic Vegetation Indicators Dominance Text is >50%
Vegetation Tree Stratum (use scientific names) 1	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>40</u> <u>20</u> <u>15</u> <u>5</u> <u>5</u>	Species?	Status Status Status FACW OBL FACW UPL FACW	Number of dominant species that are OBL, FACW, or FAC:       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (D)         (AB)       (AB)         Prevalence index Worksheet Total % Cover of:       (AB)         OBL Species $x1 =$ FACW Species $x2 =$ FAC Species $x3 =$ FACU Species $x4 =$ UPL Species $x5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)         Prevalence Index = B/A =       (B)
Vegetation Tree Stratum (use scientific names) 1	<u>% Cover</u> <u>% Cover</u> <u>40</u> <u>20</u> <u>10</u> <u>15</u> <u>5</u> <u>5</u> <u>95</u>	Species?	Status Status FACW OBL FACW UPL VPL	Number of dominant species that are OBL, FACW, or FAC:       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (D)         (AB)       (AB)         Prevalence index Worksheet Total % Cover of:       (AB)         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =         Hydrophytic Vegetation Indicators         Dominance Text is >50%         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Vegetation Tree Stratum (use scientific names) 1	<u>% Cover</u> <u>% Cover</u> <u>% Cover</u> <u>40</u> <u>20</u> <u>15</u> <u>5</u> <u>5</u>	Species?	Status Status FACW OBL FACW UPL VPL	Number of dominant species that are OBL, FACW, or FAC: $(A)$ Total number of dominant species across all strata: $(A)$ Percent of dominant species that are OBL, FACW, or FAC: $(B)$ Prevalence Index Worksheet Total % Cover of: $(DO)$ (AB)         Prevalence Index Worksheet $(A)$ Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 5 =$ Column Totals $(A)$ Prevalance Index = $B/A =$ Hydrophytic Vegetation Indicators         Dominance Text is >50%         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)         "Indicators of hydric soil and wetland hydrology must
Vegetation Tree Stratum (use scientific names) 1	<u>% Cover</u> <u>% Cover</u> <u>40</u> <u>20</u> <u>10</u> <u>15</u> <u>5</u> <u>5</u> <u>95</u>	Species?	Status Status FACW OBL FACW UPL VPL	Number of dominant species that are OBL, FACW, or FAC:       (A)         Total number of dominant species across all strata:       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (D)         (AB)       (AB)         Prevalence index Worksheet Total % Cover of:       (AB)         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =         Hydrophytic Vegetation Indicators         Dominance Text is >50%         Prevalence Index is $\leq 3.0^1$ Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet)         Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

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Sampling Point 39

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Depth Matrix	Redox Features				the absence of	
(inches) Color (moist) %	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-12 104R4/6 85		- 40	_ <u>D</u>	_ <u>M_</u>	SANDY	/
	75 YR 4/6	_5_		RC	<u> </u>	\$1
Types: C = Concentration D = Depletion			Dication: PL			Channel M = Matrix oblematic Hydric Soils <sup>3</sup>
Hydric Soil Indicators: (Applicab						
Histosol (A1)		Gleyed Ma	, ,			Muck (A9) (LRR C)
Histic Epipedon (A2)		Redox (S5	•			Muck (A10) (LRR B)
Black Histic (A3)		d Matrix (S	•			ced Vetric (F18)
Hydrogen Sulfide (A4)		Mucky Min				Parent Materials (TF2)
Stratified Layers (AG) (LRR C)	-	-	• •			ated Sand/Gravel Bars
1 cm Muck (A9) (LRR D)		ed Matrix (F			Other	(Explain in Remarks)
Depleted Below Dark Surface (	•	Dark Surfa			<b>0</b>	et i til som station and
Thick Dark Surface (A12)		ed Dark Su				f hydrophytic vegetation and ology must be present.
Sandy Mucky Mineral (S1)	<u> </u>	Depression	ns (F8)		wettantu riyur	ology must be present.
	Vernal	Pools (F9)				
Restrictive Layer (if present): Type: _		Depth (Inc			ic Soil? YES	
		Deputring	(les)	nyui		
	0114.					
Remarks HUDEIC 4	0114.					licators (2 or more required)
Remarks H Deic 4 Hydrology Wetland Indicators Primary Indicators (Any one indicator is	s sufficient)				Secondary Ind	licators (2 or more required)
Remarks Hypeic 4 Hydrology Wetland Indicators Primary Indicators (Any one indicator is Surface Water (A1)	s sufficient).	ust (B11)			Secondary Ind	<u>dicators (2 or more required)</u> Marks (B1) (Riverine)
Remarks       Hydrology         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is	s sufficient) Salt Cru Biotic C	ıst (B11) rust (B12)			Secondary Ind	<u>dicators (2 or more required</u> Marks (B1) (Riverine) Jent Deposits (B2) (Riverine
Remarks Hypeic 4 Hydrology Wetland Indicators Primary Indicators (Any one indicator is Surface Water (A1) High Water Table (A2) Saturation (A3)	s sufficient) Salt Cru Biotic C Aquatic	ist (B11) rust (B12) Invertebrat	tes (B13)		Secondary Ind	dicators (2 or more required) Marks (B1) (Riverine) Ment Deposits (B2) (Riverine) Deposits (B3) (Riverine)
Remarks       Hydrology         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is	s sufficient). Salt Cru X Biotic C Aquatic Hydroge	ist (B11) rust (B12) Invertebrat en Sulfide C	tes (B13) Ddor (C1)		Secondary Ind	<u>dicators (2 or more required)</u> Marks (B1) (Riverine) pent Deposits (B2) (Riverine) peposits (B3) (Riverine) age Patterns (B10)
Remarks       Hydrology         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is	s sufficient) S sufficient) Salt Cru Salt Cru Aquatic Aquatic Hydroge srine)	ist (B11) rust (B12) Invertebrat en Sulfide C d Rhizosph	tes (B13) Ddor (C1) eres (C3)		Secondary Ind Water Sedim Drift D Draina Dry-S	dicators (2 or more required) Marks (B1) (Riverine) ment Deposits (B2) (Riverine) eposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2)
Remarks       Hydrology         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is	s sufficient). Salt Cru Salt Cru Salt Cru Biotic C Aquatic Hydroge erine) N Oxidized Presence	ist (B11) rust (B12) Invertebrat en Sulfide C d Rhizosph ee of Reduc	tes (B13) Ddor (C1) eres (C3) æd Iron (C		Secondary Ind Water Sedim Drift D Draina Dry-S Thin M	dicators (2 or more required) Marks (B1) (Riverine) pent Deposits (B2) (Riverine) peposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) fluck Surface (C7)
Remarks       Hydrology         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is	s sufficient) S sufficient) Salt Cru Salt Cru Salt Cru Aquatic Hydroge Salt Cru Presence Recent	ist (B11) rust (B12) Invertebrat en Sulfide C d Rhizosph e of Reduc Iron Reduc	tes (B13) Ddor (C1) eres (C3) xed Iron (C tion in		Secondary Ind Water Sedim Drift D Draina Dry-S Thin M Crayfi	dicators (2 or more required) Marks (B1) (Riverine) ment Deposits (B2) (Riverine) age Patterns (B10) eason Water Table (C2) Muck Surface (C7) sh Burrows (C8)
Remarks       Hydrology         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is	s sufficient) S sufficient) Salt Cru Salt Cru Salt Cru Aquatic Aquatic Hydroge Presence Recent Plowed	ist (B11) rust (B12) Invertebrat en Sulfide C d Rhizosph ee of Reduc	tes (B13) Ddor (C1) eres (C3) æd Iron (C tion in		Secondary Ind Water Sedim Drift D Draina Dry-S Thin M Crayfi Satura	dicators (2 or more required) Marks (B1) (Riverine) pent Deposits (B2) (Riverine) peposits (B3) (Riverine) age Patterns (B10) eason Water Table (C2) fluck Surface (C7)
Remarks       Hydrology         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is	s sufficient) S sufficient) Salt Cru Salt Cru Salt Cru Aquatic Aquatic Hydroge Presence Recent Plowed	ist (B11) rust (B12) Invertebrat en Sulfide C d Rhizosph æ of Reduc Iron Reduc Soils (C6)	tes (B13) Ddor (C1) eres (C3) æd Iron (C tion in		Secondary Ind Water Sedim Drift D Dry-S Thin M Crayfi Satura Aeria	dicators (2 or more required) Marks (B1) (Riverine) Ment Deposits (B2) (Riverine) Meposits (B3) (Riverine) Mage Patterns (B10) Muck Surface (C7) Sh Burrows (C8) Mation Visible on
Remarks       Hydrology         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is	s sufficient) S sufficient) Salt Cru Salt Cru Salt Cru Aquatic Aquatic Hydroge Presence Recent Plowed	ist (B11) rust (B12) Invertebrat en Sulfide C d Rhizosph æ of Reduc Iron Reduc Soils (C6)	tes (B13) Ddor (C1) eres (C3) æd Iron (C tion in		Secondary Ind Water Sedim Drift D Draina Dry-S Thin M Crayfi Satura Aeria Shallo	dicators (2 or more required) Marks (B1) (Riverine) pent Deposits (B2) (Riverine) age Patterns (B10) eason Water Table (C2) /luck Surface (C7) sh Burrows (C8) ation Visible on I Imagery (C9)
Remarks       Hydrology         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is	s sufficient) S sufficient) Salt Cru Salt Cru Salt Cru Aquatic Aquatic Hydroge Presence Recent Plowed	ist (B11) rust (B12) Invertebrat en Sulfide C d Rhizosph æ of Reduc Iron Reduc Soils (C6)	tes (B13) Ddor (C1) eres (C3) æd Iron (C tion in	<b>4</b> )	Secondary Ind Water Sedim Drift D Draina Dry-S Thin M Crayfi Satura Aeria Shallo FAC-1	dicators (2 or more required) Marks (B1) (Riverine) Marks (B1) (Riverine) Marks (B3) (Riverine) Mage Patterns (B10) Muck Surface (B10) Muck Surface (C7) Sh Burrows (C8) Muck Surface (C9) Muck
Remarks       Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is	s sufficient) S sufficient) Salt Cru Salt Cru Salt Cru Aquatic Aquatic Hydroge Presence Recent Plowed	ist (B11) rust (B12) Invertebrat en Sulfide C d Rhizosph e of Reduc Soils (C6) Explain in R	tes (B13) Ddor (C1) eres (C3) æd Iron (C tion in	<b>4</b> )	Secondary Ind Water Sedim Drift D Draina Dry-S Thin M Crayfi Satura Aeria Shallo FAC-1	dicators (2 or more required) Marks (B1) (Riverine) Marks (B1) (Riverine) Mage Patterns (B2) (Riverine) Mage Patterns (B10) Muck Surface (C7) Muck Surface (C7) Sh Burrows (C8) Mation Visible on Magery (C9) Mark Aquitard (D3)
Remarks       Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is	s sufficient) S sufficient) Salt Cru Salt Cru Salt Cru Aquatic Aquatic Hydroge Presence Recent Plowed Other (E	Ist (B11) rust (B12) Invertebrat en Sulfide ( d Rhizosph d Rhizosph e of Reduc Iron Reduc Soils (C6) Explain in R	tes (B13) Ddor (C1) eres (C3) æd Iron (C tion in	<b>4</b> )	Secondary Ind Water Sedim Drift D Draina Dry-S Thin M Crayfi Satura Aeria Shallo FAC-1	dicators (2 or more required) Marks (B1) (Riverine) Marks (B1) (Riverine) Marks (B3) (Riverine) Mage Patterns (B10) Muck Surface (B10) Muck Surface (C7) Sh Burrows (C8) Muck Surface (C9) Muck
Remarks       Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is	s sufficient). S sufficient). Salt Cru Salt Cru Salt Cru Salt Cru Aquatic Hydroge Presenc Presenc Conter (E No Depth (inchest)	Ist (B11) rust (B12) Invertebrat en Sulfide C d Rhizosph e of Reduc Soils (C6) Explain in R	tes (B13) Ddor (C1) eres (C3) xed Iron (C tion in temarks)	<b>4</b> )	Secondary Ind Water Sedim Drift D Draina Dry-S Thin M Satura Aeria Shallo FAC-f	dicators (2 or more required) Marks (B1) (Riverine) Marks (B1) (Riverine) Marks (B3) (Riverine) Mage Patterns (B10) Muck Surface (B10) Muck Surface (C7) Sh Burrows (C8) Muck Surface (C9) Muck

North State Resources	а.	Habitat Type GRASS UT D
Wetland Determination Data Form - Arid V	-	Wetland Type _UPLAND
Project/Site:Sisk Dam Corrective Action Project	City/County: Merced	County Sampling Date: 9/14/00
Applicant/Owner: U.S. Bureau of Reclamation		State: <u>CA</u> Sampling Point: <u>40</u>
Investigator(s): J. Colescott		
Landform (hillslope, terrace, etc.) Swhre	Local relief (concave	e, convex, none) CONCIVE Slope % ~~~
Subregion (LRR) LRR-C	Soil Map Unit Name: BA	WAR LORM, 2-8% SLOPES
Are climatic/hydrologic conditions on the site typical for this	time of year? 455 (If no, explai	in in remarks.)
Are vegetation $N_{\rm e}$ , soil $N_{\rm e}$ , or hydrology $N_{\rm e}$ signifi	cantly disturbed? Are normal circur	nstances present?
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{P}$ natura	ally problematic? (If needed, explai	n any answers in Remarks.)
Summary of Findings (Attach site map showing	sampling point locations, transects	, important features, etc.)
Hydrophytic vegetation? NO_Hydric soil? NO_Wet		
USACE Jurisdiction	· · · · · · · · · · · · · · · · · · ·	
Adjacent to Waters Tributary to Waters Isolat	ed (with interstate commerce)	_ Isolated (non jurisdictional)
Explain:	· · · · · · · · · · · · · · · · · · ·	
Evaluation of features designated "Ot Indicators: Defined bed and bank Scour_		
Feature Designation Perennial Intermittent E	phemeral Blue-line on USGS	
Natural Drainage Artificial Drain		27
PAIR TO DP 41.)	DE SINTU	WETUMD. (UPUMD
Phip To No un	5 00 70001 0	Cordinas
TATIC TO DP 4(.)		
Vegetation	Absolute Dominant Indicator	Dominance Test Worksheet Number of dominant species
Tree Stratum (use scientific names)	<u>% Cover</u> <u>Species?</u> <u>Status</u>	that are OBL, FACW, or FAC: (A)
1		
3.		Total number of dominant species (B)
50%= 20%= Total Cover:		
Sapling/Shrub Stratum (use scientific names)	% Cover Species? Status	Percent of dominant species that are OBL. FACW, or FAC:(AB)
	MOUTE OPENEST OLANS	,
2		Prevalence Index Worksheet Total % Cover of: Multiply by
3		Total % Cover of:     Multiply by       OBL Species     x1/2
4		FACW Species x2 =
50%= 20%= Total Cover:		
Herb Stratum (use scientific names)	% Cover Species? Status	
1. Marrudium volaare	30 Y FAC	
2 Bromus diandrips	40 Y UPL	UPL Species x5 =
3. Brommes Madritensis	20 Y JUPL	Column Totals (A) (B)
4. Brassion meara	10 N UPL	Prevalance Index = B/A =
5. Silybury Marianium	10 N UPL	Hydrophytic Vegetation Indicators
6		Dominance Text is >50%
7		Prevalence Index is ≤ 3.0 <sup>1</sup> Morphological Adaptations <sup>1</sup> (provide supporting
50%= 20%= Total Cover:		data in Remarks or on a separate sheet)
Woody/Vine Stratum (use scientific names)	% Cover Species? Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1	· · · · · · · · · · · · · · · · · · ·	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.
2		612
50%= 20%= Total Cover:	- <u>19 in</u>	Hydrophytic Vegetation? <u>NU</u>
% Bare Ground in Herb Stratum % Cover of Biot	Ic Crust 🚬	

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Sampling Point 40

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Depth Matrix Redox Features	
(inches) <u>Color (moist) % Color (moist) % Type1 Lo</u>	
172 10423/2 100	- LOAM -
ypes: $C = Concentration D = Depletion RM = Reduced Matrix 2Location: PL = Por$	e Lining RC = Root Channel M = Matrix
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)	Indicators for Problematic Hydric Soils <sup>3</sup>
Histosol (A1) Sandy Gleyed Matrix (S4)	1 cm Muck (A9) (LRR C)
Histic Epipedon (A2) Sandy Redox (S5)	2 cm Muck (A10) (LRR B)
Black Histic (A3) Stripped Matrix (S6)	Reduced Vetric (F18)
Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1)	Red Parent Materials (TF2)
Stratified Layers (AG) (LRR C) Loamy Gleyed Matrix (F2)	Vegetated Sand/Gravel Bars
1 cm Muck (A9) (LRR D) Depleted Matrix (F3)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11) Redox Dark Surface (F6)	
Thick Dark Surface (A12) Depleted Dark Surface (F7)	<sup>3</sup> Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) Redox Depressions (F8)	wetland hydrology must be present.
Vernal Pools (F9)	
Remarks NON-144DRIC SOILS	lydric Soil? <u>NO</u>
Remarks NON-144DRIC GOILS Hydrology Vetland Indicators	
Remarks NON-144DRIC GOILS Hydrology Vetland Indicators	
Iverarks NON-HYDRIC SOILS	
Internarks MON-144DR1C SOILS Indrology International Indicators International Indicators (Any one indicator is sufficient)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine)
Iemarks       MON-HYDRIC       Solles         Iydrology       Igen and Indicators         Imary Indicators (Any one indicator is sufficient)       Salt Crust (B11)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine)
Itemarks       MON-HYDR/C       GOILS         Iydrology       Iteland Indicators         Imary Indicators (Any one indicator is sufficient)	<u>Secondary Indicators (2 or more required</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine
Itemarks       MON-HYDR/C       GOILS         Iydrology	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine)
Remarks       MON-HYDR/C       GOILS         Iydrology       //etland Indicators         /etland Indicators       //etland Indicators         imary Indicators (Any one indicator is sufficient)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine Drift Deposits (B3) (Riverine) Drainage Patterns (B10)
Remarks       MON-HYDRIC       GOILS         iydrology       ////////////////////////////////////	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2)
Remarks       MON-HYDRIC       GOILS         iydrology	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on
Remarks       NON-HYDR/C       GOILS         iydrology	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible-on Aerial Imagery (C9)
Remarks       MON-HYDRIC       GOILS         iydrology	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible-on Aerial Imagery (C9) Shallow Aquitard (D3)
Remarks       MON-HYDRIC       GDILS         Hydrology       Vetland Indicators         Vetland Indicators       Indicators         Primary Indicators (Any one indicator is sufficient)       Salt Crust (B11)         Surface Water (A1)       Salt Crust (B11)         High Water Table (A2)       Biotic Crust (B12)         Saturation (A3)       Aquatic Invertebrates (B13)         Water Marks (B1) (Nonriverine)       Hydrogen Sulfide Odor (C1)         Sediment Deposits (B2) (Nonriverine)       Oxidized Rhizospheres (C3)         Surface Soil Cracks (B6)       Presence of Reduced Iron (C4)         Inundation Visible on       Recent Iron Reduction in         Aerial Imagery (B7)       Plowed Soils (C6)         Water-Stained Leaves (B9)       Other (Explain in Remarks)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible-on Aerial Imagery (C9)
Remarks       MON-HYDRIC       GOILS         Hydrology       Vetland Indicators         Vetland Indicators       Indicators         Immary Indicators (Any one indicator is sufficient)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible-on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Netural Test (D5)
Remarks       MON-HYDR/C       GOILS         Hydrology	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible-on Aerial Imagery (C9) Shallow Aquitard (D3)
Remarks       MON-HYDRIC       GBILS         Hydrology       Vetland Indicators         Vetland Indicators       Salt Crust (B11)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Netural Test (D5) and Hydrology? YesNo

North State Resources				Habitat Type CRASSIAND
Wetland Determination Data Form - Arid V	Vest Reg	lion		Wetland Type SEASONAL NTLD
		5-11 C		· 1
Project/Site:Sisk Dam Corrective Action Project				
Applicant/Owner: U.S. Bureau of Reclamation				State: <u>CA</u> Sampling Point: <u>7</u>
Investigator(s): J. Colescott	<u> </u>			- March 15 March Al
Landform (hillslope, terrace, etc.) DEPRESSION		_ Local rel	ief (concave,	convex, none) <u>CAUE</u> Slope % <u>Ca</u>
Subregion (LRR)	So	il Map Unit I	Name: DA	WAR LOTA 25%
Are climatic/hydrologic conditions on the site typical for this				
Are vegetation, soil, or hydrology signifi				
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natura	ally problem	atic? (If ne	eded, explair	any answers in Remarks.)
Summary of Findings (Attach site map showing	sampling p	oint location	s, transects,	important features, etc.)
Hydrophytic vegetation? 4ES Hydric soil? 4ES Wet				
USACE Jurisdiction Adjacent to Waters Tributary to Waters X Isolate Explain:	ed (with inte	erstate comm	nerce)	Isolated (non jurisdictional)
Evaluation of features designated "Ot				
Indicators: Defined bed and bank Scour _ Feature Designation: Pereprint Intermittent E	Ordin ohemeral	nary High Wa Blue-lin	ater Mark Ma e on USGS	Apped Quad
Natural Drainage Artificial Drain				
Remarks GUAL LISTIAN	DAI 41	(01)	FALL	LED NHERE VALLEY
Smill WIZIDING	1. 0	DAD	DONSM	HED NHERE VALLEY + HELI PAD HILL.
AREA 15 CONSTRICTED B,	NO K	DAD	FICT SPA	A Meli 100 Mice.
Vegetation	Absolute		Indicator	Dominance Test Worksheet
Tree Stratum (use scientific names)	% Cover	Species?	Status	Number of dominant species (A)
1				
2			<del></del>	Total number of dominant species <u></u> (B)
3				
50%= 20%= Total Cover:			-	Percent of dominant species that 160 (AB)
Sapling/Shrub Stratum (use scientific names) 1. Baccharis salicitalia	% Cover	Species?	Status	are OBL, FACW, or FAC: (AB)
		19/27	HACW	Prevalence Index Worksheet
2				Total % Cover of: Multiply by
3				OBL Species x 1 =
4	10			FACW Species x 2 =
			o	FAC Species x3 =
Herb Stratum (use scientific names) 1. LeDidium latifolium	% Cover	Species?		FACU Species x4 =
		YES	Etcu	UPL Species x5=
2. Marrugium Volaare 3. Bronws Madriteus, 5		N	UPL	Column Totals (A) (B)
A. Conium maculatum		N		Prevalance Index = B/A =
5 Maeula Jum			URL	•
3				Hydrophytic Vegetation Indicators
	<u> </u>			Prevalence Index is < 3.01
50%=_ <u>45</u> 20%=_ <u>18</u> Total Cover:	90			Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet)
Voody/Vine Stratum (use scientific names)		Species?	Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	N OUTO	000001	Status	Indicators of hydric soil and wetland hydrology must
	47-			be present.
50%= 20%= Total Cover-			*	Hydrophytic Vegetation? 165
Bare Ground in Herb Stratum 20 % Cover of Blot				
			,	

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Soils								
Profile Depth	Description: (Des Matrix	scribe to th	e depth needed to Redox Feat		he indicator of	or confirm	the absence o	f indicators.
(inches)	Color (moist)	95	Color (moist)		Type <sup>1</sup> RM	Loc <sup>2</sup>	Texture	Remarks
			7.598 5/8	<u> </u>		<u>PL</u>		·
<sup>1</sup> Types: (	C = Concentration D = 1	Depletion	RM = Reduced Mat		<sup>2</sup> Location: PL	= Pore Lir	ning RC = Roc	ot Channel M = Matrix
Hydric	Soil Indicators: (	Applicable	to all LRRs, unles	s otherwise	noted)		Indicators for	Problematic Hydric Soils <sup>3</sup>
H	Histosol (A1)		Sa	dy Gleyed I	Matrix (S4)		1 cm	Muck (A9) (LRR C)
·H	listic Epipedon (A2)		Sa	dy Redox (	S5)		2 cm	Muck (A10) (LRR B)
E	Black Histic (A3)		Śtri	oped Matrix	(S6)		Red	uced Vetric (F18)
ŀ	lydrogen Sulfide (A4)		Loa	my Mucky N	Mineral (F1)		Red	Parent Materials (TF2)
8	Stratified Layers (AG)	(LRR C)	Loa	my Gleyed I	Matrix (F2)		Veg	etated Sand/Gravel Bars
1	cm Muck (A9) (LRR	D)	De	leted Matrix	(F3)		Othe	er (Explain in Remarks)
	epieted Below Dark S	Surface (A	11) Red	ox Dark Su	rface (F6)			
1	hick Dark Surface (Af	12)	Dep	leted Dark \$	Surface (F7)			of hydrophytic vegetation and
S	andy Mucky Mineral (	(S1)	Rec	ox Depress	ions (F8)		wetland hyd	lrology must be present.
			Mar					
			ver	nal Pools (F	9)			
	val aver (if procent):						ria Sailo YES	
	ve Layer (if present):		NON 5		9) Inches)	Hyd	ric Soil? [ 丘S	
	ve Layer (if present): ks HYDRIC		NON 5			Hyd	ric Soil? [ES	
Remai	KS HYDRIC		NON 5			Hydi	ric Soil? <u>(</u> をS	
Reman	ks HyDRIC		NON 5			Hyd	ric Soil? (ES	
Reman Hydro Wetlar	KS HYDRIC	501	LS			Hydi		ndicators (2 or more required)
Reman Hydro Wetlar Primary	iks HYDEIC	501	Non E LS sufficient)	_ Depth (I	inches)	Hyd	Secondary In	-
Reman Hydro Wetlar Primary	ks HYDRIC blogy Ind Indicators Indicators (Any one in	501	Non E LS sufficient)Salt		inches)	Hydi	Secondary In	ndicators (2 or more required)
Reman Hydro Wetlan Primary Si Si H	ks HYDEIC blogy ad Indicators Indicators (Any one in urface Water (A1)	501	Non E LS sufficient) Salt Biot	_ Depth (I	(inches)	Hydi	Secondary In	ndicators (2 or more required) er Marks (B1) (Riverine)
Reman	ks HYDEIC blogy Indicators Indicators (Any one in urface Water (A1) igh Water Table (A2)	ج ک ا	Non E LS sufficient) Salt Bioti Aqu	Depth (I Crust (B11) c Crust (B12 atic Inverteb	(inches)	Hydi	Secondary In Wate Sedi Drift	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine)
Reman	ks HYDEIC blogy ad Indicators Indicators (Any one in urface Water (A1) igh Water Table (A2) aturation (A3)	dicator is siverine)	Non 2 LS sufficient) Salt Aqu Hyd	_ Depth (I Crust (B11) c Crust (B12 atic Inverteb ogen Sulfide	2) rates (B13) e Odor (C1)	Hydi	Secondary In Wate Sedi Drift Drain	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine)
Reman	ks HYDEIC blogy Indicators Indicators (Any one in urface Water (A1) igh Water Table (A2) aturation (A3) fater Marks (B1) (Nonr	بر کر ا <u>idicator is s</u> iverine) (Nonriverin	Non $\underline{\xi}$ LS sufficient) Salt Bioti Aqu Hydi ne) $\underline{\lambda}$ Oxid	Depth (I Crust (B11) c Crust (B12 atic Inverteb ogen Sulfide ized Rhizos	(Inches)		Secondary In Wate Sedi Drift Dry-	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10)
Reman	ks HYDEIC ology Indicators Indicators (Any one in urface Water (A1) igh Water Table (A2) aturation (A3) 'ater Marks (B1) (Nonr ediment Deposits (B2)	بر کر ا <u>idicator is s</u> iverine) (Nonriverin	Non $\underline{\xi}$ sufficient) Salt Bioti Aqu he) $\underline{\lambda}$ Oxic Pres	Depth (I Crust (B11) c Crust (B12 atic Inverteb ogen Sulfide ized Rhizos	2) rates (B13) e Odor (C1) pheres (C3) duced Iron (C		Secondary In Wate Sedi Drift Dry- Thin	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2)
Reman	ks HYDEIC ology Indicators Indicators (Any one in urface Water (A1) igh Water Table (A2) aturation (A3) later Marks (B1) (Nonr ediment Deposits (B2) urface Soil Cracks (B6)	بر کر ا <u>idicator is s</u> iverine) (Nonriverin	Non 2 LS sufficient) Salt Bioti Hydi Hydi Hydi Pres Reco	Depth (I Crust (B11) c Crust (B12 atic Inverteb ogen Sulfide ized Rhizos ence of Red	2) rates (B13) e Odor (C1) pheres (C3) duced Iron (C luction in		Secondary In Wate Sedi Drift Dry- Thin Cray	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7)
Reman	ks HYDEIC Dogy Indicators Indicators (Any one in urface Water (A1) igh Water Table (A2) aturation (A3) ater Marks (B1) (Nonr ediment Deposits (B2) urface Soil Cracks (B6 undation Visible on	ي م <u>idicator is s</u> iverine) (Nonriverin	Non $\leq$ LS sufficient) Salt Bioti Aqu Hydr ne) $\bigwedge$ Oxic Pres Reco Ploy	Depth (I Crust (B11) c Crust (B12 atic Inverteb ogen Sulfide ized Rhizos ence of Red ent Iron Red	2) rates (B13) e Odor (C1) pheres (C3) duced Iron (C luction in 6)		Secondary In Wate Sedi Drift Dry-i Thin Cray Satu	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8)
Reman	ks HYDEIC ology Indicators Indicators (Any one in urface Water (A1) igh Water Table (A2) aturation (A3) ater Marks (B1) (Nonr ediment Deposits (B2) urface Soil Cracks (B6 undation Visible on erial Imagery (B7)	ي م <u>idicator is s</u> iverine) (Nonriverin	Non $\leq$ LS sufficient) Salt Bioti Aqu Hydr ne) $\bigwedge$ Oxic Pres Reco Ploy	Depth (I Crust (B11) c Crust (B12 atic Inverteb ogen Sulfide ized Rhizos ence of Red ent Iron Red red Soils (C	2) rates (B13) e Odor (C1) pheres (C3) duced Iron (C luction in 6)		Secondary II Wate Sedi Drift Dry- Thin Cray Satu Aeri Shall	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible on al Imagery (C9) ow Aquitard (D3)
Reman	ks HYDEIC ology Indicators Indicators (Any one in urface Water (A1) igh Water Table (A2) aturation (A3) ater Marks (B1) (Nonr ediment Deposits (B2) urface Soil Cracks (B6 undation Visible on erial Imagery (B7)	ي م <u>idicator is s</u> iverine) (Nonriverin	Non $\leq$ LS sufficient) Salt Bioti Aqu Hydi ne) $\bigwedge$ Oxio Pres Reco Plon Other	Depth (I Crust (B11) c Crust (B12 atic Inverteb ogen Sulfide ized Rhizos ence of Red ent Iron Red red Soils (C	2) rates (B13) e Odor (C1) pheres (C3) duced Iron (C luction in 6)		Secondary II Wate Sedi Drift Dry- Thin Cray Satu Aeri Shall	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) nage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible on al Imagery (C9)
Reman	ks HYDEIC ology Indicators Indicators (Any one in urface Water (A1) igh Water Table (A2) aturation (A3) ater Marks (B1) (Nonr ediment Deposits (B2) urface Soil Cracks (B6 undation Visible on erial Imagery (B7)	ي م <u>idicator is s</u> iverine) (Nonriverin	Non $\leq$ LS sufficient) Salt Bioti Aqu Hydi ne) $\bigwedge$ Oxio Pres Reco Plon Other	Depth (I Crust (B11) c Crust (B12 atic Inverteb ogen Sulfide ized Rhizos ence of Red ent Iron Red red Soils (C	2) rates (B13) e Odor (C1) pheres (C3) duced Iron (C luction in 6)	:4)	Secondary II Wate Sedi Drift Drain Dry- Thin Cray Satu Aeri Shall FAC	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible on al Imagery (C9) ow Aquitard (D3) Netural Test (D5)
Reman	ks HUDEIC Dogy Indicators Indicators (Any one in urface Water (A1) igh Water Table (A2) aturation (A3) ater Marks (B1) (Nonr ediment Deposits (B2) urface Soil Cracks (B6 undation Visible on erial Imagery (B7) ater-Stained Leaves (	iverine) (Nonriverine) (Nonriverine) (المعادية) (المعادة) (المعادة) (المعادة) (المعادية) (المعادية) (المعادية) (المعادية) (المعادية) (المعادية) (المعادية) (المعادة)) (المعادة	Non $\leq$ LS sufficient) Salt Bioti Aqu Hydi Pres Reco Plov Other LS	Depth (I Crust (B11) c Crust (B12 atic Inverteb ogen Sulfide ized Rhizos ence of Red ent Iron Red yed Soils (C r (Explain in	2) rates (B13) e Odor (C1) pheres (C3) duced Iron (C luction in 6)	:4)	Secondary II Wate Sedi Drift Dry- Thin Cray Satu Aeri Shall	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible on al Imagery (C9) ow Aquitard (D3) Netural Test (D5)
Reman	ks HUDEIC ology d Indicators Indicators (Any one in urface Water (A1) igh Water Table (A2) aturation (A3) ater Marks (B1) (Non- ediment Deposits (B2) urface Soil Cracks (B6) undation Visible on erial Imagery (B7) ater-Stained Leaves ( bservations ater Present? Yes	iverine) (Nonriverine) (Nonriverine) (المعادية) (المعادة) (المعادة) (المعادة) (المعادية) (المعادية) (المعادية) (المعادية) (المعادية) (المعادية) (المعادية) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة)) (المعادة))) ((لمعادة))) ((لمعادة))) ((لمعادة))) ((ل	Non $\leq$ LS sufficient) Salt Bioti Aqu Hydi Pres Recc Plon Other Monte	Depth (I	2) rates (B13) e Odor (C1) pheres (C3) duced Iron (C luction in 6)	:4)	Secondary II Wate Sedi Drift Drain Dry- Thin Cray Satu Aeri Shall FAC	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible on al Imagery (C9) ow Aquitard (D3) Netural Test (D5)

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·,	Wetland Determination Data Form - Arid W	Vest Reg	ion		Habitat Type GrassLAND Wetland Type UPLAND
	Project/Site:Sisk Dam Corrective Action Project			he Morood	alula
	Applicant/Owner:U.S. Bureau of Reclamation		Chyroduni	lyiviercec	State: CA_ Sampling Point: 42
	Investigator(s):J. Colescott				
	Landform (hillslope, terrace, etc.) RAVINE		Local rel	lief (concave	, convex, none) CONCAUE Slope % 5
	Subregion (LRR)	50	Local lei	Name: R	LIVAR LOAM 2-8%
-	Are climatic/hydrologic conditions on the site typical for this t	imo of voor	VES	lif no ovolai	n in remarks )
	Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ signifi	contly dietur	tod2 Are n	ormal circun	netances present? YES
	Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natura				
					<u></u>
	Summary of Findings (Attach site map showing Hydrophytic vegetation? NO Hydric soil? NO Wet	sampling p and hydrolo	oint location $gy? NO$	is, transects, _ Is sample	d area a wetland? <u>NC</u> Other waters? <u>NO</u>
	USACE Jurisdiction Adjacent to Waters Tributary to Waters Isolate Explain:	ed (with inte	rstate comm	nerce)	Isolated (non jurisdictional)
	Evaluation of features designated "Ot Indicators: Defined bed and bank Scour Feature Designation: Perennial Intermittent E	Ordin ohemeral	ary High Wa	ater Mark Mark Mare on USGS	
	Natural Drainage Artificial Drain				
	Remarks SMALL SWALE IN	THE !	CANDS	CAPE	DOES NOT SAITSFY
	WETAND PERAMETRES OR S	HOW	INDIC.	thows	OF FLOW (EG.)
	SCOUR + DEPOSITION ? NON U	EIUN	D.		
	Vegetation	Absolute	Dominant	Indicator	Dominance Test Worksheet
	Tree Stratum (use scientific names)	<u>% Cover</u>			Number of dominant species (A)
	1. <u></u>				that are OBL, FACW, or FAC: (A)
	2				Total number of dominant species 2
	3				across all strata:
	50%= 20%= Total Cover: Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	Percent of dominant species that (AB)
	1				Prevalence Index Worksheet
	2		<u> </u>		Total % Cover of: Multiply by
	3		<u></u> )		OBL Species x1=
	4				FACW Species 2 =
	50%= 20%= Total Cover:	<u> </u>	1203 - 1200 - 1200	12000	FAC Species x3 =
	Herb Stratum (use scientific names)	% Cover	Species?		FACU Species x4 =
	1. Brownes hord eacous	20	1	FACH	UPL Species x5=
and and desire a second se	2. Promos diandros	20	<u>، ما کم من</u>	VII	Column Totals (A) (B)
	A. Croton setiaerun		14	UPL	Prevalance Index = B/A =
	5. Eradium botrys	10	N	UPL	
					Hydrophytic Vegetation Indicators Dominance Text is >50% Prevalence Index is ≤ 3.01
7		10		<del></del> :	Morphological Adaptations <sup>1</sup> (provide supporting
	50%= <u>33</u> 20%= <u>13</u> Total Cover:			а.	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	Noody/Vine Stratum (use scientific names)	% Cover	Species?	Status	Indicators of hydric soil and wetland hydrology must
	·/				be present.
. 2					Hydrophytic Vegetation? NO
in after so	50%= 20%= Total Cover: 6 Bare Ground in Herb Stratum <u>35</u> % Cover of Blot				
7	Date Stoulin in new Shattin _2.2. 70 Gover of Blot	ic ofust			2

Sampling Point <u>42</u>

.

	Redox Features Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
-8 7.5YR 16 100					GRAVENY	Long
	<del></del>					
ypes: C = Concentration D = Depletion RM =		2	ocation: PL		ng RC = Root Chann	nel M = Matrix
ydric Soil Indicators: (Applicable to all					ndicators for Problem	
Histosol (A1)	Sandy (			<u>1</u>	1 cm Muck	
Histic Epipedon (A2)	Sandy F	•	. ,			(A10) (LRR B)
Black Histic (A3)	Stripped				Reduced Ve	
Hydrogen Sulfide (A4)	Loamy I		•			Materials (TF2)
Stratified Layers (AG) (LRR C)	Loamy (	-			Vegetated S	
1 cm Muck (A9) (LRR D)	Deplete	-				ain in Remarks)
Depleted Below Dark Surface (A11)	Redox D					•
Thick Dark Surface (A12)			urface (F7)			ophytic vegetation and
Sandy Mucky Mineral (S1)	Redox D		•••		wetland hydrology	must be present.
	Vemal P	Pools (F9)	)			
Remarks NON-HYDRIC 4		Depth (Ind	ches)	Hydrid	c Soil? ND	
Remarks NON-HYDRIC 4	10125	Depth (Ind	ches)	Hydrid		rs (2 or more required
Remarks NON-HYDRIC 4 Hydrology Vetland Indicators rimary Indicators (Any one indicator is suffici	ent)		ches)	Hydrid	Secondary Indicator	
Remarks NON-HYDRIC 4 Hydrology Vetland Indicators rimary Indicators (Any one indicator is suffici Surface Water (A1)	ent)	st (B11)		Hydrid	Secondary Indicato	s (B1) (Riverine)
Remarks NON-HYDRIC 4 Hydrology Vetland Indicators rimary Indicators (Any one indicator is suffici Surface Water (A1) High Water Table (A2)	ent) Salt Crus	st (B11) ust (B12)		Hydrid	Secondary Indicator	s (B1) (Riverine) eposits (B2) (Riverine
Remarks NON-HYDRIC 4 Hydrology Vetland Indicators rimary Indicators (Any one indicator is suffici Surface Water (A1) High Water Table (A2) Saturation (A3)	ent) Salt Crus Biotic Cru Aquatic I	st (B11) ust (B12) nvertebra		Hydrid	Secondary Indicator	s (B1) (Riverine)
Remarks NON-HYDRIC 4 Hydrology Vetland Indicators Primary Indicators (Any one indicator is suffici Surface Water (A1) High Water Table (A2)	ent) Salt Crus Biotic Cru Aquatic I	st (B11) ust (B12) nvertebra n Sulfide	ates (B13)	Hydrid	Secondary Indicator	s (B1) (Riverine) eposits (B2) (Riverine ts (B3) (Riverine)
Remarks NON-HYDRIC 4 Hydrology Vetland Indicators Primary Indicators (Any one indicator is sufficing Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine)	ent) Salt Crus Salt Crus Biotic Cru Aquatic I Hydroger Oxidized	st (B11) ust (B12) nvertebra n Sulfide Rhizospł	ates (B13) Odor (C1)		Secondary Indicator Water Mark Sediment D Drift Deposi Drainage Pa Dry-Season	eposits (B2) (Riverine ts (B3) (Riverine) atterns (B10)
Remarks NON-HYDRIC 4 Hydrology Vetland Indicators Primary Indicators (Any one indicator is suffici Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine)	ent) Salt Crus Salt Crus Biotic Cru Aquatic I Hydroger Oxidized	st (B11) ust (B12) nvertebra n Sulfide Rhizosph e of Redu	ates (B13) Odor (C1) heres (C3) iced Iron (C		Secondary Indicator Water Mark Sediment D Drift Deposi Drainage Pa Dry-Season	s (B1) (Riverine) eposits (B2) (Riverine ts (B3) (Riverine) atterns (B10) Water Table (C2) Surface (C7)
Remarks NON-HYDRIC 4 Hydrology Wetland Indicators Primary Indicators (Any one indicator is sufficing Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)	ent) ent) Salt Crus Biotic Cru Aquatic I Aquatic I Hydroger Oxidized Presence Recent Ir	st (B11) ust (B12) nvertebra n Sulfide Rhizosph e of Redu	ates (B13) Odor (C1) heres (C3) iced Iron (C ction in		Secondary Indicator Water Mark Drift Deposi Drift Deposi Dry-Season Thin Muck S Crayfish Bu Saturation A	s (B1) (Riverine) eposits (B2) (Riverine) ts (B3) (Riverine) atterns (B10) Water Table (C2) Surface (C7) rrows (C8) Asible-on
Remarks NON-HYDRIC 4 Hydrology Vetland Indicators Primary Indicators (Any one indicator is sufficing Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on	ent) Salt Crus Salt Crus Aquatic I Aquatic I Aydroger Oxidized Presence Recent Ir Plowed S	t (B11) ust (B12) nvertebra n Sulfide Rhizospl of Redu on Reduc Soils (C6)	ates (B13) Odor (C1) heres (C3) iced Iron (C ction in		Secondary Indicator Water Mark Sediment D Drift Deposi Drainage Pa Dry-Season Thin Muck S Crayfish Bu Saturation V Aerial Imag	s (B1) (Riverine) eposits (B2) (Riverine) its (B3) (Riverine) atterns (B10) Water Table (C2) Surface (C7) rrows (C8) Asible-on ery (C9)
Remarks NON-HYDRIC 4 Hydrology Vetland Indicators Primary Indicators (Any one indicator is sufficing Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)	ent) Salt Crus Salt Crus Aquatic I Aquatic I Aydroger Oxidized Presence Recent Ir Plowed S	t (B11) ust (B12) nvertebra n Sulfide Rhizospl of Redu on Reduc Soils (C6)	ates (B13) Odor (C1) heres (C3) iced Iron (C ction in		Secondary Indicator Water Mark Sediment D Drift Deposi Drainage Pa Dry-Season Thin Muck S Crayfish Bu Saturation V Aerial Imag Shallow Aqu	s (B1) (Riverine) eposits (B2) (Riverine) ts (B3) (Riverine) atterns (B10) Water Table (C2) Surface (C7) rrows (C8) Asible-on ery (C9) uitard (D3)
Remarks WON-HYDRIC 4 Hydrology Vetland Indicators Primary Indicators (Any one indicator is sufficing Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	ent) Salt Crus Salt Crus Aquatic I Aquatic I Aydroger Oxidized Presence Recent Ir Plowed S	t (B11) ust (B12) nvertebra n Sulfide Rhizospl of Redu on Reduc Soils (C6)	ates (B13) Odor (C1) heres (C3) iced Iron (C ction in		Secondary Indicator Water Mark Sediment D Drift Deposi Drainage Pa Dry-Season Thin Muck S Crayfish Bu Saturation V Aerial Imag	s (B1) (Riverine) eposits (B2) (Riverine) ts (B3) (Riverine) atterns (B10) Water Table (C2) Surface (C7) rrows (C8) Asible-on ery (C9) uitard (D3)
Remarks WON-HYDRIC 4 Hydrology Wetland Indicators Primary Indicators (Any one indicator is sufficing Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) ield Observations	ent) Salt Crus Salt Crus Aquatic I Aquatic I Aquatic I Oxidized Oxidized Presence Recent Ir Plowed S Other (Ex	et (B11) ust (B12) nvertebra n Sulfide Rhizospl cof Redu on Reduc Soils (C6) collain in F	ates (B13) Odor (C1) heres (C3) iced Iron (C ction in	4)	Secondary Indicator Water Mark Sediment D Drift Deposi Drainage Pa Dry-Season Thin Muck S Crayfish Bu Saturation V Aerial Imag Shallow Aqu FAC-Netura	s (B1) (Riverine) eposits (B2) (Riverine) its (B3) (Riverine) atterns (B10) Water Table (C2) Surface (C7) rrows (C8) Asible-on lery (C9) litard (D3) I Test (D5)
Remarks WON-HYDRIC 4 Hydrology Wetland Indicators Primary Indicators (Any one indicator is suffici Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) ield Observations urface Water Present? Yes No <u>//</u>	ent) ent) Salt Crus Biotic Cru Aquatic I Aquatic I Hydroger Oxidized Presence Recent Ir Plowed S Other (Ex	et (B11) ust (B12) nvertebra n Sulfide Rhizosph of Redu on Reduc Soils (C6) cplain in F	ates (B13) Odor (C1) heres (C3) iced Iron (C ction in	4)	Secondary Indicator Water Mark Sediment D Drift Deposi Drainage Pa Dry-Season Thin Muck S Crayfish Bu Saturation V Aerial Imag Shallow Aqu	s (B1) (Riverine) eposits (B2) (Riverine) its (B3) (Riverine) atterns (B10) Water Table (C2) Water Table (C2) Surface (C7) rrows (C8) Asible on lery (C9) uitard (D3) I Test (D5)
Remarks WON-HYDRIC 4 Hydrology Vetland Indicators Primary Indicators (Any one indicator is sufficing Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) ield Observations	ent) Salt Crus Salt Crus Aquatic I Aquatic I Aquatic I Oxidized Oxidized Presence Recent Ir Plowed S Other (Ex	et (B11) ust (B12) nvertebra n Sulfide Rhizospl of Reduc on Reduc Soils (C6) cplain in F	ates (B13) Odor (C1) heres (C3) iced Iron (C ction in ) Remarks)	4)	Secondary Indicator Water Mark Bediment D Drift Deposi Drainage Pa Dry-Season Thin Muck S Crayfish Bu Saturation A Aerial Imag Shallow Aqu FAC-Netura	s (B1) (Riverine) eposits (B2) (Riverine) its (B3) (Riverine) atterns (B10) Water Table (C2) Surface (C7) rrows (C8) Asible-on lery (C9) litard (D3) I Test (D5)

North State Resources				Habitat Type (SUCTOSULING
Wetland Determination Data Form -	Arid West Re	gion		Habitat Type GRASSLAND Wetland Type EPHEMERAL DRAINAGE
Project/Site:Sisk Dam Corrective Action Project		City/Coun	tv: Merce	"
Applicant/Owner: U.S. Bureau of Reclamation			.y	State: <u>CA</u> Sampling Point: <u>43</u>
Investigator(s):				
Landform (hillslope, terrace, etc.) DRAINTGE	E	Local re	lief (concave	e, convex, none) Concrue Slope % 5-8
Subregion (LRR)	5	Soil Map Unit	Name: BA	LVAR LOAM 2-8% SLOPE
Are climatic/hydrologic conditions on the site typical	for this time of yea	AR YES	(If no, expla	in in remarks.)
Are vegetation N, soil N, or hydrology N				
Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u>				
Summary of Findings (Attach site map	showing sampling	point location	ns. transects	important features, etc.)
Hydrophytic vegetation? <u>NO</u> Hydric soil? <u>NO</u>	Wetland hydro	blogy? YES	≥ Is sample	d area a wetland? NO Other waters?
USACE Jurisdiction			14	
Adjacent to Waters Tributary to Waters	_ Isolated (with in	terstate comr	nerce)	_ isolated (non junsdictional)
Evaluation of features designate	d "Other Wa	aters of t	the Unit	ed States" ~2' WIDE
ndicators: Defined bed and bank X	Scour X Ord	linary High W	ater Mark M	apped X - NY WIDE
Feature Designation: Perennial Intermittent Natural Drainage X Artifi	Ephemeral .	X Blue-lin Navigable	ne on USGS Water	5 Quad
Demesilar				1
INALL & FRHEMEDAL I	DRAINAGE.	VEGE	TAIRD	W/ ANNOAL GRASSIES
MAKING AHIDM DIFFIC	ULT IN S	ISCERN	, BUT	A WELL DEFINED BED
The A Officer & Prince				
+ BANK BISECTS THIS S	FECTION O	FILLE	STUDY	AREASEE PHOID.
+ BANK BISECTS THIS S	bection o	FILLE	STUDY	Dominance Test Worksheet
+ BANK BISECTS THIS S Vegetation Tree Stratum (use scientific names)	Absoluti	FILLE	STUDY t Indicator	Dominance Test Worksheet Number of dominant species
+ BANK BISECTS THIS S Vegetation	Absoluti	F 721E e Dominan	STUDY t Indicator	Dominance Test Worksheet
BANK BISECTS THIS S      /egetation     ree Stratum (use scientific names)	Absoluti	F THE e Dominani r <u>Species?</u>	Status	APEA:       - SEE       FITOIO.         Dominance Test Worksheet       Number of dominant species       O         Number of dominant species       O       (A)         Total number of dominant species       3
BANK BISF2CT3 THIS S      Vegetation      Tree Stratum (use scientific names)	Absolute <u>% Cove</u>	F THE e Dominani r <u>Species?</u>	Status	APEA:       SEE       FITOIO,         Dominance Test Worksheet       Number of dominant species       O         that are OBL, FACW, or FAC:       O       (A)
Vegetation       ree Stratum (use scientific names)	Absoluti <u>% Cove</u> 	F THE Dominani <u>Species?</u>	Status	APEA:       - SEE       FITOIO.         Dominance Test Worksheet       Number of dominant species       0         Number of dominant species       0       (A)         Total number of dominant species       3       (B)         Percent of dominant species that       0       (A)
Vegetation       ree Stratum (use scientific names)	Absolute <u>% Cove</u>	F THE Dominani <u>Species?</u>	Status	APEA:       - SEE       FITOIO.         Dominance Test Worksheet       Number of dominant species       0         Number of dominant species       0       (A)         Total number of dominant species       3       (B)
BANK BISF2CTS THIS S      Vegetation      Tree Stratum (use scientific names)        50%= 20%= Tota      tapling/Shrub Stratum (use scientific names)	Absoluti <u>% Cove</u> al Cover: <u>% Cove</u>	F THE Dominan <u>Species?</u> <u>Species?</u>	Status	APEA:       - SEE       PHOID:         Dominance Test Worksheet       Number of dominant species       O         Number of dominant species       O       (A)         Total number of dominant species       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       O       /3         Percent of dominant species that are OBL, FACW, or FAC:       O       /3         Prevalence Index Worksheet       O       /3       (AB)
BANK BISF2CTS THIS S      /egetation     ree Stratum (use scientific names)        50%= 20%= Tota     apling/Shrub Stratum (use scientific names)	Absoluti <u>% Cove</u> al Cover: <u>% Cove</u>	E Dominani <u>Species?</u> <u>Species?</u> <u>Species?</u> <u>Species?</u>	Status	APEA:       - SEE       PHOID:         Dominance Test Worksheet       Number of dominant species       O         Number of dominant species       O       (A)         Total number of dominant species       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:
BANK BISF2CTS THIS S      /egetation     ree Stratum (use scientific names)        50%= 20%= Tota     apling/Shrub Stratum (use scientific names)	Absoluti <u>% Cove</u> al Cover: <u>% Cove</u>	E Dominani <u>Species?</u> <u>Species?</u> <u>Species?</u> <u>Species?</u>	Status	APEA: - SEE       PHOID:         Dominance Test Worksheet       Number of dominant species         Number of dominant species $O$ (A)         Total number of dominant species $O$ (A)         Total number of dominant species $O$ (A)         Percent of dominant species that are OBL, FACW, or FAC: $O$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $O$ (A)         Prevalence Index Worksheet $O$ (A)         Total % Cover of:       Multiply by         OBL Species $x 1 =$
BAWK BISF2CTS THIS S      /egetation     ree Stratum (use scientific names)      50%= 20%= Tota     apling/Shrub Stratum (use scientific names)	Absoluti % Cove	E Dominani <u>Species?</u> <u>Species?</u> <u>Species?</u> <u>Species?</u>	Status	APEA: - SEE       PHOIDS         Dominance Test Worksheet       Number of dominant species         Number of dominant species       O         that are OBL, FACW, or FAC:       O         Total number of dominant species       3         across all strata:
* BANK       BISF2CTS       THIS       S         /egetation       ree Stratum (use scientific names)	Absoluti <u>% Cove</u> al Cover: <u>% Cove</u>	F THE Dominani <u>Species?</u> <u>Species?</u> <u>Species?</u>	Status	APEA: - SEE       PHOID:         Dominance Test Worksheet       Number of dominant species         Number of dominant species $O$ APEA: - SEE $O$ Number of dominant species $O$ Total number of dominant species $O$ across all strata: $S$ Percent of dominant species that are OBL, FACW, or FAC: $O$ Prevalence Index Worksheet $O$ Total % Cover of:       Multiply by         OBL Species $x1 =$ FACW Species $x2 =$ FAC Species $x3 =$
BAWK BISF2CTS THIS S      /egetation ree Stratum (use scientific names)      50%= 20%= Tota apling/Shrub Stratum (use scientific names)      50%= 20%= Tota erb Stratum (use scientific names)	Absoluti <u>% Cove</u> al Cover: al Cover: al Cover: % Cover % Cover	Dominani <u>Species?</u> <u>Species?</u> <u>Species?</u> <u>Species?</u> <u>Species?</u> <u>Species?</u> <u>Species?</u>	Status Status	APEA: - SEE       PHOID:         Dominance Test Worksheet       Number of dominant species         Number of dominant species $O$ (A)         Total number of dominant species $O$ (A)         Total number of dominant species $O$ (A)         Percent of dominant species that are OBL, FACW, or FAC: $O$ (A)         Percent of dominant species that are OBL, FACW, or FAC: $O$ (A)         Prevalence Index Worksheet $O$ (AB)         Prevalence Index Worksheet       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$
* BANK       BISF2CTS       THIS       S         /egetation       ree Stratum (use scientific names)	Absoluti % Cove	F THE Dominant <u>Species?</u> <u>Species?</u> <u>Species?</u> <u>Species?</u>	Status Status Status Status	APEA: - GEE THOID.         Dominance Test Worksheet         Number of dominant species         that are OBL, FACW, or FAC:         O         Total number of dominant species         across all strata:         B         Percent of dominant species that         are OBL, FACW, or FAC:         O/Z         (AB)         Prevalence Index Worksheet         Total % Cover of:         Multiply by         OBL Species         X1 =         FACW Species         X2 =         FAC Species         X3 =         FACU Species         X4 =         UPL Species
* BAWK       BISF2CTS       TDIS       S         /egetation       ree Stratum (use scientific names)	Absoluti % Cove al Cover: % Cover % Cover % Cover % Cover % Cover % Cover % Cover	E THE Dominant <u>Species?</u> <u>Species?</u> <u>Species?</u> <u>Species?</u> <u>Y</u>	Status Status Status UPL UPL	APEA: $- \subseteq E$ $FHOIS$ Dominance Test Worksheet       Number of dominant species $O$ Number of dominant species $O$ $(A)$ Total number of dominant species $O$ $(A)$ Total number of dominant species $O$ $(A)$ Percent of dominant species that are OBL, FACW, or FAC: $O/Z$ $(AB)$ Percent of dominant species that are OBL, FACW, or FAC: $O/Z$ $(AB)$ Prevalence Index Worksheet $O/Z$ $(AB)$ OBL Species $x1 =$ $x1 =$ FACW Species $x2 =$ $x2 =$ FAC Species $x3 =$ $x4 =$ UPL Species $x5 =$ $(A)$ Column Totals $(A)$ $(B)$
* BANK       BISF2CTS       THIS       S         /egetation       ree Stratum (use scientific names)	Absoluti % Cove al Cover: % Cover % Cover % Cover % Cover % Cover % Cover % Cover	F THE Dominant Species? Species? Species? Species? Y Y	Status Status Status Status	APEA: - GEE PHOID:         Dominance Test Worksheet         Number of dominant species         that are OBL, FACW, or FAC:         O         Total number of dominant species         across all strata:         Percent of dominant species that         are OBL, FACW, or FAC:         VB         Percent of dominant species that         are OBL, FACW, or FAC:         VB         Prevalence Index Worksheet         Total % Cover of:         Multiply by         OBL Species         x1=         FACW Species         x2=         FAC Species         x4=         UPL Species
* BANK BISF2CTS THIS S         /egetation         ree Stratum (use scientific names)         50%=	Absoluti % Cove al Cover: % Cover % Cover % Cover % Cover % Cover % Cover % Cover % Cover % Cover	F THE Dominant Species? Species? Species? Species? Y Y	Status Status Status UPC UPC	APEA: $- \subseteq E$ $FHOIS$ .         Dominance Test Worksheet       Number of dominant species $O$ Number of dominant species $O$ $(A)$ Total number of dominant species $O$ $(A)$ Total number of dominant species $O$ $(A)$ Percent of dominant species that are OBL, FACW, or FAC: $O/Z$ $(AB)$ Percent of dominant species that are OBL, FACW, or FAC: $O/Z$ $(AB)$ Prevalence Index Worksheet $O/Z$ $(AB)$ Total % Cover of:       Multiply by $OBL$ Species $x1 =$ FACW Species $x2 =$ $x3 =$ $FACU$ Species $x4 =$ UPL Species $x5 =$ $(A)$ $(B)$ Prevalance Index = $B/A =$ $(A)$ $(B)$
* BANK BISF2CTS THIS S         /egetation         ree Stratum (use scientific names)         50%=	Absoluti % Cove al Cover: % Cover % Cover % Cover 40 40 40	F THE Dominant Species? Species? Species? Species? Y Y Y	Status Status Status Status UPL UPL	APEA: $- \subseteq E$ $THOIO_{2}$ Dominance Test Worksheet       Number of dominant species $O$ (A)         Total number of dominant species $O$ (A)         Percent of dominant species that are OBL, FACW, or FAC: $O/Z$ (AB)         Prevalence Index Worksheet $O/Z$ (AB)         Prevalence Index Worksheet       Multiply by       OBL Species         Total % Cover of:       Multiply by       Multiply by         OBL Species $x1 =$ $x2 =$ FACW Species $x2 =$ $x3 =$ FACU Species $x4 =$ $uPL$ Species         VPL Species $x5 =$ $C$ Column Totals $(A)$ $(B)$ Prevalance Index = B/A = $(A)$ $(B)$ Prevalance Index = B/A = $(A)$ $(B)$
* BANK BISF2CTS THIS S         /egetation         ree Stratum (use scientific names)         50%=	Absoluti % Cove al Cover: % Cover % Cover % Cover % Cover % Cover % Cover	F THE Dominant Species? Species? Species? Y Y Y	Status Status Status Status UPL UPL	APEA: $- \subseteq E$ $THOIG$ .         Dominance Test Worksheet       Number of dominant species $O$ (A)         Total number of dominant species $O$ (A)         Total number of dominant species $O$ (A)         Total number of dominant species $O$ (A)         Percent of dominant species that are OBL, FACW, or FAC: $O$ $S$ Percent of dominant species that are OBL, FACW, or FAC: $O$ $S$ Prevalence Index Worksheet $O$ $S$ Total % Cover of:       Multiply by $O$ OBL Species $x 1 =$ $x 2 =$ FACW Species $x 2 =$ $x =$ FAC Species $x 3 =$ $x =$ UPL Species $x 5 =$ $(A)$ Outmon Totals $(A)$ $(B)$ Prevalance Index = B/A = $(A)$ $(B)$ Prevalence Index = S0% $Prevalence Index is < 3.0^1$
* BANK BISF2CTS THIS S         /egetation         ree Stratum (use scientific names)         50%=	Absoluti % Cove al Cover: % Cover % Cover % Cover % Cover % Cover % Cover	F THE Dominant Species? Species? Species? Y Y Y	Status Status Status Status UPL UPL	APEA: $- \subseteq E$ PHOID:         Dominance Test Worksheet       Number of dominant species       O         Number of dominant species       O       (A)         Total number of dominant species $=$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $=$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $=$ $=$ Percent of dominant species that are OBL, FACW, or FAC: $=$ $=$ Percent of dominant species that are OBL, FACW, or FAC: $=$ $=$ Percent of dominant species that are OBL, FACW, or FAC: $=$ $=$ OBL Species $=$ $=$ $=$ OBL Species $=$ $=$ $=$ FACW Species $=$ $=$ $=$ FACU Species $=$ $=$ $=$ FACU Species $=$ $=$ $=$ UPL Species $=$ $=$ $=$ Column Totals $=$ $=$ $=$ Prevalance Index = B/A = $=$ $=$ $=$ Hydrophytic Vegetation Indicators $=$ $=$ $=$ Mo
* BANK BISF2CTS THIS S         /egetation         ree Stratum (use scientific names)         50%=	Absoluti % Cove al Cover: % Cover % Cover % Cover % Cover % Cover % Cover % Cover	E THE Dominant Species?	Status Status Status UPL UPL	APEA: $- \subseteq E$ PHOID:         Dominance Test Worksheet       Number of dominant species       O         Number of dominant species       O       (A)         Total number of dominant species $=$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $=$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $=$ $=$ Percent of dominant species that are OBL, FACW, or FAC: $=$ $=$ Percent of dominant species that are OBL, FACW, or FAC: $=$ $=$ Percent of dominant species that are OBL, FACW, or FAC: $=$ $=$ OBL Species $=$ $=$ $=$ OBL Species $=$ $=$ $=$ FACW Species $=$ $=$ $=$ FACU Species $=$ $=$ $=$ FACU Species $=$ $=$ $=$ UPL Species $=$ $=$ $=$ Column Totals $=$ $=$ $=$ Prevalance Index = B/A = $=$ $=$ $=$ Hydrophytic Vegetation Indicators $=$ $=$ $=$ $=$ $=$
	Absoluti % Cove al Cover: % Cover % Cover % Cover % Cover % Cover % Cover % Cover	E THE Dominant Species?	Status Status Status UPL UPL	APEA: $-GEE$ PHOID:         Dominance Test Worksheet       Number of dominant species       O         Number of dominant species       O       (A)         Total number of dominant species $O$ (A)         Total number of dominant species $O$ (A)         Percent of dominant species that are OBL, FACW, or FAC: $O$ $O$ Percent of dominant species that are OBL, FACW, or FAC: $O$ $Z$ Prevalence Index Worksheet $O$ $Z$ Total % Cover of:       Multiply by $O$ OBL Species $x1 =$ $X1 =$ FACW Species $x2 =$ $X3 =$ FACU Species $x4 =$ $X4 =$ UPL Species $x5 =$ $X5 =$ Column Totals $(A)$ $(B)$ Prevalance Index = B/A = $(A)$ $(B)$ Prevalence Index is $\leq 3.0^1$ $Morphological Adaptations^1 (provide supporting data in Remarks or on a separate sheet)       Problematic Hydrophytic Vegetation (Explain)         "Indicators of hydric soil and wetland hydrology must       Norphology must $
+ BANK       BISF2CTS       THIS       S         Vegetation       Interview (use scientific names)       Interview (use scientific names)         50%=       20%=       Tota         50%=       20%=       Tota	Absoluti % Cove al Cover: % Cover % Cover % Cover % Cover % Cover % Cover	F THE Dominant Species?	Status Status Status UPL UPL	APEA.       -GEE       PHOIG.         Dominance Test Worksheet       Number of dominant species       O         Number of dominant species       O       (A)         Total number of dominant species       3       (B)         Percent of dominant species that are OBL, FACW, or FAC:       O/Z       (AB)         Percent of dominant species that are OBL, FACW, or FAC:       O/Z       (AB)         Prevalence Index Worksheet       Total % Cover of:       Multiply by         OBL Species       x1 =

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		indicator o	r confirm t	he absence of indicators.
Color (moist)	%	Type <sup>1</sup>		Texture <u>Remarks</u> SANDY LOTM
ali LRRs, unless oth Sandy G Sandy F Stripped Loamy f Loamy G Depleted Redox D	nerwise n Gleyed Ma Redox (S5 I Matrix (S Mucky Min Gleyed Ma d Matrix (I Dark Surfa	oted) atrix (S4) 56) neral (F1) atrix (F2) F3) ace (F6)		ng RC = Root Channel M = Matrix ndicators for Problematic Hydric Soils <sup>3</sup> 1 cm Muck (A9) (LRR C) 2 cm Muck (A10) (LRR B) Reduced Vetric (F18) Red Parent Materials (TF2) Vegetated Sand/Gravel Bars Other (Explain in Remarks) <sup>3</sup> Indicators of hydrophytic vegetation a
Vernal P	ools (F9)			wetland hydrology must be present.
cient)				Secondary Indicators (2 or more require
Salt Crus	f (R11)			Water Marks (B1) (Rivenne)
				Sediment Deposits (B2) (Riveni
	••••	tes (B13)		Drift Deposits (B3) (Riverine)
		• •		Drainage Patterns (B10)
				Dry-Season Water Table (C2)
	-		45	Thin Muck Surface (C7)
Recent In Plowed S	on Reduc	ction in	•7	Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
	•			Shallow Aquitard (D3) FAC-Netural Test (D5)
Outor (LA				
Depth (inches)			Wetland H	
			Wetland H	FAC-Netural Test (D5)
Depth (inches)			Wetland H	FAC-Netural Test (D5)
	Redox Features         Color (moist)         Color (moist)         A = Reduced Matrix         all LRRs, unless off         Sandy G         Sandy G         Sandy F         Loamy N         Loamy N         Loamy N         Loamy N         Depleted         Redox D         Depleted         Redox D         Vernal P         CALCY         Salt Crus         Biotic Crus         Biotic Crus         Oxidized         Presence         Recent In         Plowed S	Redox Features         Color (moist)       %         All Color (moist)       %         Sandy Redox (Station	Redox Features         Color (moist)       %       Type1         Image: Color (moist)       %       Sandy Redox (S5)         Image: Color (S5)       Sandy Redox (S5)       %         Image: Color (F2)       %       Color (F2)         Image: Color (F3)       %       %         Image: Color (S5)       %       %         Image: Color (S6)       %	Color (moist)       %       Type1       Loc2         Image: Color (moist)       %       Type1       Loc2         Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)         Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)         Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)         Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)         Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)         Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)         Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)       Image: Color (moist)

North State Resources				Habitat Type GRASSLAND
Wetland Determination Data Form - Arid	West Reg	gion		Wetland Type VI LAND
Project/Site:Sisk Dam Corrective Action Project			tv: Merceo	Sampling Date: 9/18/09
Applicant/Owner:U.S. Bureau of Reclamation		_ 010/0001		State: <u>CA</u> Sampling Point: <u>44</u>
Investigator(s):J. Colescott				
Landform (hillslope, terrace, etc.)		Local re	lief (concave	convex, none) CONCAVE Slope % 0
Subregion (LRR)	S	oil Map Unit	Name: X	profluvents, Ext. gravelly
Are climatic/hydrologic conditions on the site typical for this				0
Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u> signi	ficantly distu	irbed? Are i	normal circur	nstances present? <u>4BS</u>
Are vegetation, soil, or hydrology nature				
Summary of Findings (Attach site map showin	g sampling r	point location	ns, transects	important features, etc.)
Hydrophytic vegetation? 4F5 Hydric soil? No We	tland hydrol	ogy? NO	_ Is sample	d area a wetland? NO Other waters? NO
USACE Jurisdiction Adjacent to Waters Tributary to Waters Isola Explain:	ited (with inte	erstate com	merce)	Isolated (non jurisdictional)
Evaluation of features designated "O Indicators: Defined bed and bank Scour Feature Designation: Perennial Intermittent Kour Natural Drainage Artificial Dra	Ordi	nary High W	ater Mark M	apped
Remarks MINOR DEPRESSIONS ALONG GIUDY AREA, SOLLS ARE JU HAVE NO INDICATORS OF LONG	e NAC Ery H	erow Hed, 1	HAUL	ROAD PORDON OF GRAVELLY LOAM BUT
Vegetation	Absolute	Dominan	t Indicator	Dominance Test Worksheet
Tree Stratum (use scientific names)	% Cover	Species?	Status	Number of dominant species that are OBL, FACW, or FAC:(A)
1	. <u></u>			
2				Total number of dominant species 3 (B)
50%= 20%= Total Cover				
Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	Percent of dominant species that 166 (AB)
2.	<u> </u>			Prevalence Index Worksheet
3				Total % Cover of:     Multiply by       OBL Species     x1 =
4				FACW Species x2=
50%= 20%= Total Cover	:			FAC Species x3 =
Herb Stratum (use scientific names)	% Cover	Species?	×	FACU Species x4 =
1. Lepidium latifolium		YES	FACW	UPL Species x5 =
2 Vulpia brancides		<u></u>	Fre	Column Totals (A) (B)
3. Francis d'andros		7	will	Prevalance Index = B/A =
4. Harden Teporinom	SUCCESSION AS	4	FAC	
5. Bromos hordeacous	<u></u>	<u> </u>	FACU	Hydrophytic Vegetation Indicators
7.				Prevalence Index is < 3.01
50%= <u>4</u> 5 20%= <u>18</u> Total Cover:	90		······································	Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet)
	% Cover	Species?	Status	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.
2				
50%= 20%= Total Cover:	··· <u></u> ··			Hydrophytic Vegetation?
% Bare Ground in Herb Stratum / 0 % Cover of Bio	tic Crust _	-		

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nches) Color (moist) %	Redox Features Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
-4 1040 3/3 100		-		-		ur Lotm
ypes: C = Concentration D = Depletion RM	= Reduced Matrix	2 <sub>L0</sub>	ocation: PL	. = Pore Li	ning RC = R	oot Channel M = Matrix
ydric Soil Indicators: (Applicable to a	all LRRs, unless oth	erwise no	oted)		Indicators fo	r Problematic Hydric Soils <sup>3</sup>
Histosol (A1)	Sandy C	Sleyed Ma	trix (S4)		10	m Muck (A9) (LRR C)
Histic Epipedon (A2)	Sandy F	Redox (S5	)		20	cm Muck (A10) (LRR B)
Black Histic (A3)	Stripped	Matrix (S	6)		Re	educed Vetric (F18)
Hydrogen Sulfide (A4)	Loamy N	Aucky Min	eral (F1)		Re	ed Parent Materials (TF2)
Stratified Layers (AG) (LRR C)	Loamy (	Sleyed Ma	atrix (F2)		Ve	getated Sand/Gravel Bars
1 cm Muck (A9) (LRR D)	Depleted	d Matrix (F	-3)		Ot	her (Explain in Remarks)
Depleted Below Dark Surface (A11)	Redox D	ark Surfa	ce (F6)			
Thick Dark Surface (A12)	Depleted	Dark Su	rface (F7)			s of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Redox D	epression	ns (F8)		wetland h	ydrology must be present.
	Vernal P	ools (F9)				
	<u> </u>					
Restrictive Layer (if present): Type:	<u>ــــــــــــــــــــــــــــــــــــ</u>	Depth (Inc	hes)	Hyd	ric Soil? 🚺	
S NO INDICATION OF		ON2 RATION			400. TON.	IN THAT 4", TH
S NO INDICATION OF Hydrology Vetland Indicators	LONG DO				700.	
Hydrology Netland Indicators Primary Indicators (Any one indicator is sufficient	cient)	rai)on			Secondary	Indicators (2 or more required)
Hydrology Hydrology Vetland Indicators Primary Indicators (Any one indicator is suffice Surface Water (A1)	cient)	et (B11)			<u>Secondary</u>	Indicators (2 or more required) ater Marks (B1) (Riverine)
IS       NO       INDICATION       OF         Hydrology         Vetland Indicators         Primary Indicators (Any one indicator is sufficient on the indicator of the sufficient on the indicator of the sufficient on the indicator of the sufficient on the	cient) Salt Crus	et )) ON t (B11) ust (B12)			Secondary Wa	Indicators (2 or more required) ater Marks (B1) (Riverine) diment Deposits (B2) (Riverine)
IS       NO       INDICATION       OF         Hydrology         Netland Indicators         Primary Indicators (Any one indicator is sufficient on the second on	cient) Salt Crus Biotic Cru	et (B11) ust (B12) nvertebrat	es (B13)		<u>Secondary</u> Wa Se Dri	Indicators (2 or more required) ater Marks (B1) (Riverine) diment Deposits (B2) (Riverine) ft Deposits (B3) (Riverine)
IS       NO       INDICATION       OF         Hydrology         Wetland Indicators       Primary Indicators (Any one indicator is suffix	cient) Salt Crus Biotic Cru Aquatic In Hydroger	et (B11) ust (B12) nvertebrat	es (B13)		Secondary Wa Se Dri Dra	Indicators (2 or more required) ater Marks (B1) (Riverine) diment Deposits (B2) (Riverine) ft Deposits (B3) (Riverine) ainage Patterns (B10)
IS       NO       INDICATION       OF         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is suffice	cient) Salt Crus Biotic Cru Aquatic Ia Hydroger Oxidized	et (B11) ust (B12) nvertebrat n Sulfide C Rhizosph	ees (B13) Ddor (C1) eres (C3)		Secondary Wa Se Dri Dra Dra	Indicators (2 or more required) ater Marks (B1) (Riverine) diment Deposits (B2) (Riverine) ft Deposits (B3) (Riverine) ainage Patterns (B10) <i>y</i> -Season Water Table (C2)
Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is suffice	cient) Salt Crus Biotic Cru Aquatic In Hydroger Oxidized Presence	t (B11) ust (B12) nvertebrat n Sulfide C Rhizosph of Reduc	es (B13) Ddor (C1) eres (C3) æd Iron (C		Secondary Wa Se Dri Dri Drj Thi	Indicators (2 or more required) ater Marks (B1) (Riverine) diment Deposits (B2) (Riverine) ft Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7)
Hydrology         Additional and the formation of t	cient) Salt Crus Biotic Cru Aquatic In Aydroger Oxidized Presence Recent In	t (B11) ust (B12) nvertebrat Sulfide C Rhizosph of Reduct on Reduct	es (B13) Ddor (C1) eres (C3) æd Iron (C		Secondary Wa Se Dri Dri Dry Thi Cra	Indicators (2 or more required) ater Marks (B1) (Riverine) diment Deposits (B2) (Riverine) ft Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8)
IS       NO       INDICATION       OF         Hydrology         Wetland Indicators       Primary Indicators (Any one indicator is suffix	cient) Salt Crus Biotic Crus Aquatic In Aquatic In Oxidized Presence Recent In Plowed S	t (B11) ust (B12) nvertebrat Sulfide C Rhizosph of Reduc Soils (C6)	tes (B13) Ddor (C1) eres (C3) xed Iron (C tion in		Secondary Wa Wa Dri Dri Dri Thi Cra	Indicators (2 or more required) ater Marks (B1) (Riverine) diment Deposits (B2) (Riverine) ft Deposits (B3) (Riverine) ainage Patterns (B10) /-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) turation Visible on
IS       NO       INDICATION OF         Hydrology         Vetland Indicators         Primary Indicators (Any one indicator is sufficient on the indicator is sufficient on the indicator is sufficient on the indicator of the inding of the indicator of the indicator of the	cient) Salt Crus Biotic Cru Aquatic In Aydroger Oxidized Presence Recent In Plowed S Other (Ex	t (B11) ust (B12) nvertebrat Sulfide C Rhizosph of Reduc Soils (C6)	tes (B13) Ddor (C1) eres (C3) xed Iron (C tion in		Secondary Wa Se Dri Dri Dri Dri Thi Sa Sa Ae	Indicators (2 or more required) ater Marks (B1) (Riverine) diment Deposits (B2) (Riverine) ft Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) turation Visible on rial Imagery (C9)
S       NO       INDICATION       OF         Hydrology         Vetland Indicators       Indicators         Immary Indicators (Any one indicator is sufficient on the indicator of the indicator o	cient) Salt Crus Biotic Cru Aquatic In Aydroger Oxidized Presence Recent In Plowed S Other (Ex	t (B11) ust (B12) nvertebrat Sulfide C Rhizosph of Reduc Soils (C6)	tes (B13) Ddor (C1) eres (C3) xed Iron (C tion in		Secondary Secondary Secondary Secondary Secondary Dri Dri Dri Dri Dri Cri Ae Secondary	Indicators (2 or more required) ater Marks (B1) (Riverine) diment Deposits (B2) (Riverine) ft Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) turation Visible on rial Imagery (C9) allow Aquitard (D3)
IS       NO       INDICATION       OF         Hydrology         Wetland Indicators       Primary Indicators (Any one indicator is suffix	cient) Salt Crus Biotic Cru Aquatic In Aydroger Oxidized Presence Recent In Plowed S Other (Ex	t (B11) ust (B12) nvertebrat Sulfide C Rhizosph of Reduc Soils (C6)	tes (B13) Ddor (C1) eres (C3) xed Iron (C tion in		Secondary Secondary Secondary Secondary Secondary Dri Dri Dri Dri Dri Cri Ae Secondary	Indicators (2 or more required) ater Marks (B1) (Riverine) diment Deposits (B2) (Riverine) ft Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) turation Visible on rial Imagery (C9)
IS       NO       INDICATION       OF         Hydrology         Vetland Indicators       Primary Indicators (Any one indicator is suffix	cient) Salt Crus Biotic Crus Aquatic In Aquatic In Aquatic In Oxidized Oxidized Presence Recent In Plowed S Other (Ex	t (B11) ust (B12) nvertebrat n Sulfide C Rhizosph of Reduc on Reduc Soils (C6) plain in R	tes (B13) Ddor (C1) eres (C3) xed Iron (C tion in	×4)	Secondary Wa Se Dri Dri Dri Thi Cra Sa Sa Sh FA	Indicators (2 or more required) ater Marks (B1) (Riverine) diment Deposits (B2) (Riverine) ft Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) turation Visible on rial Imagery (C9) allow Aquitard (D3) C-Netural Test (D5)
IS       NO       INDICATION       OF         Hydrology         Wetland Indicators       Primary Indicators (Any one indicator is suffix	cient)Salt CrusBiotic CruBiotic CruAquatic InOxidizedPresenceRecent InPlowed SOther (Ex	t (B11) ust (B12) nvertebrat n Sulfide C Rhizosph of Reduc on Reduc Soils (C6) plain in R	tes (B13) Ddor (C1) eres (C3) xed Iron (C tion in	×4)	Secondary Secondary Secondary Secondary Secondary Dri Dri Dri Dri Dri Cri Ae Secondary	Indicators (2 or more required) ater Marks (B1) (Riverine) diment Deposits (B2) (Riverine) ft Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) turation Visible on rial Imagery (C9) allow Aquitard (D3) C-Netural Test (D5)
S       NO       INDICATION       OF         Hydrology         Vetland Indicators         Primary Indicators (Any one indicator is suffix	cient) Salt Crus Biotic Cru Aquatic In Oxidized Oxidized Presence Recent In Plowed S Other (Ex	t (B11) ust (B12) nvertebrat n Sulfide C Rhizosph of Reduc on Reduc Soils (C6) plain in R	tes (B13) Ddor (C1) eres (C3) xed Iron (C tion in emarks)	X4) Wetland	Secondary Secondary Secondary Wa Secondary Uta Secondary Dri Dri Dri Dri Dri Dri Cra Ae Ae Ae FA	Indicators (2 or more required) ater Marks (B1) (Riverine) diment Deposits (B2) (Riverine) ft Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) turation Visible on rial Imagery (C9) allow Aquitard (D3) C-Netural Test (D5)
IS       NO       INDICATION       OF         Hydrology         Wetland Indicators       Primary Indicators (Any one indicator is suffix	cient) Salt Crus Biotic Cru Aquatic In Aydroger Oxidized Presence Recent In Plowed S Other (Ex	t (B11) ust (B12) nvertebrat Sulfide C Rhizosph of Reduc Soils (C6)	tes (B13) Ddor (C1) eres (C3) xed Iron (C tion in		Secondary Secondary Secondary Secondary Secondary Dri Dri Dri Dri Dri Cri Ae Secondary	Indicators (2 or more required) ater Marks (B1) (Riverine) diment Deposits (B2) (Riverine) ft Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) turation Visible on rial Imagery (C9) allow Aquitard (D3)
IS       NO       INDICATION       OF         Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is suffix	cient)  Salt Crus Biotic Cru Aquatic In Oxidized Presence Recent In Plowed S Other (Ex Depth (inches)	t (B11) ust (B12) nvertebrat n Sulfide C Rhizosph of Reduc on Reduc Soils (C6) plain in R	tes (B13) Ddor (C1) eres (C3) xed Iron (C tion in emarks)	×4)	Secondary Secondary Secondary Wa Secondary Uta Secondary Dri Dri Dri Dri Dri Dri Cra Ae Ae Ae FA	Indicators (2 or more required ater Marks (B1) (Riverine) diment Deposits (B2) (Riverine) ft Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) turation Visible on rial Imagery (C9) allow Aquitard (D3) C-Netural Test (D5)

ľ	North State Resources Wetland Determination Data Form - Arid V	Vest Reg	jion		Habitat Type DAM SERVICE AREA Wetland Type <u>UPLAND</u>
A	Project/Site: <u>Sisk Dam Corrective Action Project</u> pplicant/Owner: <u>U.S. Bureau of Reclamation</u> vestigator(s): <u>J. Colescott</u>		_ City/Count	y: <u>Merced</u>	County Sampling Date: 9/18/09 State: CA Sampling Point: 45
L S A A	andform (hillslope, terrace, etc.) DEPRESSION	time of year	bil Map Unit Map Unit M ? <u>YES</u> ( rbed? Are n	Name: <u> </u>	n in remarks.) nstances present? <u>YES</u>
Н	ydrophytic vegetation? <u>NO</u> Hydric soil? <u>NO</u> Wet				
Ad	djacent to Waters Tributary to Waters Isolate splain:	ed (with inte	erstate comm	nerce)	Isolated (non jurisdictional)
Inc	valuation of features designated "Ot           dicators:         Defined bed and bank           sature Designation:         Perennial           Natural Drainage         Artificial Drain	Ordir phemeral	hary High Wa Blue-lin	ater Mark Mark Mark Mark Mark	apped
R	EMARKS SMALL SHALLOW DE 10 MEET SOILS OR HYDR	ARESS 20100	y par	SOME H AMEIES	HDROPHYTIC VEC. FAILS 25.
	egetation æ Stratum (use scientific names)	Absolute % Cover		Indicator Status	Dominance Test Worksheet         Number of dominant species         that are OBL, FACW, or FAC:
3.	50%= 20%= Total Cover: pling/Shrub,Stratum (use scientific names)	% Cover	Species?	Status	Percent of dominant species that(B) are OBL, FACW, or FAC:(AB)
1	Baccharis filularis	40		UPL	Prevalence Index Worksheet         Total % Cover of:       Multiply by         OBL Species       x1 =
Her 1	50%= <u>20</u> 20%= <u>8</u> Total Cover: to Stratum (use scientific names) <u>Lepidium latifaliom</u>	% Cover 40	Species? <u>765</u>	Status FACW	FACW Species $\underline{40}$ $x_2 =$ $\underline{80}$ FAC Species $x_3 =$ FACU Species $x_4 =$ UPL Species $\underline{40}$ $x_5 =$
3					Column Totals $\underline{BD}$ (A) $\underline{280}$ (B) $\underline{3.5}$ Prevalance Index = B/A = $\underline{3.5}$ $\underline{89}$ $\underline{580}$ Hydrophytic Vegetation Indicators $\underline{340}$
Woo		4D % Cover	Species?	Status	Dominance Text is >50% Prevalence Index is ≤ 3.01 Morphological Adaptations <sup>1</sup> (provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) Indicators of hydric soil and wetland hydrology must
2. <u>-</u> 5	0%= 20%= Total Cover: are Ground in Herb Stratum <u>60</u> % Cover of Biot		· ·		Hydrophytic Vegetation?

inches) Color (moist) %	Color (moist)	% Type1	Loc <sup>2</sup>	Texture	Remarks
-4 10YR 4/3 100	-			GRAVELLY	LOth
ypes: C = Concentration D = Depletion RM	= Reduced Matrix	<sup>2</sup> Location: PL	= Pore Lini	ng RC = Root C	hannel M = Matrix
vdric Soil Indicators: (Applicable to a	LRRs, unless of	nerwise noted)	<u> </u>	ndicators for Pro	blematic Hydric Soils <sup>3</sup>
Histosol (A1)	Sandy (	Gleyed Matrix (S4)		1 cm M	luck (A9) (LRR C)
Histic Epipedon (A2)	Sandy I	Redox (S5)		2 cm M	uck (A10) (LRR B)
Black Histic (A3)	Stripped	Matrix (S6)		Reduce	ed Vetric (F18)
Hydrogen Sulfide (A4)	Loamy I	Mucky Mineral (F1)		Red Pa	rent Materials (TF2)
Stratified Layers (AG) (LRR C)	Loamy (	Gleyed Matrix (F2)		Vegeta	ted Sand/Gravel Bars
1 cm Muck (A9) (LRR D)	Deplete	d Matrix (F3)		Other (	Explain in Remarks)
Depleted Below Dark Surface (A11)	Redox [	Dark Surface (F6)			
Thick Dark Surface (A12)	Deplete	d Dark Surface (F7)			hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Redox [	Depressions (F8)		wetland hydro	logy must be present.
	Vernal F	Pools (F9)			
Restrictive Layer (if present): Type:		Depth (Inches) 🗹_	Hvdri	c Soil? <u>NO</u>	
	T NO IN]	sicatoes o			odi trons,
lydrology Vetland Indicators		ocatoes o		leic (b	
lydrology Vetland Indicators		DICATORS D		leic (b	odi ひっから、 cators (2 or more required)
lydrology Vetland Indicators				Secondary Indi	
lydrology Vetland Indicators rimary Indicators (Any one indicator is suffic	ient)Salt Crus			Secondary IndiWater M	cators (2 or more required) Marks (B1) (Rivenne) nt Deposits (B2) (Riverine)
Hydrology Vetland Indicators rimary Indicators (Any one indicator is suffic Surface Water (A1)	ient) Salt Crus Biotic Cr	st (B11)		Secondary IndiWater M	cators (2 or more required) Marks (B1) (Rivenne)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is suffic	ient). Salt Crus Biotic Cr Aquatic I	st (B11) ust (B12)		Secondary Indi Secondary Indi Water M Sedime Drift De	cators (2 or more required) Marks (B1) (Rivenne) nt Deposits (B2) (Riverine)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is suffice	ient) Salt Crus Biotic Cr Aquatic I Hydroge	st (B11) ust (B12) nvertebrates (B13)		Secondary Indi Secondary Indi Water I Sedime Drift De Drift De	cators (2 or more required) Marks (B1) (Riverine) nt Deposits (B2) (Riverine) posits (B3) (Riverine)
Hydrology         Vetland Indicators         Inimary Indicators (Any one indicator is suffice	ient). Salt Crus Biotic Cr Aquatic I Hydroge Oxidized	st (B11) ust (B12) nvertebrates (B13) n Sulfide Odor (C1)	F (14)	Secondary India	cators (2 or more required) Marks (B1) (Riverine) nt Deposits (B2) (Riverine) posits (B3) (Riverine) je Patterns (B10)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is suffice	ient) Salt Crus Biotic Cr Aquatic I Hydroge Oxidized Presence Recent Is	st (B11) ust (B12) nvertebrates (B13) n Sulfide Odor (C1) Rhizospheres (C3) e of Reduced Iron (C ron Reduction in	F (14)	Secondary Indi Secondary Indi Water M Sedime Drift De Drift De Drainag Dry-Sea Thin Mu	cators (2 or more required Marks (B1) (Riverine) Int Deposits (B2) (Riverine posits (B3) (Riverine) pe Patterns (B10) ason Water Table (C2)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is suffice	ient) Salt Crus Biotic Cr Aquatic I Hydroge Oxidized Presence Recent II Plowed	st (B11) ust (B12) nvertebrates (B13) n Sulfide Odor (C1) Rhizospheres (C3) e of Reduced Iron (C on Reduction in Soils (C6)	F (14)	Secondary Indi Secondary Indi Water M Sedime Drift De Drift De Drinac Thin Mi Crayfisl Saturat	cators (2 or more required) Marks (B1) (Riverine) Int Deposits (B2) (Riverine) posits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) in Burrows (C8) ion Visible on
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is suffice	ient) Salt Crus Biotic Cr Aquatic I Hydroge Oxidized Presence Recent II Plowed	st (B11) ust (B12) nvertebrates (B13) n Sulfide Odor (C1) Rhizospheres (C3) e of Reduced Iron (C ron Reduction in	F (14)	Secondary Indi Secondary Indi Water M Sedime Drift De Drift De Drainag Thin Mu Crayfisl Saturat Aerial I	cators (2 or more required Marks (B1) (Riverine) Int Deposits (B2) (Riverine) posits (B3) (Riverine) pe Patterns (B10) ason Water Table (C2) uck Surface (C7) In Burrows (C8) ion Visible on magery (C9)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is suffice	ient) Salt Crus Biotic Cr Aquatic I Hydroge Oxidized Presence Recent II Plowed	st (B11) ust (B12) nvertebrates (B13) n Sulfide Odor (C1) Rhizospheres (C3) e of Reduced Iron (C on Reduction in Soils (C6)	F (14)	Secondary Indi Secondary Indi Water M Sedime Drift De Drainag Dry-Sea Thin Mu Crayfisl Aerial I Shallow	cators (2 or more required Marks (B1) (Riverine) Int Deposits (B2) (Riverine) posits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) In Burrows (C8) ion Visible on magery (C9) v Aquitard (D3)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is suffice	ient) Salt Crus Biotic Cr Aquatic I Hydroge Oxidized Presence Recent II Plowed	st (B11) ust (B12) nvertebrates (B13) n Sulfide Odor (C1) Rhizospheres (C3) e of Reduced Iron (C on Reduction in Soils (C6)	F (14)	Secondary Indi Secondary Indi Water M Sedime Drift De Drainag Dry-Sea Thin Mu Crayfisl Aerial I Shallow	cators (2 or more required) Marks (B1) (Riverine) Int Deposits (B2) (Riverine) posits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) in Burrows (C8) ion Visible on magery (C9)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is suffice	ient) Salt Crus Biotic Cr Aquatic I Aquatic I Oxidized Oxidized Presence Recent In Plowed	et (B11) ust (B12) nvertebrates (B13) n Sulfide Odor (C1) Rhizospheres (C3) e of Reduced Iron (C on Reduction in Soils (C6) xplain in Remarks)	F 174	Secondary Indi Secondary Indi Water M Sedime Drift De Drift De Drift De Drift De Crayfisl Saturat Aerial I Shallow FAC-Ne	cators (2 or more required) Marks (B1) (Riverine) Int Deposits (B2) (Riverine) posits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) in Burrows (C8) ion Visible on magery (C9) Aquitard (D3) etural Test (D5)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is suffic	ient) Salt Crus Biotic Cr Aquatic I Hydroge Oxidized Presence Recent Is Other (Es	st (B11) ust (B12) nvertebrates (B13) n Sulfide Odor (C1) Rhizospheres (C3) e of Reduced Iron (C ron Reduction in Soils (C6) xplain in Remarks)	F 174	Secondary Indi Secondary Indi Water M Sedime Drift De Drainag Dry-Sea Thin Mu Crayfisl Aerial I Shallow	cators (2 or more required Marks (B1) (Riverine) Int Deposits (B2) (Riverine) posits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) In Burrows (C8) ion Visible on magery (C9) v Aquitard (D3)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is suffic	ient) Salt Crus Biotic Cr Aquatic I Hydroge Oxidized Presence Recent Is Other (Es	st (B11) ust (B12) nvertebrates (B13) n Sulfide Odor (C1) Rhizospheres (C3) e of Reduced Iron (C ron Reduction in Soils (C6) xplain in Remarks)	F 174	Secondary Indi Secondary Indi Water M Sedime Drift De Drift De Drift De Drift De Crayfisl Saturat Aerial I Shallow FAC-Ne	cators (2 or more required Marks (B1) (Riverine) Int Deposits (B2) (Riverine) posits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) in Burrows (C8) ion Visible on magery (C9) Aquitard (D3) etural Test (D5)
High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	ient) Salt Crus Biotic Cr Aquatic I Hydroge Oxidized Presence Recent Is Other (Es	st (B11) ust (B12) nvertebrates (B13) n Sulfide Odor (C1) Rhizospheres (C3) e of Reduced Iron (C ron Reduction in Soils (C6) xplain in Remarks)	F 174	Secondary Indi Secondary Indi Water M Sedime Drift De Drift De Drift De Drift De Crayfisl Saturat Aerial I Shallow FAC-Ne	cators (2 or more required) Marks (B1) (Riverine) Int Deposits (B2) (Riverine) posits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) in Burrows (C8) ion Visible on magery (C9) Aquitard (D3) etural Test (D5)
Hydrology         Vetland Indicators         rimary Indicators (Any one indicator is suffic	ient) Salt Crus Biotic Cr Aquatic I Oxidized Oxidized Oxidized Oxidized Other II Other (Existence Depth (inches Depth (inches Depth (inches	st (B11) ust (B12) nvertebrates (B13) n Sulfide Odor (C1) Rhizospheres (C3) of Reduced Iron (C on Reduction in Soils (C6) xplain in Remarks)	€ (+ γ.) 4) Wetland H es capillary	Secondary Indi Secondary Indi Water M Sedime Drift De Drift De Drift De Drift De Crayfish Shallow FAC-Ne ydrology? Yes _ fringe)	cators (2 or more required Marks (B1) (Riverine) Int Deposits (B2) (Riverine) posits (B3) (Riverine) ge Patterns (B10) ason Water Table (C2) uck Surface (C7) in Burrows (C8) ion Visible on magery (C9) Aquitard (D3) etural Test (D5)

				SAN LUIS
North State Resources				Habitat Type RESEVOUIR
Wetland Determination Data Form - Arid	West Regi	ion		Wetland Type DEEP WATER
Project/Site:Sisk Dam Corrective Action Project		City/Count	y: <u>Merced</u>	
Applicant/Owner:U.S. Bureau of Reclamation				State: <u>CA</u> Sampling Point: <u>46</u>
Investigator(s):				
Landform (hillslope, terrace, etc.) <u>RESENOUIR</u> Subregion (LRR) <u>LRR-C</u>	Soil	_ Local rel	ief (concave, Name: <u>W</u>	CONVEX, NONE) <u>(OAN CAUE</u> Slope % <u>23</u> HER
Are climatic/hydrologic conditions on the site typical for this	s time of year?	1ES_1	(If no, explain	in remarks.)
Are vegetation $\underline{N}_{+}$ , soil $\underline{N}_{-}$ , or hydrology $\underline{N}_{-}$ sign	ificantly disturt	bed? Are n	ormal circum	stances present?
Are vegetation N, soil N, or hydrology N natu	rally problema	atic? (If no	eded, explain	any answers in Remarks.)
Summary of Findings (Attach site map showin Hydrophytic vegetation? <u>YES</u> Hydric soil? <u>YES</u> W	ng sampling po etland hydrolog	oint location gy? <u>4 FE S</u>	s, transects, Is sampled	important features, etc.) area a wetland? $\frac{100}{100}$ Other waters? $\frac{125}{100}$
USACE Jurisdiction Adjacent to Waters Tributary to Waters Isola Explain: SAN LUIS (RES,	ated (with inter	rstate comm	nerce)	Isolated (non jurisdictional)
Evaluation of features designated "O	thor Wat	ors of t	ho Unite	d States"
Indicators: Defined bed and bank X Scour	Ordina	ary High Wa	ater Mark Ma	pped X
Feature Designation: Perennial Intermittent X Natural Drainage Artificial Dra	Ephemeral	Blue-lin	e on USGS	Quad 💹
Remarks DP DOCUMENTS THAT				SHUDING IS ACOULDATE
DE LECATED AT UPPER LI				
(WAVE BLEAKING) AREA.		e • 11	1	• • • • • • • • • • • • • • • • • • •
	· · · ·	5	-	
vedetation	Absolute	Dominant	Indicator	Dominance Test Worksheet
Vegetation Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?		Number of dominant species U
Tree Stratum (use scientific names) 1. <u>Salix la evica</u> ta			<u>Status</u> FACW	Number of dominant species <u>4</u> (A)
Tree Stratum (use scientific names) 1. <u>Salix la eviga ta</u> 2. <u>Populus fremontin</u>			Status	Number of dominant species <u>4</u> (A) that are OBL, FACW, or FAC: <u>4</u> (A) Total number of dominant species
Tree Stratum (use scientific names) 1. <u>Salix la evicya ta</u> 2. <u>Populus fremoniti</u> 3.	<u>% Cover</u> 		<u>Status</u> FACW	Number of dominant species       4         that are OBL, FACW, or FAC:       4         Total number of dominant species       5         across all strata:       6
Tree Stratum (use scientific names) 1. $\underline{Sa}_{ix}$ $\underline{Cevicyata}_{a}$ 2. $\underline{PopvlvS}$ $\underline{Fremontin}_{ix}$ 3. $\underline{50\%=5}$ $\underline{20\%=2}$ Total Cove	<u>% Cover</u> <u>5</u> <u>5</u> r: <u>1</u> D	Species? <u>Y</u> Y	Status FACW FACW	Number of dominant species       4         that are OBL, FACW, or FAC:       4         Total number of dominant species       5         across all strata:       6
Tree Stratum (use scientific names) 1. $\underline{Sa _{i\times}}   a \in V i a a fa$ 2. $\underline{Populus} fremon fin 3. \underline{50\%} = \underline{5} 20% = \underline{Z} Total CoveSapling/Shrub Stratum (use scientific names)$	<u>% Cover</u> <u>5</u> 	Species?	Status FACW FACW	Number of dominant species       4         that are OBL, FACW, or FAC:       4         Total number of dominant species       5         across all strata:       5         Percent of dominant species that are OBL, FACW, or FAC:       80         (A)       (A)
Tree Stratum (use scientific names) 1. <u>Salix la evicyata</u> 2. <u>Populus Evernontin</u> 3 50%= <u>5</u> Sapling/Shrup Stratum (use scientific names) 1. <u>Baccharis Viminar</u>	<u>% Cover</u> <u>5</u> 	Species?	Status FACW FACW Status FACW	Number of dominant species       4         that are OBL, FACW, or FAC:       4         Total number of dominant species       5         across all strata:       5         Percent of dominant species that are OBL, FACW, or FAC:       80         (A)         Prevalence Index Worksheet
Tree Stratum (use scientific names) 1. $\underline{Sa _{i\times}}   a \in V i a a fa$ 2. $\underline{Populus} fremon fin 3. \underline{50\%} = \underline{5} 20% = \underline{Z} Total CoveSapling/Shrub Stratum (use scientific names)$	<u>% Cover</u> <u>5</u> <u>7</u> <u>7</u> <u>8</u> <u>6</u> <u>6</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u>	Species? Y Species? Y Species?	Status FACW FACW Status	Number of dominant species       4         that are OBL, FACW, or FAC:       4         Total number of dominant species       5         across all strata:       5         Percent of dominant species that are OBL, FACW, or FAC:       80         (A)       (A)
Tree Stratum (use scientific names) 1. $\underline{Sa}_{ix} \underline{laevic_a fa}_{2}$ 2. $\underline{Popv}_{vc} \underline{fvcmow}_{ix}$ 3. $\underline{50\%} = \underline{5}_{20\%} = \underline{2}_{10\%}$ Total Cove Sapling/Shrub Stratum (use scientific names) 1. $\underline{Bacchav}_{is} \underline{fim}_{i} \underline{Aav}_{2}$ 3. $\underline{50\%} = \underline{5}_{20\%} = \underline{2}_{20\%}$	<u>% Cover</u> <u>5</u> 	Species? Y Species? Y Species?	Status FACW FACW Status	Number of dominant species $4$ (A)         Total number of dominant species $5$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $80$ (AB)         Prevalence Index Worksheet $104$ $104$ $104$ OBL Species $12$ $12$ $12$ FACW Species $22$ $22$ $23$
Tree Stratum (use scientific names) 1. $\underline{Sa}_{ix}$ $\underline{Caeviga fa}_{2}$ 2. $\underline{PPV}_{VS}$ $\underline{fremon}_{ix}$ 3. $\underline{50\%}_{=}$ $\underline{5}_{20\%}_{=}$ $\underline{Z}_{1}$ Total Cove Sapling/Shrub Stratum (use scientific names) 1. $\underline{Baechavis}_{ViminAav}$ 2. $\underline{50\%}_{=}$ $\underline{5}_{20\%}_{=}$ $\underline{2}_{1}$ Total Cove	<u>% Cover</u> <u>5</u> <u>5</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u>	Species?	Status FACW FACW Status	Number of dominant species       4         that are OBL, FACW, or FAC:       4         Total number of dominant species       5         across all strata:       5         Percent of dominant species that are OBL, FACW, or FAC:       80         Prevalence Index Worksheet       6         Total % Cover of:       Multiply by         OBL Species       2 x 1 =
Tree Stratum (use scientific names) 1. $\underline{Sa}_{1} \times \underline{la} \in V i \underline{cya} \underline{fa}_{a}$ 2. $\underline{Pbv}_{v} \otimes \underline{fv} \in \underline{mow} + \overline{i}$ . 3. $\underline{50\%} = \underline{5}_{20\%} = \underline{2}_{10\%}$ Total Cove Sapling/Shrub Stratum (use scientific names) 1. $\underline{Bacchav} \times \underline{j} \times \underline{j} \times \underline{min} Aax$ 2. $\underline{50\%} = \underline{5}_{20\%} = \underline{2}_{10\%}$ Total Cove Herb Stratum (use scientific names)	<u>% Cover</u> <u>5</u> <u>5</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u>	Species?	Status FACW BACW Status FACW	Number of dominant species $4$ (A)         Total number of dominant species $5$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $80$ (AB)         Prevalence Index Worksheet $80$ (AB)         Prevalence Index Worksheet $104$ $102$ Total % Cover of: $12$ $12$ FACW Species $12$ $12$
Tree Stratum (use scientific names) 1. $\underline{\neg a \mid x \mid a \in V \mid a \neq a}$ 2. $\neg b p \vee l \lor g \notin v \land h \land$	<u>% Cover</u> <u>5</u> <u>5</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u>	Species?	Status FACW BACW Status FACW Status VPL	Number of dominant species $4$ (A)         Total number of dominant species $5$ (B)         Total number of dominant species $5$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $80$ (AB)         Prevalence Index Worksheet $70tal %$ Cover of:       Multiply by         OBL Species $x 1 =$ $x 2 =$ FACW Species $x 3 =$ $x 3 =$ FACU Species $x 4 =$ $x 4 =$ UPL Species $x 5 =$ $x 5 =$
Tree Stratum (use scientific names) 1. $\underline{Sa}_{1} \times \underline{laevic_a fa}_{2}$ 2. $\underline{PopvlvS} (vcmontin)$ 3. $\underline{vcmontin}_{1}$ 3. $\underline{vcmontin}_{1}$ 50%= $\underline{S}_{20\%}$ Total Cove Sapling/Shrub Stratum (use scientific names) 1. $\underline{Bacchavis} \sqrt{\underline{iminav}}_{1}$ 50%= $\underline{S}_{20\%}$ Total Cove 1. $\underline{Sacchavis} \sqrt{\underline{iminav}}_{2}$ 3. $\underline{Sacchavis} \sqrt{\underline{iminav}}_{2}$ 3. $\underline{Sacchavis} \sqrt{\underline{iminav}}_{2}$ 3. $\underline{Sacchavis} \sqrt{\underline{iminav}}_{2}$ 4. $\underline{Some_{2}} = \underline{Sacchavis} \sqrt{\underline{Sacchavis}}_{2}$ 50%= $\underline{Sacchavis} \sqrt{\underline{Sacchavis}}_{2}$ 50	<u>% Cover</u> <u>5</u> <u>5</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>8</u> <u>6</u> <u>6</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u> <u>7</u>	Species?	Status FACW FACW Status FACW Status VPL OBL	Number of dominant species $4$ (A)         Total number of dominant species $5$ (B)         Total number of dominant species $5$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $80$ (AB)         Prevalence Index Worksheet $70tal %$ Cover of:       Multiply by         OBL Species $x 1 =$ $x 2 =$ FACW Species $x 3 =$ $x 3 =$ FACU Species $x 4 =$ $x 4 =$ UPL Species $x 5 =$ $x 5 =$
Tree Stratum (use scientific names) 1. $\underline{Sa}_{ix}$ $\underline{laevic_a fa}_{2}$ 2. $\underline{Popv}_{vS}$ $\underline{fvcmont_i}$ 3. $\underline{50\%}_{=}$ $\underline{5}_{20\%}_{=}$ $\underline{2}_{20\%}_{=}$ Total Cove Sapling/Shrub Stratum (use scientific names) 1. $\underline{Bacchavis}_{iminAax}$ 2. $\underline{50\%}_{=}$ $\underline{5}_{20\%}_{=}$ $\underline{2}_{20\%}_{=}$ Total Cove 1. $\underline{50\%}_{=}$ $\underline{5}_{20\%}_{=}$ $\underline{2}_{20\%}_{=}$ Total Cove Herb Stratum (use scientific names) 1. $Bigsicanegic$	$\frac{\% \text{ Cover}}{5}$ $\frac{5}{7}$ $\frac{7D}{7}$ $\frac{7D}{7}$ $\frac{7D}{7}$ $\frac{7D}{7}$ $\frac{7D}{7}$ $\frac{7D}{7}$ $\frac{7D}{7}$ $\frac{7D}{7}$ $\frac{7D}{7}$	Species?	Status FACW BACW Status FACW Status VPL OBL	Number of dominant species $4$ (A)         Total number of dominant species $5$ (B)         Total number of dominant species $5$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $80$ (AB)         Prevalence Index Worksheet $70tal %$ Cover of:       Multiply by         OBL Species $x 1 =$ $x 2 =$ FACW Species $x 3 =$ $x 3 =$ FACU Species $x 4 =$ $x 4 =$ UPL Species $x 5 =$ $x 5 =$
Tree Stratum (use scientific names) 1. $\underline{Sa}_{ix}$ $\underline{Caeviga fa}_{2}$ 2. $\underline{Pipv}_{ivs}$ $\underline{fremontin}_{iv}$ 3. $\underline{50\%}_{=}$ $\underline{5}$ $\underline{20\%}_{=}$ $\underline{Z}$ Total Cove Sapling/Shrub Stratum (use scientific names) 1. $\underline{Baechavis}$ $\underline{Viminav}$ 2. $\underline{50\%}_{=}$ $\underline{5}$ $\underline{20\%}_{=}$ $\underline{2}$ Total Cove 3. $\underline{50\%}_{=}$ $\underline{5}$ $\underline{20\%}_{=}$ $\underline{2}$ Total Cove 4. $\underline{50\%}_{=}$ $\underline{5}$ $\underline{20\%}_{=}$ $\underline{2}$ Total Cove 4. $\underline{50\%}_{=}$ $\underline{5}$ $\underline{20\%}_{=}$ $\underline{2}$ Total Cove 4. $\underline{51\%}_{e}$ $\underline{51\%}_{e}$ $\underline{6ara55aVicum}_{e}$	$\frac{\% \text{ Cover}}{5}$ $\frac{5}{10}$ $\frac{10}{10}$ $\frac{10}{\% \text{ Cover}}$ $\frac{10}{25}$ $\frac{10}{10}$	Species?	Status FACW FACW Status FACW Status VPL OBL	Number of dominant species $4$ (A)         Total number of dominant species $5$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $6$ $6$ Percent of dominant species that are OBL, FACW, or FAC: $6$ $6$ Prevalence Index Worksheet $6$ $6$ Total % Cover of:       Multiply by $6$ OBL Species $x 1 =$ $x 2 =$ FACW Species $x 3 =$ $x 3 =$ FACU Species $x 4 =$ $x 4 =$ UPL Species $x 5 =$ $x 5 =$ Column Totals $(A)$ $(B)$
Tree Stratum (use scientific names) 1. $\underline{Sa}_{ix} \underline{laevic_a fa}_{2}$ 2. $\underline{Popv}_{vs} \underline{fvcmontin}_{1}$ 3. $\underline{50\%}_{=} \underline{5}_{20\%}_{=} \underline{2}_{1}$ Total Cove Sapling/Shrub Stratum (use scientific names) 1. $\underline{Bacchavis} \underline{ivminav}_{1}$ 2. $\underline{50\%}_{=} \underline{5}_{20\%}_{=} \underline{2}_{1}$ Total Cove 3. $\underline{50\%}_{=} \underline{5}_{20\%}_{=} \underline{2}_{1}$ Total Cove Herb Stratum (use scientific names) 1. $\underline{Brgsicmpeara}_{1}$ Total Cove $\underline{Helifropium}_{2} \underline{arassavicum}_{1}$	$\frac{\% \text{ Cover}}{5}$ $\frac{5}{7}$ $\frac{70}{\% \text{ Cover}}$ $\frac{70}{10}$ $\frac{70}{\% \text{ Cover}}$ $\frac{70}{25}$ $\frac{70}{10}$	Species?           Y           Y           Species?           Y           Species?           Y           Y	Status FACW FACW Status FACW Status VPL OBL	Number of dominant species $4$ that are OBL, FACW, or FAC:       (A)         Total number of dominant species       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet       (AB)         Total % Cover of:       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)
Tree Stratum (use scientific names) 1. $\underline{Sa}_{ix} \underline{laevigata}$ 2. $\underline{PPV}_{VS} \underline{fremontin}$ 3. $\underline{50\%} = \underline{5}$ 20% = $\underline{Z}$ Total Cove Sapling/Shrub Stratum (use scientific names) 1. $\underline{Bacchavis} \underline{viminax}$ 2. $\underline{50\%} = \underline{5}$ 20% = $\underline{2}$ Total Cove 1. $\underline{50\%} = \underline{5}$ 20% = $\underline{2}$ Total Cove 1. $\underline{50\%} = \underline{5}$ 20% = $\underline{2}$ Total Cove 1. $\underline{Brqsica} \underline{peara}$ 1. $\underline{Brqsica} \underline{peara}$ 1. $\underline{Brqsica} \underline{peara}$	$\frac{\% \text{ Cover}}{5}$ $\frac{5}{7}$ $\frac{7D}{\% \text{ Cover}}$ $\frac{7D}{70}$ $\frac{7D}{\% \text{ Cover}}$ $\frac{7D}{70}$ $\frac{7D}{\% \text{ Cover}}$ $\frac{25}{7D}$	Species?           Y           Y           Species?           Y           Species?           Y           Y	Status FACW FACW Status FACW Status VPL OBL	Number of dominant species $4$ that are OBL, FACW, or FAC:       (A)         Total number of dominant species       (B)         Percent of dominant species that are OBL, FACW, or FAC:       (B)         Prevalence Index Worksheet       (AB)         Prevalence Index Worksheet       Multiply by         OBL Species $x 1 =$ FACW Species $x 2 =$ FAC Species $x 3 =$ FACU Species $x 4 =$ UPL Species $x 5 =$ Column Totals       (A)         Prevalance Index = B/A =       (B)         Prevalance Index = B/A =       (B)
Tree Stratum (use scientific names) 1. $\underline{Sa}_{ix} \underline{laevic_a fa}_{2}$ 2. $\underline{Popv}_{vs} \underline{fvcmontin}_{1}$ 3. $\underline{50\%}_{=} \underline{5}_{20\%}_{=} \underline{2}_{1}$ Total Cove Sapling/Shrub Stratum (use scientific names) 1. $\underline{Bacchavis} \underline{ivminav}_{1}$ 2. $\underline{50\%}_{=} \underline{5}_{20\%}_{=} \underline{2}_{1}$ Total Cove 3. $\underline{50\%}_{=} \underline{5}_{20\%}_{=} \underline{2}_{1}$ Total Cove Herb Stratum (use scientific names) 1. $\underline{Brgsicmpeara}_{1}$ Total Cove $\underline{Helifropium}_{2} \underline{arassavicum}_{1}$	$\frac{\% \text{ Cover}}{5}$ $\frac{5}{7}$ $\frac{7D}{\% \text{ Cover}}$ $\frac{7D}{70}$ $\frac{7D}{\% \text{ Cover}}$ $\frac{7D}{70}$ $\frac{7D}{\% \text{ Cover}}$ $\frac{25}{7D}$	Species?           Y           Y           Species?           Y           Species?           Y           Y	Status FACW FACW Status FACW Status VPL OBL	Number of dominant species $\mathcal{Y}$ (A)         Total number of dominant species $\mathcal{Y}$ (A)         Total number of dominant species $\mathcal{Y}$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $\mathcal{BO}$ (AB)         Prevalence Index Worksheet $\mathcal{BO}$ (AB)         Prevalence Index Worksheet $\mathcal{M}$ $\mathcal{H}$ Total % Cover of: $\mathcal{M}$ $\mathcal{M}$ OBL Species $x 1 =$ $x 2 =$ FACW Species $x 3 =$ $x 3 =$ FACU Species $x 4 =$ $\mathcal{H}$ UPL Species $x 5 =$ $\mathcal{H}$ Column Totals $(A)$ $(B)$ Prevalance Index = $B/A =$ $\mathcal{H}$ Hydrophytic Vegetation Indicators $\mathcal{H}$ Morphological Adaptations <sup>1</sup> (provide supp data in Remarks or on a separate sheet) $\mathcal{H}$
Tree Stratum (use scientific names) 1. $\underline{Sa}_{ix} \underline{laevigata}$ 2. $\underline{PPV}_{VS} \underline{fremontin}$ 3. $\underline{50\%} = \underline{5}$ 20% = $\underline{Z}$ Total Cove Sapling/Shrub Stratum (use scientific names) 1. $\underline{Bacchavis} \underline{viminax}$ 2. $\underline{50\%} = \underline{5}$ 20% = $\underline{2}$ Total Cove 1. $\underline{50\%} = \underline{5}$ 20% = $\underline{2}$ Total Cove 1. $\underline{50\%} = \underline{5}$ 20% = $\underline{2}$ Total Cove 1. $\underline{Brqsica} \underline{peara}$ 1. $\underline{Brqsica} \underline{peara}$ 1. $\underline{Brqsica} \underline{peara}$	$\frac{\% \text{ Cover}}{5}$ $\frac{5}{5}$ $\frac{7}{10}$ $\frac$	Species?           Y           Species?           Y           Species?           Y           Species?           Y	Status FACW BACW Status FACW Status VPL OBL	Number of dominant species $\mathcal{Y}$ (A)         Total number of dominant species $\mathcal{Y}$ (A)         Total number of dominant species $\mathcal{Y}$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $\mathcal{B}$ (AB)         Prevalence Index Worksheet $\mathcal{Y}$ $\mathcal{Y}$ $\mathcal{Y}$ OBL Species $x 1 =$ $x 1 =$ $x 2 =$ $x 3 =$ $x 3 =$ FACW Species $x 3 =$ $x 4 =$ $x 4 =$ $x =$ $x =$ $x =$ UPL Species $x 4 =$ $x =$ <
Tree Stratum (use scientific names) 1. $\int a   ix   a \in V i ga fa$ 2. $Pipol v frementin 3. 50\% = 5 20% = \mathbb{Z} Total CoveSapling/Shrub Stratum (use scientific names)1. Bacchavis Viminae2. Bacchavis Viminae3. Bacchavis Viminae3. Bacchavis Viminae3. Bacchavis Viminae3. Discrete filter for the filter of the $	$\frac{\% \text{ Cover}}{5}$ $\frac{5}{7}$ $\frac{70}{70}$	Species?	Status FACW BACW Status FACW Status VPL OBL	Number of dominant species $4$ (A)         Total number of dominant species $5$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $80$ (AB)         Prevalence Index Worksheet $x1 =$ $x2 =$ FACW Species $x3 =$ $x3 =$ FACU Species $x4 =$ $x4 =$ UPL Species $x5 =$ $x5 =$ Column Totals $(A)$ $(B)$ Prevalance Index = $B/A =$ $A$
Tree Stratum (use scientific names) 1. $\int a   ix   a \in V i ga fa$ 2. $Popol v \in fv c mon fi$ . 3. $\int 50\% = 5$ 20% = $\mathbb{Z}$ Total Cove Sapling/Shrub Stratum (use scientific names) 1. $Ba c c h a v i \leq V i M i h a \times 2$ 3. $\int Ba c c h a v i \leq V i M i h a \times 2$ 3. $\int Ba c c h a v i \leq V i M i h a \times 2$ 3. $\int Ba c c h a v i \leq V i M i h a \times 2$ 3. $\int Ba c c h a v i \leq V i M i h a \times 2$ 3. $\int Ba c c h a v i \leq V i M i h a \times 2$ 3. $\int Ba c c h a v i \leq V i M i h a \times 2$ 3. $\int Ba c c h a v i \leq V i M i h a \times 2$ 50% = $\int 20\% = 2$ Total Cover $\int Bi fa \leq i c h a f a \leq i \leq V i e v h i h a + i \leq V i = 0$ $\int Bi fa \leq i \leq v h a f a \leq i \leq V i \in V h a + i \leq V i = 0$ $\int Bi fa \leq i \leq v h a + i \leq V i = 0$ $\int Bi fa \leq i \leq v h a + i \leq V i = 0$ $\int Bi fa \leq i \leq v h a + i \leq V i = 0$ $\int Bi fa \leq i \leq v h a + i \leq V i = 0$ $\int Bi fa = i \leq V$	$\frac{\% \text{ Cover}}{5}$ $\frac{5}{7}$ $\frac{70}{70}$	Species?           Y           Species?	Status FACW FACW Status FACW Status VPL OBL Status VPL Status	Number of dominant species $4$ (A)         Total number of dominant species $5$ (B)         Percent of dominant species that are OBL, FACW, or FAC: $80$ (AB)         Prevalence index Worksheet $x1 =$ $x1 =$ FACW Species $x2 =$ $x3 =$ FACW Species $x3 =$ $x4 =$ UPL Species $x5 =$ $x6 =$ Column Totals $(A)$ $(B)$ Prevalance Index = $B/A =$ $(A)$ $(B)$ Prevalance Index = $B/A =$ $(A)$ $(B)$ Prevalence Index is $< 3.0^1$ $8.0^1$ $8.0^1$ Morphological Adaptations <sup>1</sup> (provide supp data in Remarks or on a separate sheet) $9.0^1$ Problematic Hydrophytic Vegetation <sup>1</sup> (Exp data in Remarks or on a separate sheet) $9.0^1$

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Soils								5	
Profile D	escription: (De Matrix	scribe to the	depth needed to docu Redox Features	ment th	e indicator o	or confirm	the absence of ind	icators.	
(inches)	Color (moist)	%	Color (moist)	_%	Type <sup>1</sup>	Loc2	Texture	Remarks	
A. 1 "	54 4/2	100		-	-		COMPACIED	CRAUE (1 SAND)	

(inches) Color (moist) %	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
-6 2.54 4/2 100		-			<u>Compticited</u>	aeturci sand
	RM = Reduced Matrix		ocation: PL	= Pore Lir		
Hydric Soil Indicators: (Applicable         Histosol (A1)         Histic Epipedon (A2)         Black Histic (A3)         Hydrogen Sulfide (A4)         Stratified Layers (AG) (LRR C)         1 cm Muck (A9) (LRR D)	Sandy G Sandy R Stripped	ileyed M edox (S Matrix ( fucky Mi ileyed M	atrix (S4) 5) S6) ineral (F1) latrix (F2)		1 cm Mi 2 cm Mi Reduce Red Pai Vegetat	<u>blematic Hydric Soils<sup>3</sup></u> uck (A9) (LRR C) uck (A10) (LRR B) d Vetric (F18) rent Materials (TF2) ed Sand/Gravel Bars Explain in Remarks)
Depleted Below Dark Surface (A1 Thick Dark Surface (A12) Sandy Mucky Mineral (S1)	· · · · · · · · · · · · · · · · · · ·	Dark Si Dark Si	urface (F7) ons (F8)			nydrophytic vegetation and ogy must be present.
Restrictive Layer (if present): Type:			ches)		ric Soil? <u>YES</u>	

Remarks CLEAR LAYERS OF FLOVIAL SEDIMENTATION.

#### Hydrology

Wetland Indicato Primary Indicators (An		Secondary Indicators (2 or more required)			
Surface Water High Water Tab Saturation (A3) Water Marks (B Sediment Depo Surface Soil Cra Inundation Visib Aerial Imagery Water-Stained I	ole (A2) 1) (Nonrivering sits (B2) (Non acks (B6) ole on (B7)		Salt Crust (B11 Biotic Crust (B Aquatic Inverte Hydrogen Sulfi Oxidized Rhizo Presence of Re Recent Iron Re Plowed Soils ( Other (Explain	12) brates (B13) de Odor (C1) spheres (C3) educed Iron (C4) duction in C6)	Water Marks (B1) (Riverine)         Sediment Deposits (B2) (Riverine)         Drift Deposits (B3) (Riverine)         Drainage Patterns (B10)         Dry-Season Water Table (C2)         Thin Muck Surface (C7)         Crayfish Burrows (C8)         Saturation Visible on         Aerial Imagery (C9)         Shallow Aquitard (D3)         FAC-Netural Test (D5)
Field Observation Surface Water Present? Water Table Present? Saturation Present? Describe Recorde	Yes Yes Yes	No A No A am gauge, m		<i>(includes capil</i> ) tos, and previous inspe	ections), if available:

Reman

Wetland Determination Data Form - Arice	d West Reg	lon		Habitat Type GBASSLAND
				Wetland Type Eph. Stream
			ty: <u>Merce</u>	Sampling Date: <u>1/18/09</u> State: <u>CA</u> Sampling Point: <u>47</u>
Applicant/Owner: U.S. Bureau of Reclamation		a the set of		State: <u>CA</u> Sampling Fount
Investigator(s): <u>J. Colescott</u>				- Slong & VIN'S
Landform (hillstope, terrace, etc.)		Local re	lief (concave	, convex, none) CONCAVE Slope % ~10 1/2
				EIL SILT LOAM, 30-50%
Are climatic/hydrologic conditions on the site typical for the	his time of year	17/22	(If no, explai	n in remarks.)
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ sig	gnificantly distu	rbed? Are i	normal circur	nstances present?
Are vegetation <u>N</u> , soil <u>N</u> , or hydrology <u>N</u> na	turally problem	atic? (If ne	eded, explai	n any answers in Remarks.)
Summary of Findings (Attach site map show	ving sampling p	oint location	ns, transects	, important features, etc.)
Hydrophytic vegetation? NO Hydric soil? YES	Wetland hydrolo	ogy? 4R	≥ Is sample	d area a wetland? No Other waters? <u>7k-5</u>
USACE Jurisdiction Adjacent to Waters Tributary to Waters Iso Explain: TR NO SAN	plated (with inte	erstate com	merce)	_ Isolated (non jurisdictional)
Evaluation of features designated "		ters of the	ater Mark M	apped <u>x</u> - 1' WDE
Remarks SMALL (1-FOOT WIL EPHEMFERAL FLOW PATT	SE) 15th	D 7	STON	DRATINAGE LIVICE
EPHEMIERAL FLOW PATT	erns.	NO	VIAN	UD PAIR TAKEN
Vegetation	Absolute	Dominan	t Indicator	Dominance Test Worksheet
Tree Stratum (use scientific names)	% Cover		Status	Number of dominant species that are OBL, FACW, or FAC:(A)
1				
2				Total number of dominant species <u>S</u> (B)
50%= 20%= Total Cov	/er:			Percent of dominant species that
Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	are OBL, FACW, or FAC: (AB)
1				Prevalence Index Worksheet
	-			Total % Cover of: Multiply by
3				OBL Species x1 =
4				FACW Species x2 =
		0	Olation	FAC Species x3 =
Herb Stratum (use scientific names)	% Cover 3 O	Species?	Status VPL	FACU Species ×4 =
1. Avena fatua		-H-		UPL Species x5 =
2. Bronos hordeacous		M	FACU	Column Tetals (A)(B)
3. Brownes matritensis			UPL .	Prevalance Index = B/A =
4. Eradium botrys		-5-	01	· · · · · · · · · · · · · · · · · · ·
Brassica Negra			UPL	Hydrophytic Vegetation Indicators Dominance Text is >50%
),				Prevalence Index is $\leq 3.0^{1}$
•				Morphological Adaptations <sup>1</sup> (provide supporting
50%= 20%= Total Cove		0	0	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Noody/Vine Stratum (use scientific names)	% Cover	Species?	Status	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
		<u> </u>	<u> </u>	be present.
				Hydrophytic Vegetation?NO
50%= 20%= Total Cove	ж. <u></u> т	ø		Harophylo regennion

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	Redox Features Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	04R 3/2	40			Stropy	LOAM
ypes: C = Concentration D = Depletion RM =	Reduced Matrix	2	Location: PL	= Pore Lini	ng RC = Roc	ot Channel M = Matrix
ydric Soil Indicators: (Applicable to all	LRRs, unless of	herwise n	noted)		ndicators for I	Problematic Hydric Soils <sup>3</sup>
<ul> <li>Histosol (A1)</li> <li>Histic Epipedon (A2)</li> <li>Black Histic (A3)</li> <li>Hydrogen Sulfide (A4)</li> <li>Stratified Layers (AG) (LRR C)</li> <li>1 cm Muck (A9) (LRR D)</li> <li>Depleted Below Dark Surface (A11)</li> <li>Thick Dark Surface (A12)</li> <li>Sandy Mucky Mineral (S1)</li> </ul>	Sandy I Stripped Loamy Loamy Deplete Redox I Redox I Redox I Redox I	Redox (S d Matrix ( Mucky M Gleyed M d Matrix Dark Surf	S6) ineral (F1) latrix (F2) (F3) face (F6) urface (F7) ons (F8)	14	2 cm Red Red Vega Other <sup>3</sup> Indicators	h Muck (A9) (LRR C) h Muck (A10) (LRR B) uced Vetric (F18) Parent Materials (TF2) etated Sand/Gravel Bars er (Explain in Remarks) of hydrophytic vegetation and drology must be present.
1						
Hydrology Vetland Indicators	STRI AITON	5 P	ЕRОМ. Р	2041	L DAPO	
Hydrology Wetland Indicators		5 F	F			SETION
Remarks SEDIMENTARY Hydrology Wetland Indicators Primary Indicators (Any one indicator is sufficie Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	ent) Salt Cru Biotic Cr Aquatic Hydroge Oxidized Presenc Recent I Plowed	st (B11) rust (B12) Invertebra In Sulfide I Rhizosp e of Redu ron Redu Soils (C6	) ates (B13) Odor (C1) heres (C3) uced Iron (C uction in		Secondary II Wate Sedi Sedi Drain Drain Drain Cray Satu Aeri Shal	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible on al Imagery (C9) low Aquitard (D3)
Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sufficient	ent) Salt Cru Biotic Cr Aquatic Hydroge Oxidized Presenc Recent I Plowed	st (B11) rust (B12) Invertebra In Sulfide I Rhizosp e of Redu ron Redu Soils (C6	) ates (B13) Odor (C1) heres (C3) uced Iron (C uction in		Secondary II Wate Sedi Sedi Drain Drain Drain Cray Satu Aeri Shal	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible on al Imagery (C9)
Hydrology         Netland Indicators         Primary Indicators (Any one indicator is sufficient of the suffi	ent) Salt Cru Biotic Cr Aquatic Aq	st (B11) rust (B12) Invertebra In Sulfide I Rhizosp e of Redu Soils (C6 xplain in	) ates (B13) Odor (C1) heres (C3) uced Iron (C uction in	4)	Secondary II Wate Sedi Sedi Drain Drain Drain Cray Satu Aeri Shal	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible on al Imagery (C9) low Aquitard (D3) -Netural Test (D5)
Hydrology         Netland Indicators         Primary Indicators (Any one indicator is sufficient)	ent) Salt Cru Biotic Cr Aquatic Hydroge Oxidized Presenc Recent I Plowed	st (B11) rust (B12) Invertebra In Sulfide I Rhizosp e of Redu ron Redu Soils (C6 xplain in	) ates (B13) Odor (C1) heres (C3) uced Iron (C uction in	4)	Secondary II Wate Sedi Crain Drain Drain Drain Drain Cray Satu Aeri Shal FAC	ndicators (2 or more required) er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible on al Imagery (C9) low Aquitard (D3) -Netural Test (D5)
Hydrology         Netland Indicators         Primary Indicators (Any one indicator is sufficient)	ent) Salt Cru Biotic Cr Aquatic Hydroge Oxidized Presenc Presenc Recent I Other (E	st (B11) rust (B12) Invertebra In Sulfide I Rhizosp e of Redu ron Redu Soils (C6 xplain in	) ates (B13) Odor (C1) heres (C3) uced Iron (C uction in	4)	Secondary II Wate Sedi Crain Drain Drain Drain Drain Cray Satu Aeri Shal FAC	ndicators (2 or more required er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible on al Imagery (C9) low Aquitard (D3) Netural Test (D5)
Hydrology         Wetland Indicators         Primary Indicators (Any one indicator is sufficient	ent) Salt Cru Biotic Cr Aquatic Hydroge Oxidized Presence Recent I Plowed Other (E Depth (inches Depth (inches	st (B11) rust (B12) Invertebra In Sulfide I Rhizosp e of Redu Soils (C6 xplain in	) ates (B13) Odor (C1) heres (C3) uced Iron (C uction in ) Remarks)	4) Wetland H	Secondary II Wate Sedi Sedi Drift Drain Dry-1 Thin Cray Satu Aeri Shall FAC lydrology? Ye fringe)	ndicators (2 or more required er Marks (B1) (Riverine) ment Deposits (B2) (Riverine) Deposits (B3) (Riverine) mage Patterns (B10) Season Water Table (C2) Muck Surface (C7) fish Burrows (C8) ration Visible on al Imagery (C9) low Aquitard (D3) Netural Test (D5)

	North State Resources				Habitat Type SHROB ISLAND
	Wetland Determination Data Form - Arid W				Wetland Type UPLAND
	Project/Site: <u>Sisk Dam Corrective Action Project</u> Applicant/Owner: <u>U.S. Bureau of Reclamation</u>	_	_ City/Coun	ly: <u>Merced</u>	I County       Sampling Date: 9/18/09         State:       CA         Sampling Point:       9/28
	Investigator(s):J. Colescott Landform (hillslope, terrace, etc.) $\frac{1}{H}$ $1005106$ Subregion (LRR)RR-C Are climatic/hydrologic conditions on the site typical for this to Are vegetation $N$ , soil $N$ , or hydrology $N$ significant for the site vegetation $N$ , soil $N$ , or hydrology $N$ natural	ime of year cantly distu	Local rel bil Map Unit ? <u>465</u> rbed? Are n	lief (concave Name: <u>A 5</u> ( <i>If no, explain</i> cormal circun	n in remarks.) MES MES
	Summary of Findings (Attach site map showing Hydrophytic vegetation? NO Hydric soil? NO Weth	sampling p land hydrolo	or tocation	is, transects, Is sample	important features, etc.) d area a wetland? <u>NO</u> Other waters? <u>NO</u>
	USACE Jurisdiction Adjacent to Waters Tributary to Waters Isolate Explain:				
	Evaluation of features designated "Ot Indicators: Defined bed and bank Scour Feature Designation: Perennial Intermittent Ep Vatural Drainage Artificial Drain	Ordir	nary High W	ater Mark Mark Mark Mark Mark	apped
	Remarks SMALL SHEOB ISLAND W/I WEILAND INDICATORS WEI		AGE	WAS A	- SUSPECT SEEP NO
	Vegetation Tree Stratum (use scientific names)	Absolute <u>% Cover</u>		Indicator Status	Dominance Test Worksheet Number of dominant species that are OBL, FACW, or FAC: (A)
	2				Total number of dominant species Z (B)
SILVER	50%= Total Cover: Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status	Percent of dominant species that are OBL, FACW, or FAC:
BEREY	1. Shepherdia argentae 2. Sambueurs mexicana 3.			FAC	Prevalence Index Worksheet         Total % Cover of:       Multiply by         OBL Species       x1 =
	4 50%= Total Cover:				FACW Species x 2 =
	Herb Stratum (use scientific names) 1		Species?		FACU Species x 4 =
	2	· <u></u>	<u></u>		UPL Species         x 5 =           Column Totals         (A)           Prevalance Index = B/A =         (B)
	4				Hydrophytic Vegetation Indicators
	6			10	Dominance Text is >50%         Prevalence Index is ≤ 3.01         Morphological Adaptations1 (provide supporting data in Remarks or on a separate sheet)
	Woody/Vine Stratum (use scientific names)	% Cover			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.
. ÷.,	2 20%= Total Cover:	 <u>à</u> :	· · · · · ·		Hydrophytic Vegetation?
	% Bare Ground in Herb Stratum 100 % Cover of Biot	ic crust		2	

- 10 <sup>11</sup>

Depth <u>Matrix</u> inches) <u>Color (moist) %</u>	Redox Features Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
1-6 10YR 2/2 100	<u> </u>				STON Y	CUTY	
			·				
ypes: C = Concentration D = Depletion RM =			Location: PL		<u> </u>	oot Channe	
ydric Soil Indicators: (Applicable to all				<u> </u>		Transa and the	atic Hydric Soils <sup>3</sup>
Histosol (A1)	and the second se	- 10 - Lee	Matrix (S4)		10 C C C C C C C C C C C C C C C C C C C		49) (LRR C)
Histic Epipedon (A2)	and the second	Redox (S	and the second				410) (LRR B)
Black Histic (A3)		d Matrix (				duced Vel	
Hydrogen Sulfide (A4)			lineral (F1)				Materials (TF2)
Stratified Layers (AG) (LRR C)	Loamy						and/Gravel Bars
1 cm Muck (A9) (LRR D)		d Matrix			Ot	her (Expla	in in Remarks)
Depleted Below Dark Surface (A11)			face (F6)		a	<b>1 1 1</b>	
Thick Dark Surface (A12)			Surface (F7)				phytic vegetation and nust be present.
Sandy Mucky Mineral (S1)		Depressio			Weddididi	yarology i	dat be precent
	Manual F	Doole (EO	2)				
	Vernal F	0015 (1-5	<i>''</i>				
Remarks NON HYDRIC SOIL			nches)	Hydric	Soil? _/	<u>JO</u>	
Remarks NON HYDRIC Son Hydrology Vetland Indicators	 LS			<u></u>		200	: (2 or more required
Remarks NON HYDRIC SOID Hydrology Vetland Indicators Primary Indicators (Any one indicator is sufficient	ent).	Depth (Ir		<u></u>	Secondary	Indicators	(2 or more required (B1) (Riverine)
Remarks NON HYDRIC Sond Hydrology Vetland Indicators	ent).	Depth (In	nches)	<u></u>	Secondary	Indicators	(B1) (Riverine)
Remarks NON HYDRIC 5010 Hydrology Vetland Indicators Primary Indicators (Any one indicator is sufficient Surface Water (A1)	ent). Salt Crus	Depth (In st (B11) ust (B12)	)	<u></u>	Secondary	Indicators ater Marks diment De	(B1) (Riverine) posits (B2) (Riverine
Remarks NON HYDRIC Sold Hydrology Vetland Indicators mmary Indicators (Any one indicator is sufficient Surface Water (A1) High Water Table (A2) Saturation (A3)	ent).	Depth (In st (B11) ust (B12)	) ates (B13)	<u></u>	Secondary Wa Se Dri	Indicators ater Marks diment De ft Deposits	(B1) (Riverine)
Remarks NON HYDRIC 5010 Hydrology Vetland Indicators Primary Indicators (Any one indicator is sufficient Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine)	ent). Salt Crus Biotic Cr Aquatic I Hydroge	Depth (In st (B11) ust (B12) Invertebr n Sulfide	)	<u></u>	Secondary Wa Se Dri Dri	Indicators ater Marks diment De ft Deposits ainage Pa	(B1) (Riverine) posits (B2) (Riverine s (B3) (Riverine)
Remarks NON HYDRIC 5010 Hydrology Vetland Indicators Primary Indicators (Any one indicator is sufficient Surface Water (A1) High Water Table (A2) Saturation (A3)	ent). Salt Crus Salt Crus Biotic Cr Aquatic I Hydroge Oxidized	Depth (In st (B11) ust (B12) Invertebri n Sulfide Rhizosp	) rates (B13) e Odor (C1)	· · · · · · · · · · · · · · · · · · ·	Secondary Wa Se Dri Dra Dry	Indicators ater Marks diment De ft Deposits ainage Par y-Season	(B1) (Riverine) posits (B2) (Riverine s (B3) (Riverine) tterns (B10)
Remarks NON HYDRIC 5010 Hydrology Netland Indicators Primary Indicators (Any one indicator is sufficient Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine)	ent). Salt Crus Salt Crus Biotic Cr Aquatic I Hydroge Oxidized	Depth (In st (B11) ust (B12) Invertebr n Sulfide Rhizosp e of Redu	) ates (B13) Odor (C1) oheres (C3) uced Iron (C	· · · · · · · · · · · · · · · · · · ·	Secondary Wa Se Dri Dri Dri Thi	Indicators ater Marks diment De ft Deposits ainage Par y-Season	(B1) (Riverine) posits (B2) (Riverine s (B3) (Riverine) terns (B10) Water Table (C2) urface (C7)
Remarks NON HYDRIC 5010 Hydrology Vetland Indicators Primary Indicators (Any one indicator is sufficient Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6)	ent). Salt Crus Biotic Cr Aquatic I Hydroge Oxidized Presence Recent I	Depth (In st (B11) ust (B12) Invertebr n Sulfide Rhizosp e of Redu	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in	· · · · · · · · · · · · · · · · · · ·	Secondary Wa Se Dri Dri Thi Thi Cri	Indicators ater Marks diment De ft Deposits ainage Pai y-Season V in Muck St	(B1) (Riverine) posits (B2) (Riverine s (B3) (Riverine) terns (B10) Water Table (C2) urface (C7) rows (C8)
Remarks NON HYDRIC 5010 Hydrology Vetland Indicators Primary Indicators (Any one indicator is sufficient Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on	ent) Salt Crus Salt Crus Biotic Cr Aquatic I Aquatic I Hydroge Oxidized Presence Recent In Plowed	Depth (In st (B11) ust (B12) Invertebr n Sulfide Rhizosp e of Redu Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in	· · · · · · · · · · · · · · · · · · ·	Secondary Wa Se Dri Dri Dri Thi Cra Sa	Indicators ater Marks diment De ft Deposits ainage Pai y-Season V in Muck Si ayfish Burn	(B1) (Riverine) posits (B2) (Riverine) s (B3) (Riverine) tterns (B10) Water Table (C2) urface (C7) rows (C8) sible-on
Remarks NON HYDRIC 5010 Hydrology Vetland Indicators Primary Indicators (Any one indicator is sufficient Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7)	ent) Salt Crus Salt Crus Biotic Cr Aquatic I Aquatic I Hydroge Oxidized Presence Recent In Plowed	Depth (In st (B11) ust (B12) Invertebr n Sulfide Rhizosp e of Redu Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in	· · · · · · · · · · · · · · · · · · ·	Secondary Se Se Dri Dri Dri Cri Cri Sa Ae	Indicators ater Marks diment De ft Deposits ainage Pal y-Season y-	(B1) (Riverine) posits (B2) (Riverine) s (B3) (Riverine) terns (B10) Water Table (C2) urface (C7) rows (C8) sible on ry (C9) tard (D3)
Remarks NON HYDRIC 5010 Hydrology Vetland Indicators Primary Indicators (Any one indicator is sufficient Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	ent) Salt Crus Salt Crus Biotic Cr Aquatic I Aquatic I Hydroge Oxidized Presence Recent In Plowed	Depth (In st (B11) ust (B12) Invertebr n Sulfide Rhizosp e of Redu Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in	· · · · · · · · · · · · · · · · · · ·	Secondary Se Se Dri Dri Dri Cri Cri Sa Ae	Indicators ater Marks diment De ft Deposits ainage Pal y-Season V in Muck Si ayfish Burn turation Vi erial Image	(B1) (Riverine) posits (B2) (Riverine s (B3) (Riverine) terns (B10) Water Table (C2) urface (C7) rows (C8) sible on ry (C9) tard (D3)
Remarks NON HYDRIC 5010 Hydrology Netland Indicators Primary Indicators (Any one indicator is sufficient Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	ent) Salt Crus Salt Crus Biotic Cr Aquatic I Aquatic	Depth (In st (B11) ust (B12) Invertebr n Sulfide Rhizosp e of Redu Soils (C6	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in	· · · · · · · · · · · · · · · · · · ·	Secondary Se Se Dri Dri Dri Cri Cri Sa Ae	Indicators ater Marks diment De ft Deposits ainage Pal y-Season y-	(B1) (Riverine) posits (B2) (Riverine) s (B3) (Riverine) tterns (B10) Water Table (C2) urface (C7) rows (C8) sible on ry (C9) tard (D3)
Hydrology         Metland Indicators         Primary Indicators (Any one indicator is sufficient)	ent) Salt Crus Salt Crus Biotic Cr Aquatic I Aquatic	Depth (In st (B11) ust (B12) Invertebr n Sulfide Rhizosp e of Redu ron Redu Soils (C6 xplain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in	4)	Secondary Se Se Dri Dri Dri Cri Cri Sa Ae	Indicators ater Marks diment De ft Deposits ainage Pai y-Season y-	(B1) (Riverine) posits (B2) (Riverine s (B3) (Riverine) terns (B10) Water Table (C2) urface (C7) rows (C8) sible on ry (C9) tard (D3)
Remarks NON HYDRIC 5010 Hydrology Netland Indicators Primary Indicators (Any one indicator is sufficient Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) ield Observations	ent) Salt Crus Salt Crus Biotic Cr Aquatic I Aquatic I Oxidized Oxidized Presence Recent Is Plowed Other (E	Depth (In st (B11) ust (B12) Invertebr n Sulfide Rhizosp e of Redu ron Redu Soils (C6 xplain in	) ates (B13) Odor (C1) oheres (C3) uced Iron (C uction in	4)	Secondary Wa Se Dri Dri Dri Thi Sa Sa Sh FA	Indicators ater Marks diment De ft Deposits ainage Pai y-Season y-	posits (B2) (Riverine s (B3) (Riverine) tterns (B10) Water Table (C2) urface (C7) rows (C8) sible on ry (C9) tard (D3)

North State Resources				Habitat Type QUARRY
Wetland Determination Data Form - Arid	West Reg	ion		Wetland Type UPLAND
Project/Site:Sisk Dam Corrective Action Project		_ City/Coun	ty: <u>Mercec</u>	I County Sampling Date: 1
Applicant/Owner:U.S. Bureau of Reclamation				State: <u>CA</u> Sampling Point:
Investigator(s):				- 0
Landform (hillslope, terrace, etc.)		Local re	lief (concave	, convex, none) Slope % 4
Subregion (LRR)	So	Nap Unit	Name:	
Are climatic/hydrologic conditions on the site typical for this Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ sign	s time of year	tod2 Aron	(If no, explai	n in remarks.)
Are vegetation $\underline{N}$ , soil $\underline{N}$ , or hydrology $\underline{N}$ natu				
Summary of Findings (Attach site map showin				
Hydrophytic vegetation? <u>NO</u> Hydric soil? <u>NO</u> We	etland hvdrold	on location	> is sample	d area a wetland? <u>NO</u> Other waters? <u>NO</u>
USACE Jurisdiction				
Adjacent to Waters Isola	ated (with inte	erstate comr	nerce)	_ Isolated (non junisdictional)
Explain:				
Evaluation of features designated "O Indicators: Defined bed and bank Scour	ordin	ters of t	he Unite	ed States"
Feature Designation. Perennial Intermittent I	Ephemeral	Blue-li	ne on USGS	Quad
Natural Drainage Artificial Dra				-
Remarks CONSIDERED A "P IN SEVERAL MINOR DEPRES	ODDLE	". F	FUST	QUAREY AREA PUDDLES
IN SEVERAL MINOR DEPRES	SIONS	. NC	of con	SIDREED A WEILAND
JO A LACK OF DOMINANT HY SOILS.	DROPH	YNES	AND	NO DEVELOPED HYDRIC
	Absolute	Dominan	t Indicator	Dominance Test Worksheet
Vegetation Tree Stratum (use sciențific names)	Absolute <u>% Cover</u>		t Indicator Status	Dominance Test Worksheet Number of dominant species
Vegetation				
Vegetation Tree Stratum (use scientific names) 1 2				Number of dominant species that are OBL, FACW, or FAC: (A Total number of dominant species
Vegetation           Tree Stratum (use scientific names)           1.           2.           3.	<u>% Cover</u>			Number of dominant species that are OBL, FACW, or FAC:       2       (#         Total number of dominant species across all strata:       (#
Vegetation           Tree Stratum (use scientific names)           1.           2.           3.           50%=           20%=           Total Cove	% Cover	<u>Species?</u>	<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       2       (#         Total number of dominant species across all strata:       (#         Percent of dominant species that       ~
Vegetation         Tree Stratum (use scientific names)         1.         2.         3.         50%=20%=Total Cove         Sapling/Shrub Stratum (use scientific names)	<u>% Cover</u>		<u>Status</u>	Number of dominant species that are OBL, FACW, or FAC:       2       (#         Total number of dominant species across all strata:       4       (#         Percent of dominant species that are OBL, FACW, or FAC:       50       (#
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Remarks LLEAR ENDENCE OF PONDING

# **APPENDIX B**

Representative Photographs August 31 to September 18, 2009



Photograph 1. Cover photograph. Looking southwest from the eastern edge of the study area, south of State Route 152 and Gonzaga Road. Visible in the photograph is the dam, the seep wetlands at the base of the dam, and Basalt Hill Road.



Photograph 2. To provide a sense of scale, this view is from the top of the dam looking northeast. The seep wetlands described in the photographs that follow can be seen as the narrow string of trees and darker vegetation just beyond the straight gravel road in the sunny portion of the photograph.



Photograph 3. Seepage wetlands occur in the lands east of the foot of the dam. Starting at the south end of the dam, data point 14 (shovel) documents the first of a series of wetland features (FEW10) created from dam seepage. These wetland features are connected via a series of ditches that help to convey the waters to O'Neill Forebay. The next several photographs depict several of the wetland features and ditches that convey these waters.



Photograph 4. Looking southeast at the north end of FEW9, another seep wetland in the complex mentioned in Photograph 3. The photograph is taken from a low bench near the eastern foot of the dam.



Photograph 5. Data point 5 located on the western edge of FEW9. The data point is located at the base of a small rise at the abrupt upland boundary to the wetland feature. Note the dense cattail understory and red willow overstory.



Photograph 6. Looking west at FEW9, data points 6 (shovel in background) and 7 (backpack) document the eastern edge of the FEW9 feature. The data points are located south of the point Photograph 4 was taken from (see Figure 4c).



Photograph 7. Looking northeast from approximately 0.1 mile north of the point Photograph 4 was taken from. The darker vegetation between the toe of the slope and the pickup truck is the wetland feature (SW4) associated with the conveyance of dam seepage. Data points 1 and 2 are located just out of the photograph to the right.



Photograph 8. Data points 1 (shovel) and 2 (backpack) document the seasonal wetland (SW4) and adjacent upland, respectively.



Photograph 9. Data points 21 and 22 document the seasonal wetland (SW6) and adjacent upland, respectively, that occurs at the northern boundary of the central portion of the study area (see Figure 4c). The feature extends beyond the boundaries of the study area and functions as a collection area for runoff of precipitation and dam seepage that occurs east of the dam. SW4, SW6, and SW20 are part of the same large seasonal wetland.



Photograph 10. Looking northwest at D8. This ditch is the main outflow conveyance feature of the seepage collected in the wetlands and ditch features pictured above. This ditch flows north to O'Neill Forebay. The channel width at this point is estimated at 8 feet, based on weak indicators of an ordinary high water mark.



Photograph 11. Data point 15 (shovel) documents a small fresh emergent wetland (FEW4) located on the north side of the dam in the north western portion of the study area. This feature is also a seep wetland and a number of ditches (e.g., D12) help to convey these waters to the O'Neal Forebay.



Photograph 12. Data point 16 documents a ditch (D10) that conveys seepage waters toward O'Neill Forebay on the north side of the dam.



Photograph 13. A number of seasonal wetlands occur east of the dam. This photograph of SW32 shows the feature's close proximity to FEW9. Data point 11 (backpack) documents the feature, and data point 10 (shovel) documents the adjacent uplands.



Photograph 14. Data points 19 (shovel) and 20 (GPS unit) document the boundaries of SW22. As is evident in the photograph, the boundary is very subtle. In this case, hydric soil indicators were observed at both points, but the vegetation and hydrology indicators were missing from the upland point.



Photograph 15. Data point 23 documents another small seasonal wetland (SW24). Each of the seasonal wetland features that occur east of the dam are depressional, and the three wetland parameters are evident, but it is not certain whether dam seepage plays a role in their hydration. As depressional features, they may only be hydrated during winter precipitation events.



Photograph 16. The soils at data point 23 show the prominent redox features.



Photograph 17. Data point 28 (shovel) documents upland conditions in a suspect wetland located north of State Route 152. The aerial photograph of the study area shows a drainage-like feature here. This data point was installed at the low point of the feature, but no wetland parameters were met.



Photograph 18. Data point 31 documents the seasonal wetland (SW19) that occurs in a very shallow depression in the portion of the study area north of State Route 152. The indicators are weak, but sufficient for the feature to be considered a wetland.



Photograph 19. Several ephemeral drainages exit the hills surrounding the study area. Here, DP 43 documents this 2-foot wide ephemeral drainage (ED5). Although annual upland vegetation has colonized the feature, and the soils are not hydric, the bed and bank feature with evidence of scour and deposition qualifies as an "other waters" of the United States.



Photograph 20. The incised channel of ED5 is more pronounced on the west side of Basalt Hill Road.



Photograph 21. Data point 47 documents another small ephemeral drainage (ED3). Similar to ED5, upland vegetation has colonized this drainage, but strong evidence of scour and deposition, and a pronounced bed and bank qualify this feature as an "other waters".



Photograph 22. Data point 46 documents the San Luis Reservoir below the full pool elevation. The dam can be seen in the background, and a temporary road in the foreground. Scattered debris has been trapped within the stems of the shrub (seep willow) growing along the upper water mark and other indicators help to define the "bathtub ring" at full pool elevation.



Photograph 23. Another view of the lake bottom documented by data point 46 (shovel in background).



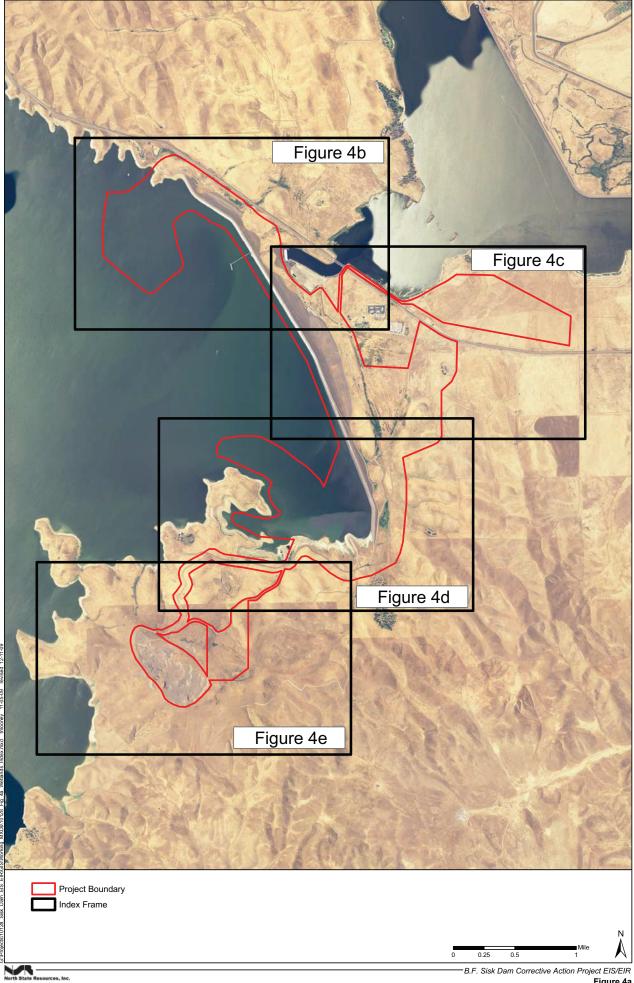
Photograph 24. This photograph shows the single "mixed chaparral" stand of silver buffaloberry. The species is not a wetland indicator, but there is a small ephemeral drainage leading from it. Data point 48 documents that the three wetland parameters were met within the stand. Also visible in the photograph is the "mud slide area" depicted on Figure 4e. Although small rivulets are visible within the mud slide, they are a remnant of the slide and are not considered waters.



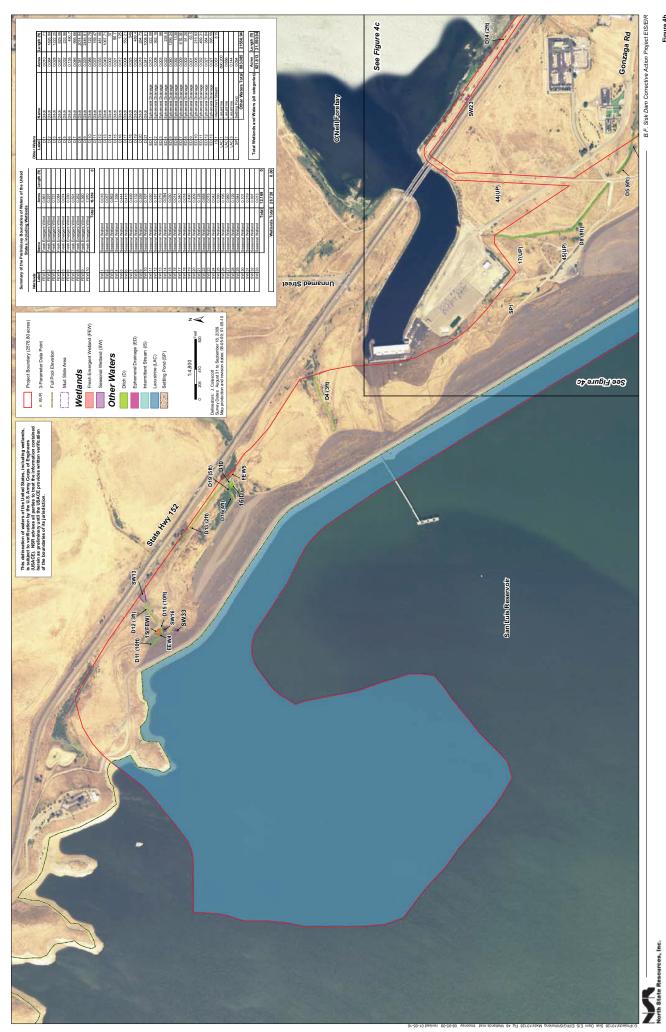
Photograph 25. Data point 49 documents that the small "puddles" that have formed within the quarry on top of Basalt Hill are not wetlands. The features are almost devoid of vegetation, the soil layer is very thin on top of rock, with no hydric soil indicators. Only the wetland hydrology parameter is met (see data sheet 49).

### **APPENDIX C**

Figures 4a – 4e Preliminary Boundaries of Waters of the United States, Including Wetlands



B.F. Sisk Dam Corrective Action Project EIS/EI Figure 4a Preliminary Boundaries of Waters of the United States, Including Wetlands Sheet Index



Preliminary Boundaries of Waters of the United States, including Wetlands

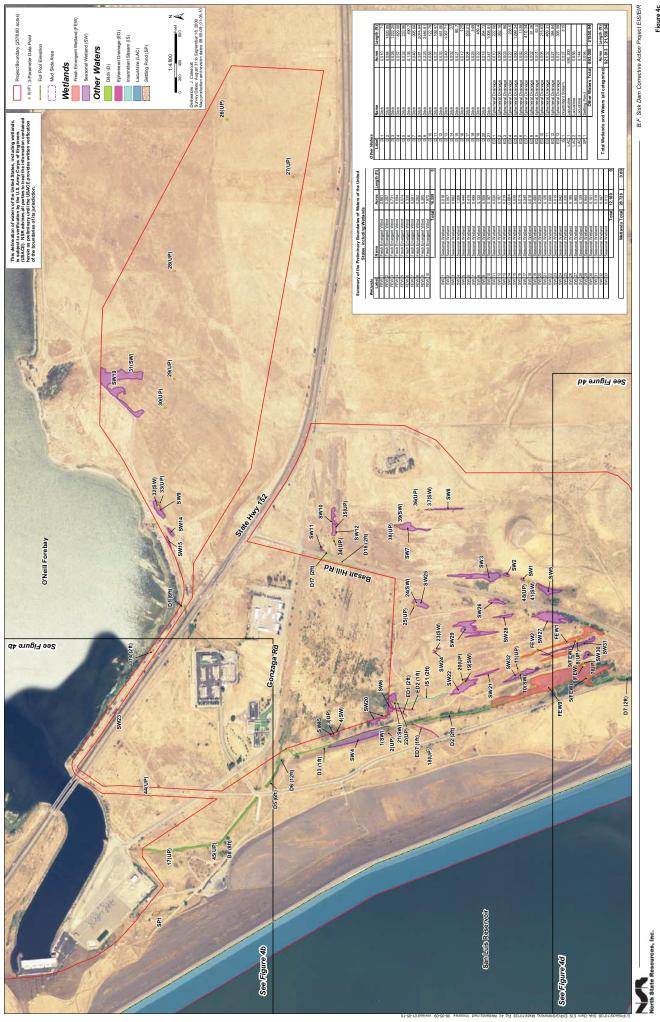


Figure 4c Feliminary Boundaries of Waters of the United States, including Wetlands

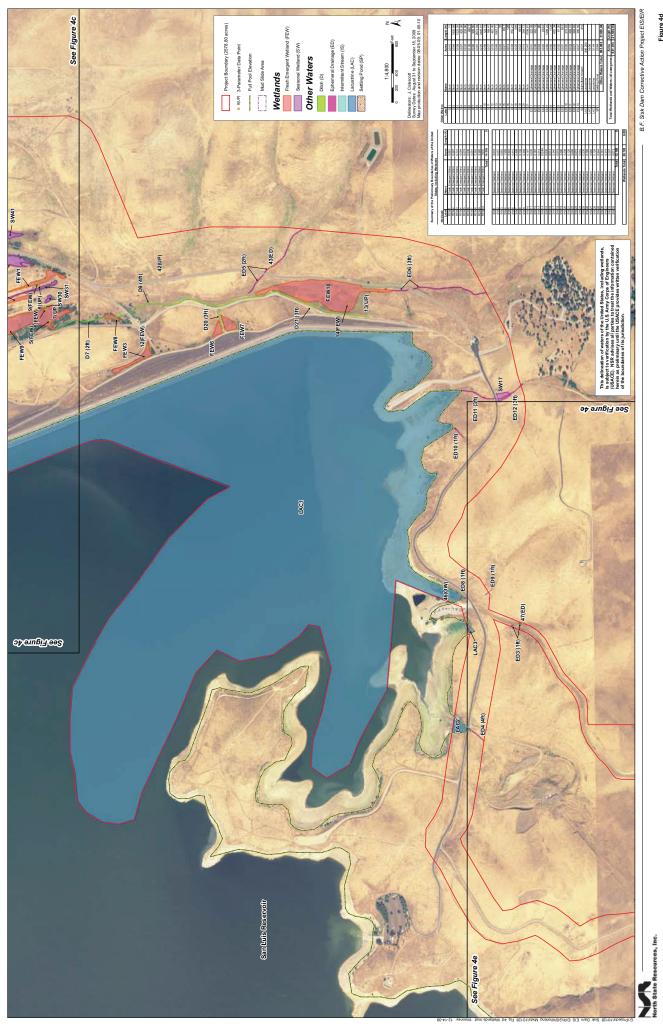
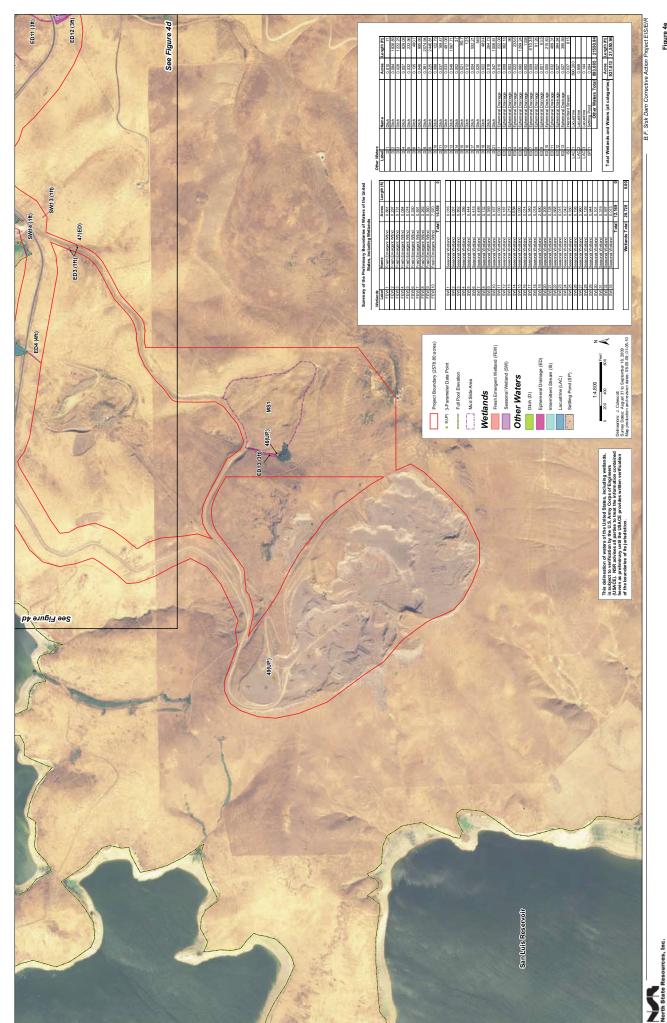


Figure 4d Preliminary Boundaries of Waters of the United States, including Wetlands





# B.F. Sisk Dam Corrective Action Project San Joaquin Kit Fox Early Evaluation Report

B.F. Sisk Dam Central Valley Project, California



March 2010



U.S. Department of the Interior Bureau of Reclamation



State of California Department of Water Resources

# Mission of the Bureau of Reclamation

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.

### Department of Water Resources Mission Statement

To manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments.

# B.F. Sisk Dam Corrective Action Project San Joaquin Kit Fox Evaluation Report

B.F. Sisk Dam Central Valley Project, California

**Prepared by:** 



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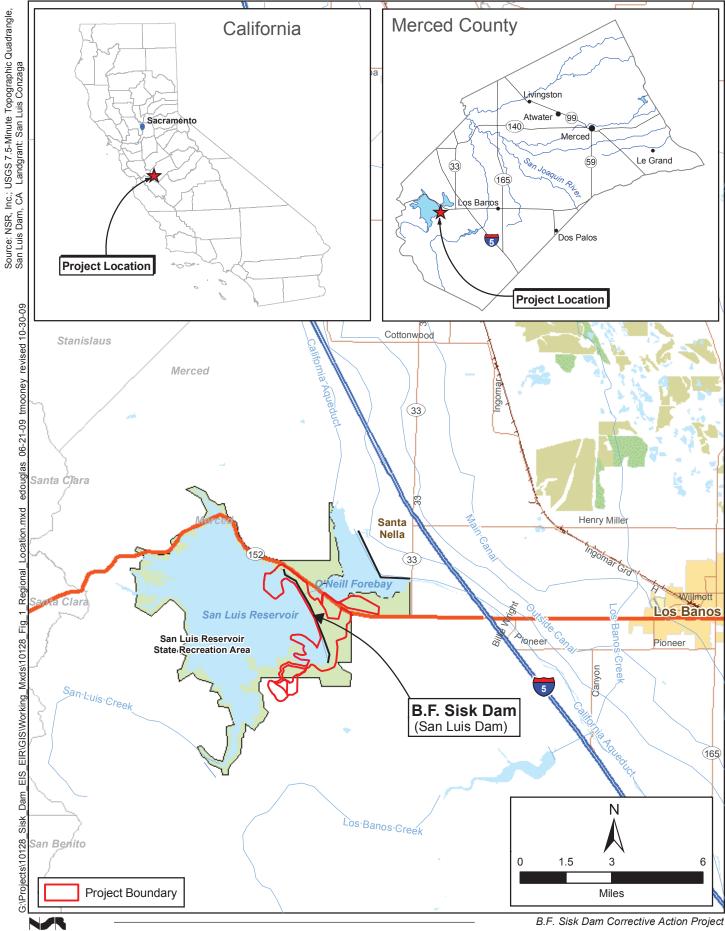
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### Chapter 1 Introduction

This report presents the findings of an Early Evaluation for San Joaquin kit fox (*Vulpes macrotis mutica*) conducted for the B.F. Sisk Dam Corrective Action Project (project). This report is intended to provide background information to the U.S. Fish and Wildlife Service (Service) to facilitate its evaluation of the project's potential impacts on the San Joaquin kit fox. This Early Evaluation was developed in accordance with the guidelines provided in *U.S. Fish and Wildlife Service San Joaquin Kit Fox Survey Protocol for the Northern Range* (U.S. Fish and Wildlife Service 1999).

The project site (Figure 1) is located on the west side of California's Central Valley, near the community of Santa Nella, approximately 12 miles west of Los Banos. It is located in the *San Luis Dam, California* 7.5-minute U.S. Geological Survey quadrangle.



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Figure 1 **Project Location** 

### Chapter 2 Project Description

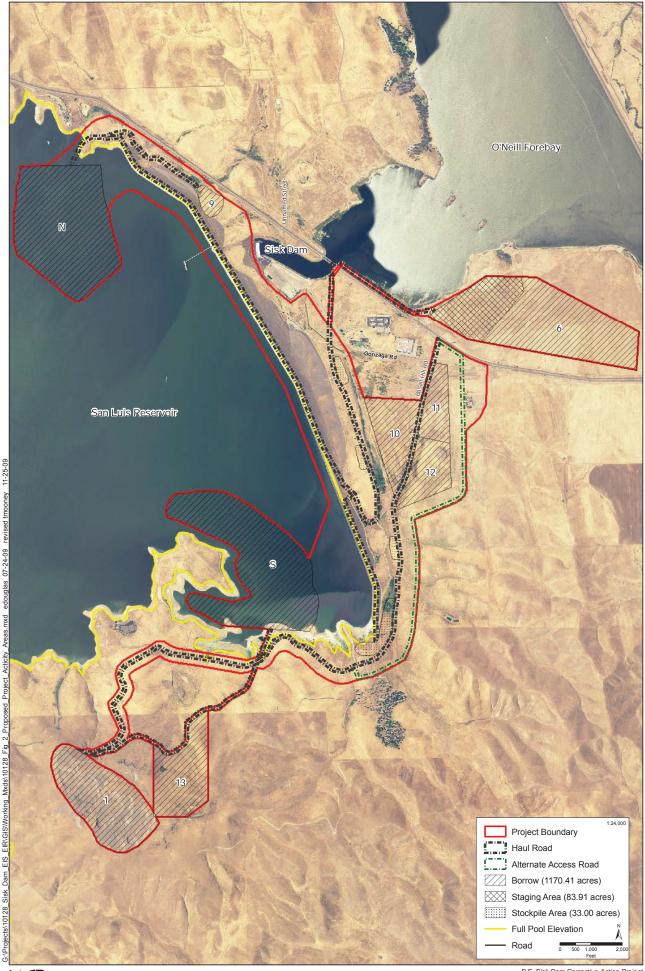
Sisk Dam is part of the San Luis Joint-Use Complex, which was designed and constructed by the federal government and is operated and maintained by the California Department of Water Resources (DWR). The complex was constructed to provide supplemental irrigation water storage for the federal Central Valley Project (CVP) and storage of municipal and industrial water for the California State Water Project (SWP).

The dam impounds San Luis Reservoir, which, with a total water storage capacity of more than 2 million acre-feet, is one of the largest off-channel storage facilities in the country and a key component of the water supply system in California. Water is lifted into the reservoir for storage by the Gianelli Pumping–Generating Plant from the California Aqueduct and is diverted from the Delta-Mendota Canal via O'Neill Forebay.

The dam and reservoir are located in an area of high potential for severe earthquake loading from active faults. A recent series of studies and analyses, including a probabilistic seismic analysis completed in 2006, determined that corrective actions were justified at Sisk Dam to reduce risk to the downstream public. The Bureau of Reclamation (Reclamation) and DWR seek to mitigate potential safety concerns identified in previous and ongoing studies by modifying water retention structures at Sisk Dam in order to reduce the seismic, static, and hydrologic risk.

The project will involve two main components: stability berms (buttresses) and a dam raise. Project construction will require a large amount (on the order of between 2 million and 20 million cubic yards) of earth material, all of which would be obtained from a number of borrow sites within the project boundary (Figure 2).

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#### B.F. Sisk Dam Corrective Action Project San Joaquin Kit Fox Early Evaluation Report

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### Chapter 3 San Joaquin Kit Fox Sighting Records in the Project Region

The presence of kit foxes in western Merced County is well documented (e.g., Archon 1992; U.S. Fish and Wildlife Service 1998; California Department of Fish and Game 2009). However, the actual population status of kit foxes in the region is less well understood. The results of a study focused on the conservation of kit foxes in western Merced County (Constable et al. 2009) indicate that kit foxes are not homogeneously distributed throughout western Merced County; rather, there appears to be a pronounced ecological continuum, with kit foxes being consistently present in the south and intermittently present in the north. The authors concluded that the consistent detections in the south suggest that a resident population may be present whereas the infrequent detections in the north suggest that foxes in this area may be transients. The boundary between these two situations appears to coincide roughly with State Route 152. The results of this study are consistent with findings from previous studies and survey efforts (Archon 1992; Smith et al. 2006).

As shown in Figure 3, the California Natural Diversity Database (CNDDB) contains numerous records of kit fox within 10 miles of the project site. These occurrences primarily occur to the east of the project site, with a few occurrences to the northeast (California Department of Fish and Game 2009). One occurrence is located within the project boundary. This occurrence (CNDDB Occurrence #875) was documented in 1975. All CNDDB documented occurrences in the project region are listed in Table 1.

CNDDB Occurrence Number	Distance from Project Site (miles)	Direction from Project Site	Year Observed
27	3.36	east	2001
46	3.65	east	2001
120	0.81	east	1994
121	2.80	north	1994
122	3.74	north	1994
123	2.33	east	1994
124	3.64	east	1994
125	2.87	south	2005
126	2.87	east	1994

# Table 1. Documented CNDDB San Joaquin Kit Fox Occurrences in the Project Region

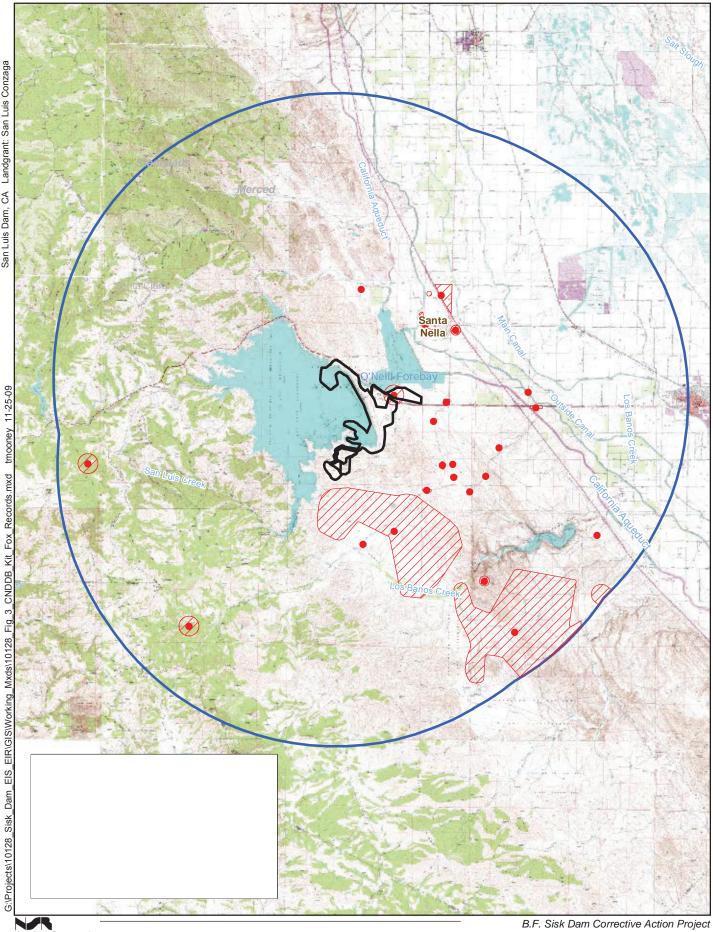
#### B.F. Sisk Dam Corrective Action Project San Joaquin Kit Fox Early Evaluation Report

CNDDB Occurrence Number	Distance from Project Site (miles)	Direction from Project Site	Year Observed
127	2.26	east	2005
129	2.56	east	1994
145	8.45	southeast	2003
183	4.30	east	1997
184	4.00	east	1998
211	2.63	south	2005
550	0.94	east	1989
551	2.82	northeast	1989
587	8.25	southeast	198?
603	2.47	north	1986
609	6.24	southeast	1987
874	7.71	southwest	1971
875	within project boundary	n/a	1975
1028	8.85	west	1975

Constable et al. (2009) assessed kit fox presence and abundance in the project region using digital camera stations, track stations, spotlight surveys, and opportunistic observations (see Figures 4 and 5 for the locations of these camera stations, track stations, and spotlight surveys).

Camera stations were established at 61 sites, and 9,286 camera-nights were logged between April 2005 and August 2007. No kit fox observations were recorded on lands near the proposed project. Track stations were established at 76 locations and maintained for 1,041 nights. Kit foxes were detected at track stations in all areas, including three in the areas south of State Route 152. Twelve spotlight surveys were conducted between July 5, 2005, and March 3, 2007. Kit foxes were observed on five occasions within 10 miles of the proposed project site (see Figure 6).





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Figure 3 CNDDB Kit Fox Records

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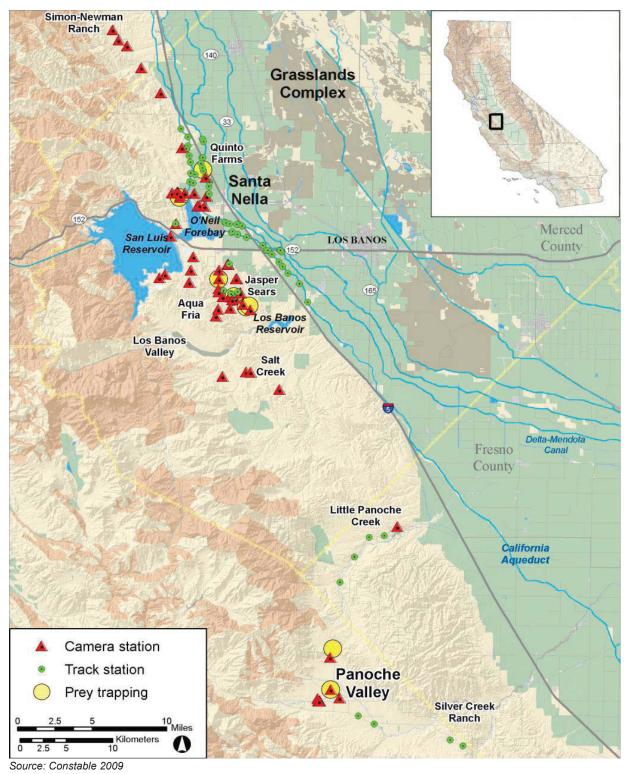
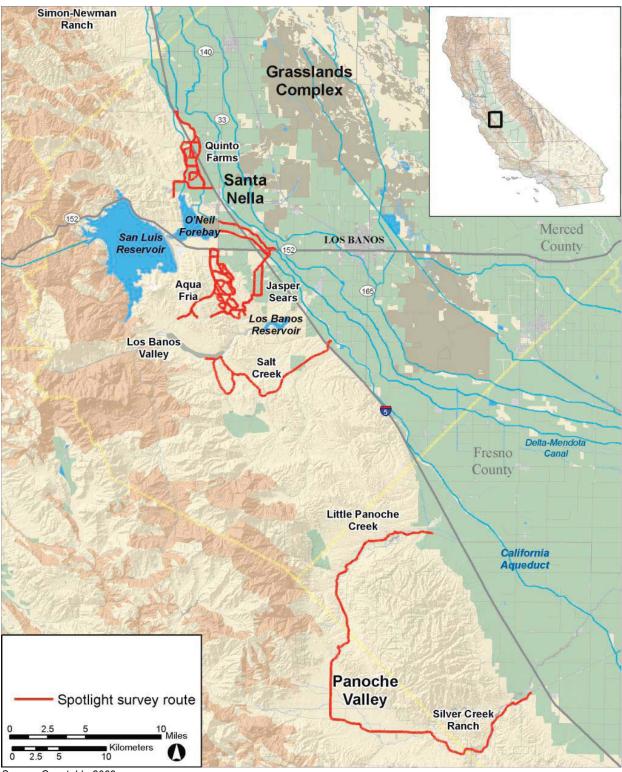


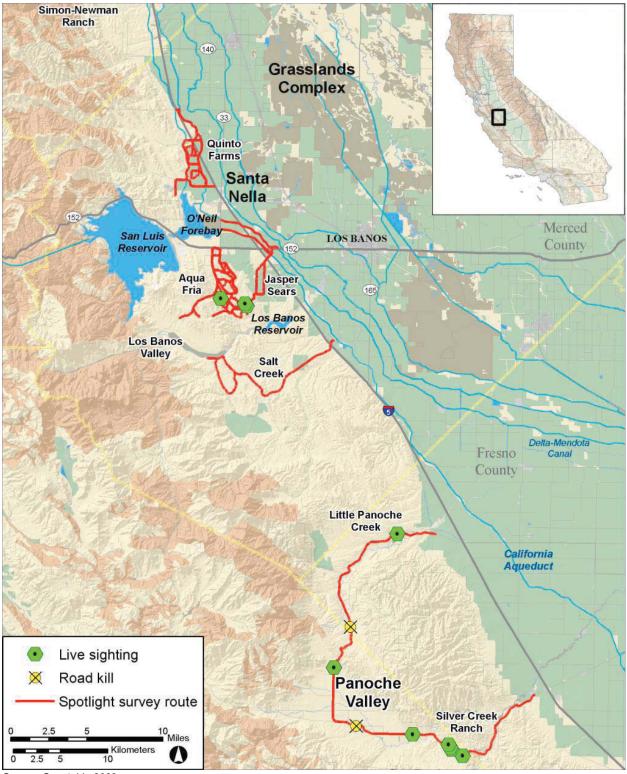
Figure 4 Locations of Previous Camera Stations, Track Stations, and Prey Trapping in the Santa Nella Area, California



Source: Constable 2009

Figure 5 Routes for Previous Spotlighting Surveys in the Santa Nella Area, California

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Source: Constable 2009

Figure 6 Locations of Kit Foxes Observed During Previous Surveys in the Santa Nella Area, April 2005–August 2007

### Chapter 4 Biological Characteristics of the Project Site

The topography of the site varies from relatively flat or gently rolling in the northeast section of the study area to steep and mountainous in the southwest. Elevation ranges between 230 feet above mean sea level (msl) near O'Neal Forebay to almost 1,600 feet above msl in the quarry near Basalt Hill. Fossorial mammals, including the American badger (*Taxidea taxus*) and California ground squirrel (*Spermophilus beecheyi*), were observed within the project boundary and burrows are present throughout the project site.

Many areas of the project site are open and undeveloped. However, there are several developed areas in and adjacent to the project boundaries to support water and recreation operations. The operations and maintenance facilities for DWR and the Four Rivers Sector of the Central Valley District of the California Department of Parks and Recreation are at Gonzaga Road, off State Route (SR) 152 at the base of Sisk Dam. This area is developed with the Gianelli Pumping-Generating Plant (operated by DWR) administrative offices, maintenance garages, and work areas. Other developed areas include the Basalt Use Area to the south of the Gonzaga Road entrance, which contains camp sites, a picnic area, boat ramp, and parking. Nearby is the boat launching area for San Luis Reservoir. A quarry, used for gravel extraction during the construction of the dam, is located at the southeast corner of San Luis Reservoir. The quarry is used by DWR for any facilities repairs on DWR's systems (e.g., dam and canal). The California Department of Forestry and Fire Protection operates a fire protection station east of the State Recreation Area Administrative Offices, south of Gonzaga Road.

Habitats within the project boundary were characterized based on descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988). Annual grassland is the most dominant habitat type within the project site; however, there is a wide diversity between stands in this broad category. In addition to annual grassland, the following six habitat types were mapped within the site: alkali desert scrub, barren, coastal scrub, fresh emergent wetland, mixed chaparral, and valley foothill riparian. The characteristics of these habitats are discussed below and their locations are depicted in Figure 7.

### 4.1 Annual Grassland

Annual grassland habitat is the dominant terrestrial habitat occurring within the project boundary and is dominated by non-native annual grasses and forbs. This habitat occurs on all the soil map units and the land types present on the

site, with minor differences in species composition based on location. The dominant non-native grasses include wild oats (*Avena barbata*), ripgut brome (*Bromus diandrus*), and soft chess (*Bromus hordeaceus*). The dominant non-native forbs include black mustard (*Brassica nigra*) and broad-leaved pepperweed (*Lepidium latifolium*). These dominants are representative of nearly all of the areas mapped as annual grassland, except for areas adjacent to and within the intermittent drainages along the toe of Sisk Dam, including much of Borrow Area 10. On the steep hillsides to the south of the reservoir, the native forb hayfield tarweed (*Hemizonia congesta*) is also relatively abundant.

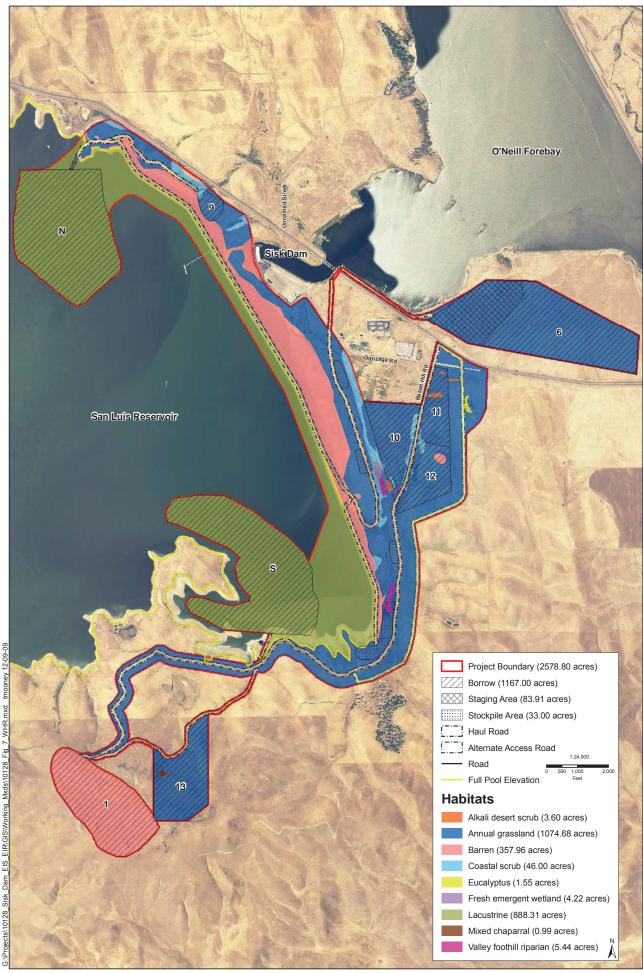
The annual grassland within the intermittent drainages along the toe of Sisk Dam has the greatest diversity of native plants and the greatest concentration of broad-leaved pepperweed. Non-natives present in these more mesic areas include Mediterranean barley (*Hordeum marinum* ssp. gussoneanum), curly dock (*Rumex crispus*), horehound (*Marrubium vulgare*), and cocklebur (*Xanthium strumarium*). Native grasses and forbs are a minor component in the annual grassland as a whole, but are most abundant in the more mesic areas. Natives include vinegar weed (*Trichostema lanceolatum*), salt heliotrope (*Heliotropium curassavicum*), purple needle grass (*Nassella pulchra*), and gum plant (*Grindelia camporum*).

### 4.2 Alkali Desert Scrub

Alkali desert scrub habitat occurs as scattered clusters and moderately dense linear stands along intermittent drainages and portions of the reservoir shorelines. This habitat is distinguished by near monotypic stands of big saltbush (*Atriplex lentiformis*). The largest and densest stand adjacent to the project area occurs along the southern shoreline (bank full) of the San Luis Reservoir. This stand includes hundreds of individuals of big saltbush that are concentrated at the base of a drainage and extend along the reservoir shoreline for approximately a quarter mile. The large stand of big saltbush near the toe of Sisk Dam is associated with adjacent stands of coyote bush and a lone honey mesquite (*Prosopis glandulosa* ssp. *torreyana*). Grasslands adjacent to alkali desert scrub stands have higher concentrations of salt heliotrope than the grasslands at large within the project site. Big saltbush, salt heliotrope, and honey mesquite are associated with the halophytic phase of the alkali scrub plant assemblage.

### 4.3 Barren

Barren habitat is comprised of the disturbed areas that have less than 2 percent total vegetative cover. Borrow Area 1 constitutes the largest barren habitat within the project site. A smaller barren area occurs where a hilltop has been removed and partially paved within Borrow Area 12.





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## 4.4 Coastal Scrub

Coastal scrub habitat is distinguished by dense stands of coyote bush (*Baccharis pilularis*). Big saltbush is a minor component of the coastal scrub habitat and occurs at the upper and drier edges of the coastal scrub habitat.

## 4.5 Valley Foothill Riparian

The valley foothill riparian habitat type is dominated by native trees, including Fremont cottonwood (*Populus fremontii* spp. *fremontii*), red willow (*Salix laevigata*), and black willow (*Salix gooddingii*). The dominant shrub in this habitat type is mule fat (*Baccharis salicifolia*), which forms dense stands surrounding the cottonwoods and willows.

## 4.6 Fresh Emergent Wetland

Fresh emergent wetland habitat occurs as inclusions in and adjacent to the wettest portions of the valley foothill riparian habitat. Fresh emergent wetland habitat is distinguished by dense stands of narrow leaved cattail (*Typha angustifolia*), and includes red willow and dusky willow (*Salix melanopsis*). Dominant non-natives associated with this habitat type are broad-leaved pepperweed and poison hemlock (*Conium maculatum*).

## 4.7 Mixed Chaparral

Mixed chaparral habitat consists of a single stand of dense shrubs on a steep slope northwest of Borrow Area 1. The dominant shrub in this stand is silver buffaloberry (*Shepherdia argentea*). Subdominant shrubs in this stand are blue elderberry (*Sambucus mexicana*) and wild rose (*Rosa* sp.).

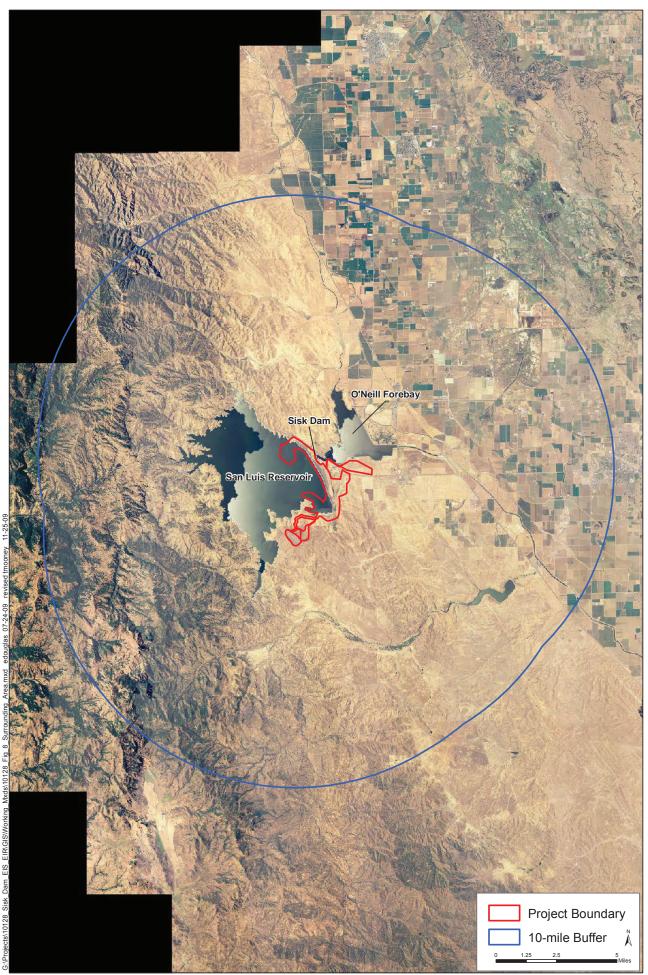
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# Chapter 5 Continuity of the Project Site with the Surrounding 10-Mile Area

The project area is surrounded by a variety of land uses. Residential and commercial uses exist in nearby Santa Nella to the northeast of O'Neill Forebay. Lands to the southeast of the project area between San Luis Reservoir and Los Banos Reservoir include large, privately owned ranchlands, agricultural lands, an electrical substation, and scattered nonresidential uses. A national cemetery is located to the northeast of O'Neill Forebay, and immediately west of San Luis Reservoir is Pacheco State Park, owned by the California Department of Parks and Recreation. California Department of Fish and Game properties are located north of the San Luis Reservoir and east and west of O'Neill Forebay. As shown in Figure 8, the area surrounding the project site is characterized by sparse development and large expanses of undeveloped land. Similar to the project site, the surrounding area is characterized by rolling hills with annual grassland vegetation and abundant burrows.

The project site has a high level of continuity with surrounding habitats, given the limited extent of development and the large expanses of surrounding grasslands. Wildlife can currently move throughout the project site and without restriction to surrounding grassland habitats to the south and west. Interstate 5 (I-5), Highway 152, the California Aqueduct, and the Delta-Mendota Canal likely pose some hindrance to wildlife movement to the north and east.

Constable et al. (2009) used modeling to identify and evaluate three potential kit fox movement corridors through the Santa Nella area, two of which cross through a portion of the proposed project site. The study identified a number of significant impediments to kit fox movements in this area and found that all three corridors primarily traversed habitat of low suitability. The study concluded that the identified corridors might be suboptimal at best. Further, the authors stated that the viability and even the presence of kit fox populations north of Santa Nella appears questionable and that the possibility that this region may function as a population sink for kit foxes warrants consideration. The authors also reasoned that if the area is a sink, then corridors might adversely affect source populations by facilitating emigration from those populations. This page intentionally left blank.





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# Chapter 6 Habitat Suitability of the Project Site

## 6.1 Methodology

Mike Bumgardner, Principal Biologist of Bumgardner Biological Consulting, served as the senior biologist for the San Joaquin kit fox early evaluation survey described herein. Mr. Bumgardner was assisted by North State Resources biologists Brandon Amrhein, Terra Perkins, and Julian Colescott. The primary objective of the survey, conducted in September 2009, was to evaluate the suitability of the project site for the San Joaquin kit fox. Transects were walked to achieve 100 percent visual coverage of the project site (Figure 9), exclusive of areas determined to be unsuitable (see below). Surveyors focused on evaluating denning potential and searching for San Joaquin kit fox sign (e.g., scat, tracks).

Portions of the project site that met any of the following three conditions were eliminated from consideration as potential San Joaquin kit fox: (1) area was within the lake inundation scar; (2) area consisted of steep, rocky slopes; or (3) area was covered by dense shrub or forb habitat typically associated with inundated or saturated soils (see Figure 9).

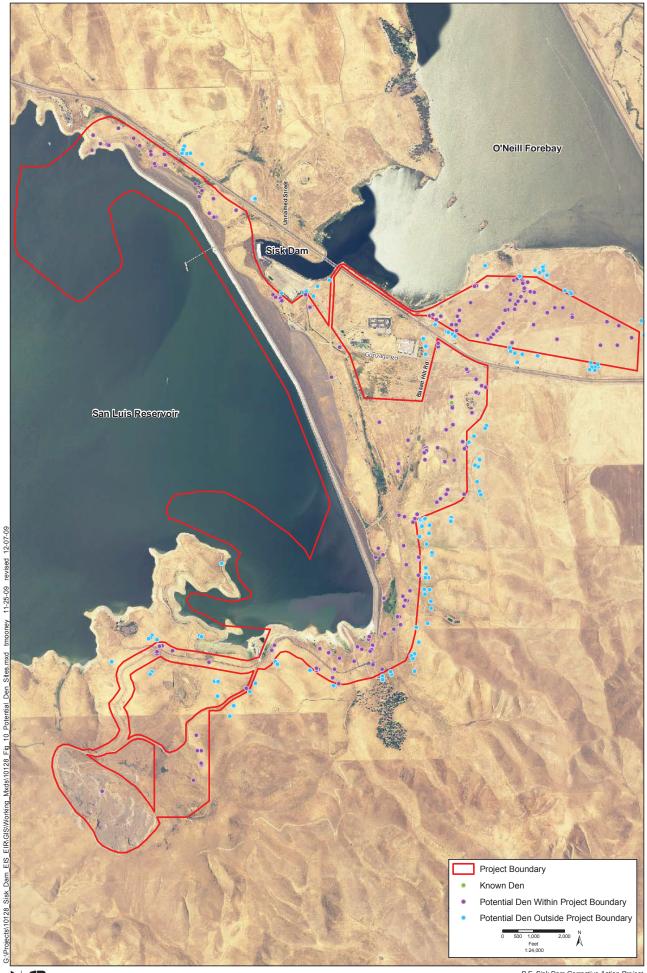
Representative photographs of project site habitats, a figure depicting photograph location points, and additional details regarding suitability of habitats for the San Joaquin kit fox are presented in Appendix A.

### 6.2 Results

One San Joaquin kit fox den was observed within the project boundary (Figure 10). Kit fox use of the den was concluded based on the presence of a track positively identified as San Joaquin kit fox by senior biologist Mike Bumgardner. Within the project boundary, 194 potential dens were observed. Potential dens include all subterranean holes that had entrances of appropriate dimensions (i.e., approximately 5–8 inches in diameter) and for which available evidence was insufficient to conclude that it was being used or had been used by a kit fox. Approximately 40 percent of the potential dens identified during the survey appeared to have been created by American badgers.



Figure 9 Kit Fox Survey Transects



Pot 10 <u>P</u> orking Mxds/10128 EIS\_EIR\GIS\ ects/10128\_Sisk\_Dam

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# Chapter 7 Potential Project-Related Adverse Effects on the San Joaquin Kit Fox

The proposed project would provide for the continued, safe operation of the San Luis Reservoir, but is not expected to result in a permanent increase in the extent of human activity on the project site or in surrounding areas.

A recovery action specified by the Service that is particularly applicable to the project site is to "protect existing kit fox habitat in the northern, northeastern segments of their geographic range and existing connections between habitat in those areas and habitat farther south." The Santa Nella area, including portions of the project site, have been considered crucial to the continued existence of the San Joaquin kit fox because it was believed that the area provides a narrow corridor connecting the northern and southern kit fox populations (Kit Fox Planning and Conservation Team 2002).

Proposed project activities, including grading, mining, stockpiling, etc., could result in the temporary disruption of this travel corridor. However, the significance of the disruption on the health of the kit fox population is difficult to quantify as the importance of travel corridors in this area is unclear (see discussion under Continuity of the Project Site with the Surrounding 10-Mile Area above). *This page intentionally left blank.* 

## Chapter 8 Recommended Mitigation

The following measures will be implemented to avoid the loss or harassment of San Joaquin kit fox during project implementation:

- An employee education program shall be conducted to address the potential presence of kit fox and other rare species potentially occurring on the project site.
- Project-related vehicles shall observe a 20-mph speed limit in the project area, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active.
- To the extent practicable, nighttime construction shall be minimized.
- Off-road traffic outside of designated project areas shall be prohibited.
- To prevent inadvertent entrapment of kit foxes or other animals during the construction phases of the projects, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials or equipped with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals.
- All construction pipes, culverts, or similar structures with a diameter of 4 inches or more that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the Service has been consulted. If necessary, and under the direct supervision of a qualified biologist, the pipe may be moved once to remove it from the path of construction activity.
- All food-related trash items, such as wrappers, cans, bottles, and food scraps, shall be disposed of in a closed container and removed at least once a week from a construction or project site.

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## Chapter 9 Cumulative Effects

### 9.1 Context

Merced County is located in the central San Joaquin Valley. While the County's population is distributed in rural and urban areas throughout the County, the majority of people reside along or near the Highway 99 corridor. The total population estimate for Merced County in 2008 was 246,117 (U.S. Census Bureau 2009), with more than 80,000 residents living in unincorporated rural areas. Merced County, as well as the rest of the San Joaquin Valley, is expected to grow substantially over the next 50 years because of an increased demand for affordable housing. California Department of Finance (DOF) projections show that the population of Merced County is expected to increase to 652,355 by the year 2050 (State of California 2007). This represents a 170 percent increase in the County's population from the year 2003. Each of the development projects discussed below would contribute to the projected growth of the County (particularly western Merced County). The Merced County General Plan (Merced County 1990) provides policies and implementation measures to address future growth and focus growth within Specific Urban Development Plan (SUDP) boundaries in order to reduce adverse effects on the natural environment (including the San Joaquin kit fox). Each project would be required to demonstrate compliance with the General Plan prior to project approval. It should be noted that this cumulative context is appropriate for California Environmental Quality Act (CEQA) analysis. The cumulative context is also assumed to be appropriate for federal Endangered Species Act (ESA) compliance (i.e., Section 7 consultation) as none of the identified projects are known to have a nexus for independent Section 7 consultation at this time (i.e., future federal actions requiring separate consultation (unrelated to the proposed action) are not considered part of the cumulative effects).

## 9.2 Related Projects Contributing to Cumulative Impacts

### 9.2.1 Villages of Laguna San Luis Community Plan

The Villages of Laguna San Luis Community Plan (Villages of San Luis SUDP) consists of new urban development on approximately 6,214 acres and involves adoption of a Community Plan for the proposed SUDP area and amendment of the Merced County zoning designations to match the land use designations of the Community Plan. This project would result in the development of up to 3,722 acres associated with 15,895 residential units on 3,011 acres; 204.5 acres of commercial-employment uses involving retail, vehicle park, hotel, medical

center and business park uses; 180 acres for schools; 41 acres for quasi-public uses (i.e., water and wastewater treatment); 109.6 acres of public uses; 172.5 acres of parkland; and approximately 1,200 acres of open space for San Joaquin kit fox habitat and movement corridors. The Community Plan consists of eight conceptual development components that describe proposed land uses, onsite circulation, housing mixtures and densities, open space areas, community design standards, flood control and drainage facilities, infrastructure, and public facilities and services. Proposed land uses within the Community Plan are intended to meet housing demands associated with employment-generating land uses and provide local and regional employment opportunities.

### 9.2.2 Santa Nella Community Specific Plan

The Santa Nella Community Specific Plan (Santa Nella SUDP) consists of new urban development on approximately 2,224 acres and involves amending the Merced County General Plan land use designations and Merced County zoning designations to allow development of 6,133 new residential units (in addition to 350 existing residences on the project site). The Santa Nella SUDP straddles SR 33 between the California Aqueduct at its southern edge, Fahey Road at its northern edge, Delta-Mendota Canal at its western edge, and Hilldale Road at its eastern edge. Development of residential land uses would occur on approximately 1,334 acres, commercial and business park uses would be developed on approximately 482 acres, schools on 99 acres, an existing golf course would be expanded on 120 acres. The Santa Nella SUDP was approved by the County in 2001 and the project site is currently being developed.

### 9.2.3 Agua Fria Village Community Plan Study Area

The Agua Fria Village Community Plan study area (Agua Fria) consists of a 3,220-acre area located within and south of the Villages of Laguna San Luis Community Plan. A portion of Agua Fria (1,328 acres) encompasses the southwestern-most area of the Villages of Laguna San Luis project site, which is identified in the Villages of Laguna San Luis Community Plan as open space and urban reserve. For the entire project, approximately 933 acres would be developed with residential land uses (i.e., low-density, medium-density, high-density), 9 acres would be developed with commercial land uses (i.e., village center), 17 acres would be developed for institutional land uses (e.g., school, fire station, community center), and 61 acres would be developed as parks. The remaining areas (approximately 2,200 acres) would be used for water retention ponds and detention areas and open space areas (e.g., habitat mitigation acreage and conservation bank). The Agua Fria project is currently being reviewed by Merced County through its planning process.

### 9.2.4 Solid Waste Disposal/Transfer Options for Western Merced County

The Merced County Department of Public Works Solid Waste Division (SWD) operates the 172-acre Billy Wright Landfill, of which about 39 acres is the permitted area for waste disposal (the landfill footprint). The Billy Wright Landfill primarily serves the cities of Dos Palos, Gustine, and Los Banos, the

community of Santa Nella, and the unincorporated areas of western Merced County. Billy Wright Landfill is located south of SR 152 and west of I-5 approximately 6 miles west of Los Banos along Billy Wright Road. The SWD identified six alternative waste disposal or waste transfer options that would accommodate projected disposal requirements for western Merced County. The options involve either the expansion of the existing Billy Wright Landfill or closure of the landfill and construction of a transfer station in the Los Banos area. The transfer station options would be implemented in conjunction with disposal at the Highway 59 Landfill or another disposal facility in the region. Each of the project options is designed to meet the projected waste disposal needs of western Merced County to at least the year 2023. The landfill expansion options would extend the Billy Wright Landfill site life considerably beyond that year. The first landfill expansion option would increase the permitted disposal area inside the existing boundaries by approximately 62 acres and would provide a refuse capacity of 5.3 million tons. The second landfill expansion option would involve acquiring approximately 53 additional acres along the current northern boundary of the existing landfill, which would increase the permitted disposal area by approximately 131 acres and would provide a refuse capacity of 11.1 million tons. Merced County has not currently selected or begun implementing any of the waste disposal or waste transfer options. If either landfill option is selected, but cannot be completed by the time the existing landfill reaches capacity, a down-sized transfer facility would be constructed to accommodate waste on an interim basis. When the landfill expansion becomes operational, the down-sized transfer facility would be used as a recycling/waste processing center.

## 9.3 Cumulative Impact Analysis

The projects described above would result in the loss of 9,359 acres of habitat in western Merced County (i.e., west of I-5) that is potentially suitable for San Joaquin kit fox foraging, movement, and denning. Implementation of the proposed Sisk Dam Corrective Action Project would result in an additional permanent loss of approximately 200 acres of potentially suitable San Joaquin kit fox habitat and a temporary loss of approximately 750 acres (as a result of borrow site excavation, staging areas, and storage areas). Other cumulative impacts to San Joaquin kit fox from project implementation may include habitat fragmentation, effects on dispersal corridor connectivity, and road mortality. However, given the questionable status of San Joaquin kit fox populations north of Santa Nella, the uncertainty regarding the ability of northern areas to support viable San Joaquin kit fox (Constable et al. 2009), consideration should be given to whether these impacts are not cumulatively considerable (CEQA) or insignificant or discountable (ESA).

### B.F. Sisk Dam Corrective Action Project San Joaquin Kit Fox Early Evaluation Report

## Chapter 10 References

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#### B.F. Sisk Dam Corrective Action Project San Joaquin Kit Fox Early Evaluation Report

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## **APPENDIX A**

Representative Photographs of the Project Site



Blank back of 11x17 Figure A-1



**Photograph No. 1** – This photo shows a stand of dense, ruderal vegetation that is unsuitable for San Joaquin kit fox. The vegetation is dominated by thistles and wild mustard and occurs in an area that is supported by surface runoff from and leakage through the dam. Several stands of this habitat type occur close to and downslope from the dam. This habitat type also often occurs in conjunction with stands of *Baccharis* spp. and/or riparian woodland.



**Photograph No. 2** – The photo shows consolidated rock and gravel substrates located within the lake inundation scar. Though now exposed and dry, these substrates, which are unsuitable for San Joaquin kit fox dens, also exhibit no evidence of use by small rodents (e.g., burrows). Substrates of this type are well distributed within the lake inundation scar. This photo is oriented uphill towards the parking lot at the southeastern corner of the lake.



**Photograph No. 3** – The photo shows dried sand and gravel substrates located within the lake inundation scar. These substrates are unsuitable for San Joaquin kit fox dens. Though well distributed within the lake inundation scar, they show no evidence of use by small rodents (e.g., burrows). Note that the vegetative cover within these areas is relatively sparse (i.e., low canopy cover).



**Photograph No. 4** – The photo shows dried silt and mud substrates located within the lake inundation scar. These substrates are unsuitable for San Joaquin kit fox dens. They also show no evidence of use by small rodents (e.g., burrows). Substrates of this type are also well distributed within the lake inundation scar. Similar to the other substrates within the lake inundation scar, these substrates do not support a well-developed canopy of grassland and/or ruderal species.



**Photograph No. 5** – The photo shows the poorly developed vegetation on muds and silts within the lake inundation scar. Though dry for at least two years, almost all vegetation on the dry lakebed is low in height and density. Furthermore, there has been no colonization by small rodents based on the lack of burrows.



**Photograph No. 6** – The photo shows the extent of habitat left exposed by the receding lake. However, as discussed in the captions of the previous photos, there is no prey base or underground refugia for San Joaquin kit fox in these areas. Note that the grassy knoll in the left background view is upland habitat that previously bordered the lake. All habitat in the foreground and middle ground views of the photo is in the lake inundation scar (i.e., was previously covered by water).



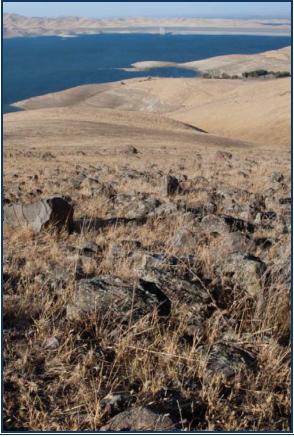
**Photograph No. 7** – The photo shows the dense, annual grassland that is located in the low rolling hills north of the existing rock quarry. This latter habitat is suitable for San Joaquin kit fox. However, the height and density of the grassland reduces the habitat value for kit fox, which prefer more open habitats. The photo also shows the steep, rocky slopes below the rock quarry. These slopes do not provide suitable habitat for kit fox (mostly due to the presence of extremely rocky soils that preclude burrowing).



**Photograph No. 8** – The photo shows the steep, rocky slopes immediately downslope from the existing rock quarry. The photo is oriented towards the northwest corner of the quarry. The access road that enters the quarry can be seen near the top of slope. The annual grassland on these slopes has been moderately grazed, making the rocky substrate more visible. This habitat is considered unsuitable for San Joaquin kit fox (primarily due to the rocky substrate which is difficult to excavate).



**Photograph No. 9** – The photo shows the rocky substrate associated with the slopes located immediately downslope of the existing rock quarry. Such material is difficult for burrowing mammals (including American badger) to excavate. Thus, it was not surprising to find no potential dens in this habitat during the potential den surveys. Annual grasslands that occur on such slopes are not considered to be suitable habitat for San Joaquin kit fox.



**Photograph No. 10** – The photo shows the steep, rocky slopes immediately below the existing rock quarry, but also shows annual grassland that is suitable for San Joaquin kit fox further downslope. The transition from unsuitable to suitable habitat for kit fox is difficult to discern from the photo, but occurs where the rocky substrate ends and deeper, well-developed soils begin. The photo also shows the existing lake inundation scar in the background view.



**Photograph No. 11** – The photo shows the existing rock quarry from the access road into the site. The quarry consists primarily of flat benches with extremely rocky substrates (similar to desert pavement), scattered rock piles, and mined, rocky slopes. Very few areas with deeper, well developed soils occur within the quarry. Surveys were conducted throughout the entire quarry site and found only one potential den (a marginal burrow beneath a large rock). Areas with similar rocky soils were subsequently considered to be unsuitable for the San Joaquin kit fox without completing 100 percent surface coverage surveys for potential kit fox dens.



**Photograph No. 12** – The photo further shows that the habitat is unsuitable for San Joaquin kit fox. The rocky substrates preclude burrowing activity by mammalian species (including small rodents). Therefore, the habitat does not provide a suitable prey base or escape refugia for the San Joaquin kit fox.



**Photograph No. 13** – The photo shows the only area associated with the existing quarry where soils may be suitable for burrowing. However, no potential dens and very few small rodent burrows were found in this habitat. Furthermore, the soils in this area appear to be gypsiferous, as large gypsum crystals occur throughout the substrate and the soils are extremely friable (i.e., crumbly). Thus, the physical characteristics of these soils may not be suitable for burrowing (i.e., burrows may easily collapse in these soils).



**Photograph No. 14** – The photo shows the extensive annual grassland located in the flats and rolling hills east of Basalt Road. This habitat is suitable for San Joaquin kit fox. However, as discussed previously, the height and density of the grassland diminishes the habitat value for kit fox. San Joaquin kit fox prefer more open habitats that provide better line-of-site views of potential predators and where potential dens are more easily seen in the landscape.



**Photograph No. 15** – The photo shows the most suitable habitat for San Joaquin kit fox within the project site. This area, located east of SR 152, supports a low, sparse cover of annual grassland. Furthermore, the area supports some of the highest California ground squirrel densities observed in the study area. This latter species creates most of the burrows that are later modified as dens for kit fox. The photo is oriented to the west towards SR 152 and the dam.



**Photograph No. 16** – The photo further illustrates the low height and density of the annual grassland located east of SR 152. It also shows how easily potential escape refugia can be seen in the shorter grass landscape. Each of these factors is important to kit fox since they facilitate avoidance of and escape from potential predators (e.g., coyote).



**Photograph No. 17** – The photo shows annual grassland near the base of the dam that is suitable habitat for San Joaquin kit fox. The photo also shows the rock fill face of the dam, which is not suitable habitat for kit fox.



**Photograph No. 18** – The photo shows a closer view of the rock fill associated with the dam. At a distance the face appears to be covered in sparse annual grassland. However, in this closer view it can be seen that the vegetative cover is sparse and patchy. Furthermore, there are no opportunities for escape refugia (i.e., potential dens) for kit fox due to the rocky substrates.



**Photograph No. 19** – The photo further illustrates the rocky conditions that are found on the face of the dam. This substrate precludes any development of potential dens for kit fox.



**Photograph No. 20** – The photo shows annual grassland on the higher portions of the slope above the dual-purpose pumping-generating plant at O'Neill Forebay that is suitable habitat for San Joaquin kit fox (i.e., flatter terrain with deeper friable soils). However, the steeper slopes in the center and right middle ground views are associated with an extremely rocky substrate. Though animal trails were observed crossing this steep slope, no evidence of potential dens was found on the slope, while potential dens were found in the annual grassland above the steep slope. Again, similar to other portions of the study area, rocky substrates preclude the creation of potential dens for kit fox.



**Photograph No. 21** – The photo shows a closer view of the steep, rocky slope above the dual-purpose pumping-generating plant at O'Neill Forebay. Note that no soils excavation (associated with burrowing activity) is apparent on the slope even though the vegetation is sparse and relatively low.



**Photograph No. 22** – The photo further shows the rocky substrate above the dual-purpose pumping-generating plant at O'Neill Forebay. In addition, the photo shows the suitable habitat on the upper slopes below the rock fill face of the dam (in the right background view).



**Photograph No. 23** – The photo shows a narrow corridor of suitable habitat for San Joaquin kit fox that is sandwiched between unsuitable habitat for the taxon (i.e., the rock filled face of the dam and steep, rocky slope above the dual-purpose pumping-generating plant at O'Neill Forebay).



**Photograph No. 24** – The photo shows a stand of dense vegetation that includes tall weedy species, *Baccharis* sp., and riparian woodland. This habitat is unsuitable for kit fox due to its height, density, presence of spiny vegetation, and seasonal presence of surface water. As identified in a previous photo, this vegetation is supported by surface runoff from and leakage through the dam. Several stands of this habitat type occur close to and downslope from the dam.



**Photograph No. 25** – The photo shows overgrown pavement associated with a short reach of the old highway south of Gonzaga Road. The habitat does not provide suitable conditions for kit fox denning, but may be used as foraging habitat. The dam can be seen in the distance in the background view.



**Photograph No. 26** – The photo shows the extensive annual grassland east of Basalt Road in the study area (in the vicinity of Helicopter Hill). As previously noted, this habitat is suitable for kit fox, but has diminished value due to the height and density of the annual grasses. Though potential dens (mostly American badger dens) were found in small numbers throughout this habitat, the locations of these dens are not apparent in the dense, grassland landscape. Thus, potential escape refugia for kit fox would be difficult to find in this landscape.



**Photograph No. 27** – The photo further shows the dense, annual grassland located east of Basalt Road in the study area.



**Photograph No. 28** – The photo shows a closer view of the annual grassland east of Basalt Road. Grass canopy density of this type typically occurs where fire and grazing has been precluded. The density of this grassland diminishes the value to kit fox for a variety of reasons (e.g., increased difficulties associated with movement, detection of prey species, and finding escape refugia).

### **APPENDIX B**

Resume for Senior Biologist

#### MICHAEL BUMGARDNER

Principal, Bumgardner Biological Consulting

Mr. Bumgardner has over 20 years of experience with the terrestrial vertebrates, invertebrates, and flora of North, Central, and South America; Asia; Africa; and western Europe. He also has over 18 years of experience in the management and preparation of environmental documents that comply with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), Tahoe Regional Planning Agency (TRPA) Rules of Procedure, Federal Endangered Species Act (FESA), and California Endangered Species Act (CESA). He has extensive experience in the coordination and preparation of biological resource assessments, impact assessments, management plans, mitigation programs, and habitat conservation planning and permitting associated with special-status species.

#### **TECHNICAL CAPABILITIES**

- Experienced with the statutory requirements and guidelines for federal Endangered Species Act Section 7 Consultations, Section 10(a)(1)(B) incidental take permits, Section 10(a)(1)(A) safe harbor agreements, and California Fish and Game Code Section 2081 management agreements and Section 2080.1 consistency determinations.
- Experienced in the preparation of biological assessments and conservation strategies for state and federal threatened and endangered species and other special-status species.
- Managed and conducted surveys for species including, but not limited to: valley elderberry longhorn beetle, California tiger salamander, arroyo toad, western spadefoot, mountain yellow-legged frog, California red-legged frog, desert tortoise, western pond turtle, blunt-nosed leopard lizard, giant garter snake, San Joaquin kit fox, California clapper rail, spotted owl, northern goshawk, burrowing owl, Swainson's hawk, least Bell's vireo, southwestern willow flycatcher, California gnatcatcher.
- Experienced in the management and preparation of environmental documents that comply with CEQA, NEPA, and the TRPA Rules of Procedure.
- Experienced with impact analyses involving sensitive habitats and special-status species, designing feasible mitigation measures to reduce significant impacts on biological resources, and resolving project conflicts with biological resources.
- Serves on the Science Subteam of the US Fish and Wildlife Service's Recovery Team for the

Santa Barbara County DPS of *California tiger* salamander.

- Served as guest lecturer for course on Ecological Methods (Sierra Community College) and Conservation Biology (California State University - Sacramento).

#### **EDUCATION AND AFFILIATIONS**

B.S., Zoology, June 1980, University of California at Davis, California

#### Registrations

- Federal Scientific Take Permit No. TE-785564-6 for California Gnatcatcher (*Polioptila californica californica*), Southwestern Willow Flycatcher (*Empidonax trailii extimus*), California Clapper Rail (*Rallus longirostris obsoletus*), and California Tiger Salamander (*Ambystoma californiense*)
- California Department of Fish and Game Scientific Collector's Permit #801214-01 and Letter of Agreement for Yellow-billed Cuckoo (*Coccyzus americanus*), Willow Flycatcher (*Empidonax trailii*), California Gnatcatcher (*Polioptila californica californica*), California Black Rail (*Laterallus jamaicensis coturniculus*), and California Clapper Rail (*Rallus longirostris obsoletus*)

#### **PROJECT EXPERIENCE**

#### State and Federal Endangered Species Act Compliance

Cape Horn Tunnel Rehabilitation Project *California Tiger Salamander* Drift Fence Study and Monitoring, CH2M HILL and Oakdale Irrigation District

- Avian Baseline Surveys and Mitigation Strategy for Aero Energy's Tehachapi Wind Energy Project, McCormick Biological and Aero Energy LLC
- Sespe Oil Field Endangered Species Act/Permitting Assistance in Regards to *California Condor*, Seneca Resources
- Kettleman Hills North Dome Oil Field *Blunt-Nosed Leopard Lizard* Surveys, McCormick Biological and Chevron
- California Red-legged Frog Monitoring, Salvage, and Relocation for the Marsh Creek Bridge Repairs, Sycamore Environmental Consultants and Contra Costa County Planning Department
- San Joaquin Kit Fox Potential Den Surveys and Clearance for the Vernalis-Thoming 3 & 4 Aggregate Mining Sites, Teichert Materials
- Least Bell's Vireo and Southwestern Willow Flycatcher Surveys within Recreation Residence Tracts of the Angeles National Forest, Angeles National Forest
- San Joaquin Kit Fox Potential Den Surveys on 2,700+ Acres within The Villages at Laguna San Luis SUDP, Berryman Ecological LLC
- Review of Coachella Valley Multi-Species Habitat Conservation Plan and EIR/EIS (particularly for *Peninsular Bighorn Sheep*), Pacific Municipal Consults and City of Palm Springs
- Review and Comment on Proposed Critical Habitat for *Southwestern Willow Flycatcher*, Southern California Edison
- Soledad Canyon Sand and Gravel Mine Expert Witness Services, Jeffer, Mangels, Butler, and Marmaro LLP
- Northwest Casmalia Enhanced Oil Recovery Project California Tiger Salamander and California Red-legged Frog Habitat Assessment and Endangered Species Act Compliance, Santa Maria Pacific, LLC
- Kettleman Hills Waste Management Facility Class 1 Landfill Expansion *Blunt-nosed Leopard Lizard* Surveys and Endangered Species Act Compliance, TRC Solutions
- Zeneca Richmond Facility Saltmarsh Remediation Project *California Clapper Rail* Focused Survey and Habitat Evaluation/Impact Assessment, LFR Levine Fricke
- Los Flores Ranch Remediation Project California Tiger Salamander Habitat Evaluation, Impact

Assessment, and Alternative Land Use Development Strategy, Chevron

- White Paper on the Known Historic and Current Distribution of the *San Joaquin Kit Fox* in Eastern Merced and Stanislaus Counties and Western Madera County, Merced County
- UC Merced/University Community Federally Listed Vernal Pool Crustacean, California Tiger Salamander, Special-Status Plant, and San Joaquin Kit Fox/Fresno Kangaroo Rat Survey Programs and Biological Assessment, University of California and Merced County
- Stewart Tract Section 2081 Habitat Management Plan for *Swainson's Hawk*, Califia Development
- Milpitas Recycled Water Pipeline Project Passive Relocation Program for *Burrowing Owl*, Santa Clara Valley Water District

#### Natural Resource Management Projects

- *California Tiger Salamander* Distribution Study in Southern San Luis Obispo County, U.S. Fish and Wildlife Service
- Tulare Basin Wildlife Management Area Planning Assistance, U.S. Fish and Wildlife Service
- Hansen Creek (Nevada) Biological Monitoring Program, Getchell Gold Mine
- Lawrence Berkeley National Laboratory Biological Baseline Database, U.S. Department of Energy
- Environmental Baseline Study for a 10-year comprehensive plan that addresses 280+ petroleum-related projects in eastern Venezuela, Petroleos de Venezuela, S.A.

#### Utility and Infrastructure Projects

- Biological Assessments and Monitoring for Various Projects on the U.S. Bureau of Reclamation's Delta-Mendota Canal, San Luis & Delta-Mendota Water Authority
- Avenal Energy Project Application for Certification and Endangered Species Act Compliance, TRC Solutions
- Elk Grove Routine Stormwater Channel Maintenance Program Biological Assessment for *Giant Garter Snake* and *Valley Elderberry Longhorn Beetle*, City of Elk Grove
- Habitat Assessments for *Southwestern Willow Flycatcher* at Southern California Edison Facilities in the Santa Ana River Watershed, Southern California Edison

Alba Phase 3 LNG Plant Preliminary Impact Analysis, Alternatives Analysis, and Environmental Impact Assessment (EIA) (Equatorial Guinea), Marathon Oil Company

Mill Creek 2/3 Hydroelectric Project FERC Relicensing *Southwestern Willow Flycatcher* Expert Witness Services, Downy, Brand, Seymour, and Rohwer

Santa Rosa Subregional Long-Term Wastewater Project EIR and Biological Assessment, City of Santa Rosa

Southern Nevada Water Authority Treatment and Transmission Facility EIS and Biological Assessment, Southern Nevada Water Authority (Nevada)

Biological Evaluations for Several Wastewater Infrastructure Projects on National Forest lands in the Lake Tahoe Basin, South Tahoe Public Utility District

Echo Lake Dam Stabilization Environmental Assessment, PG&E

#### Mining Projects

*California Red-legged Frog* Survey and Endangered Species Act Compliance Strategy for the Gardner Ranch Mining and Processing Facility, Granite Construction Company

*California Red-legged Frog* Survey for the Bee Rock Quarry and Adjacent Drainages, Granite Construction Company

Day Creek-Inland Rock Mine Expansion San Bernardino Kangaroo Rat Trapping Study, West Coast Environmental & Engineering and Hanson Aggregates

Los Alamos Sand Mine *California Tiger Salamander* and *California Red-legged Frog* Surveys, Biological Assessment, and Safe Harbor Agreement, Los Alamos Sand Company

Williams Quarry Expansion Project Biological Resources Report, Resource Design Technology, Inc.

Madera Ranch Quarry *California Tiger Salamander* Biological Assessment and Draft Biological Opinion, Pacific Municipal Consultants

Ozena Valley Ranch Surface Mining Site Biological Resources Report, West Coast Environmental & Engineering

Santa Maria River Surface Mining Site Biological Resources Report, West Coast Environmental & Engineering Diamond Rock Surface Mining Site Biological Resources Report and *Blunt-nosed Leopard Lizard* Impact Avoidance Program, West Coast Environmental & Engineering

#### **Transportation Projects**

Analysis of Impacts to *Willow Flycatcher* Habitat from Emergency Washout Repairs on the Caliente Line along Meadow Valley Wash (Nevada), Union Pacific Railroad

Analysis of Impacts to *Willow Flycatcher* Habitat from Emergency Washout Repairs on the Clifton Branch of the Lordsburg Line along the Gila River (Arizona), Union Pacific Railroad

Biological Evaluations for 18 Union Pacific Railroad Bridge Replacement Projects in California, Olsson Consulting

Hill Slough Bridge Replacement Project *California Clapper Rail* Surveys, Sycamore Environmental Consultants

Union Pacific Railroad Yolo Bypass North Track Project Biological Assessment, Parsons Corporation

Kowloon-Canton Railway Corporation Lok Ma Chau Spurline (Hong Kong) Expert Witness Services, Denton Wilde Sapte (Legal Counsel, London)

Kowloon-Canton Railway Corporation Lok Ma Chau Spurline Environmental Impact Assessment Defensibility Review and Response to Comments, California Environmental Consulting Associates

US Highway 101 Auxiliary Lanes Project Wetlands Delineation, Natural Environment Study, and Biological Assessment, San Mateo County Department of Transportation

#### **TRPA** Projects

Heavenly Ski Resort Master Plan EIR/EIS, Biological Resources Surveys, Biological Evaluation, and Annual Monitoring Programs, Heavenly Ski Resort and Tahoe Regional Planning Agency

Golden Bear Park Master Plan EIR/EIS, Tahoe Regional Planning Agency and El Dorado County

Harootunian Trust Land Transfer Biological Evaluation, Lake Tahoe Basin Management Unit, USDA Forest Service

#### Department of Defense Projects

California Gnatcatcher Surveys for the Santa Margarita River Conjunctive Use Project within MCB Camp Pendleton, Fallbrook Naval Weapons Station, and City of Fallbrook, North State Resources, Inc.

Brooks Air Force Base (Texas) Inventory of Avian Species, U.S. Air Force Center for Environmental Excellence (AFCEE)

Hohenfels Combat Maneuver Training Center (Germany) Integrated Natural Resources Management Plan-Fish and Wildlife and Threatened and Endangered Species Management Programs, U.S. Army Europe (USAEUR)

Andrews Air Force Base and Davidsonville and Brandywine Communication Sites (Maryland) Biological Inventory and Integrated Natural Resources Management Plan, AFCEE

Fort Leonard Wood (Missouri) BRAC US Army Chemical School and Military Police School Relocation Mitigation Monitoring Framework and Adaptive Management Strategy, U.S. Army

U.S. Fish and Wildlife Service World-listed, and Portuguese Government Listed Species Surveys and Integrated Natural Resources Management Plan (Azores), AFCEE and U.S. Air Force Air Combat Command (ACC)

Dyess Air Force Base (Texas) Threatened and Endangered Species, Fish and Wildlife, and Outdoor Recreation Component Plans of the Integrated Natural Resources Management Plan, ACC

- Vandenberg Air Force Base (California) Fiber Optic Cable Route Biological Assessment, U.S. Air Force Space Missile Command
- Camp Pendleton Relocation of Baseline Road and Case Springs Access Road Habitat Suitability and Assessment for the *Stephen's Kangaroo Rat*, *California Gnatcatcher, and Least Bell's Vireo*, U.S. Marine Corps

# B.F. Sisk Dam Corrective Action Project California Red-Legged Frog Site Assessment

B.F. Sisk Dam Central Valley Project, California



January 2010



U.S. Department of the Interior Bureau of Reclamation



State of California Department of Water Resources

# Mission of the Bureau of Reclamation

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.

## Department of Water Resources Mission Statement

To manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments.

# B.F. Sisk Dam Corrective Action Project California Red-Legged Frog Site Assessment

B.F. Sisk Dam Central Valley Project, California

Prepared by:



North State Resources, Inc. 5000 Bechelli Lane, Suite 203 Redding, CA 96002

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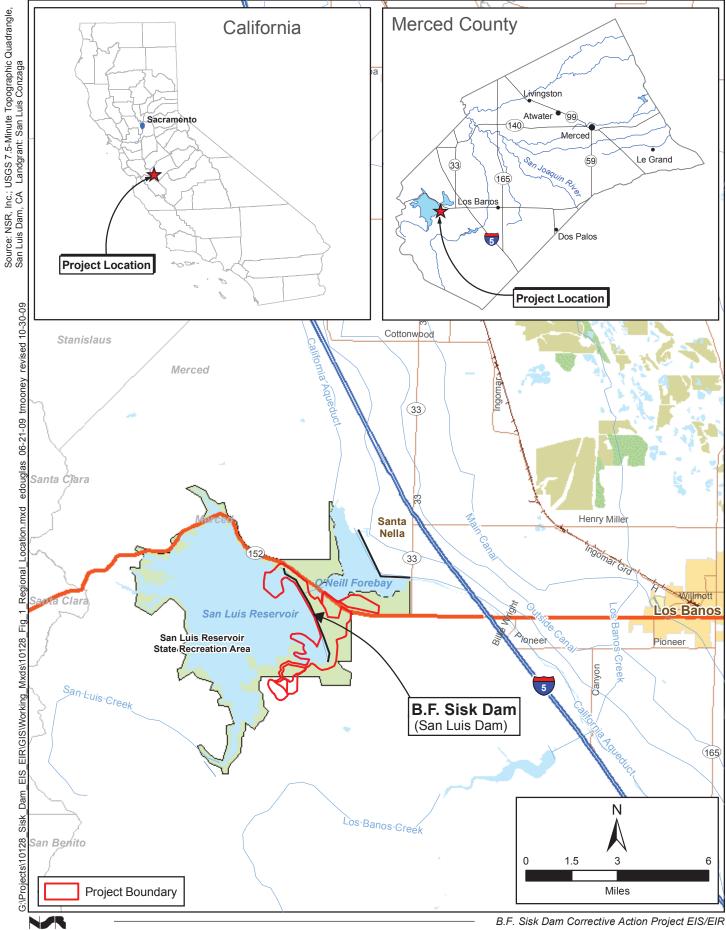
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### Chapter 1 Introduction

On behalf of the U.S. Bureau of Reclamation (Reclamation), North State Resources, Inc. (NSR) conducted a California red-legged frog site assessment for the 2,578.80-acre B.F. Sisk Dam Corrective Action Project (project). The project is located on the west side of California's Central Valley, approximately 12 miles west of Los Banos, in Merced County, California, and includes portions of the San Luis Reservoir and O'Neill Forebay (Figure 1). The project site is located within the San Luis Dam, California 7.5-minute U.S. Geological Survey (USGS) quadrangle, Township 10 South, Range 8 East, Sections 13, 27, 28, 33, and 34 Mount Diablo Base and Meridian as well as portions of the Gonzaga land grant.

Sisk Dam is part of the San Luis Joint-Use Complex, which was designed and constructed by the federal government and is operated and maintained by the California Department of Water Resources (DWR). The project area is surrounded by a variety of land uses. Residential and commercial uses exist in nearby Santa Nella to the northeast of O'Neill Forebay. Lands to the southeast of the project area between San Luis Reservoir and Los Banos Reservoir include large, privately owned ranchlands, agricultural lands, an electrical substation, and scattered nonresidential uses. A national cemetery is located to the northeast of O'Neill Forebay, and immediately west of San Luis Reservoir is Pacheco State Park, owned by the California Department of Parks and Recreation. California Department of Fish and Game (CDFG) properties are located north of the San Luis Reservoir, and east and west of O'Neill Forebay.

This California red-legged frog site assessment was conducted by NSR biologists between September 28 and October 22, 2009. Fifty aquatic features were documented, mapped, and analyzed.



North State Resources. Inc.

B.F. Sisk Dam Corrective Action Project EIS/EIR

### Chapter 2 Project Description

The dam and reservoir are located in an area of high potential for severe earthquake loading from active faults. A recent series of studies and analyses, including a probabilistic seismic analysis completed in 2006, determined that corrective actions were justified at Sisk Dam to reduce risk to the downstream public. Reclamation and DWR seek to mitigate potential safety concerns identified in previous and ongoing studies by modifying water retention structures at Sisk Dam in order to reduce the seismic, static, and hydrologic risk.

The project will involve two main components: stability berms (buttresses) and a dam raise. Project construction will require a large amount (on the order of between 2 million and 20 million cubic yards) of earth material, all of which would be obtained from a number of borrow sites within the project boundary.

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### Chapter 3 Environmental Setting

The elevation in the project area ranges from approximately 230 feet near the waterline of the O'Neil Forebay to a height of approximately 1,650 feet near the top of the Basalt Hill quarry. Habitats within the project boundary were characterized based on descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988). Annual grassland is the most dominant habitat type within the project area; however, there is a wide diversity between stands in this broad category. In addition to annual grassland, the following habitat types were mapped: alkali desert scrub, barren, coastal scrub, eucalyptus, fresh emergent wetland, lacustrine, mixed chaparral, and valley foothill riparian.

The study area is characterized by cool, moist winters and hot or warm, dry summers. Precipitation primarily falls as rain. Average annual rainfall is approximately 9.5 inches (Western Regional Climate Center 2009). Air temperatures in the project area range between an average January high of 55 degrees Fahrenheit (°F), and an average July high of 96 °F. The year-round average high is approximately 76 °F (Western Regional Climate Center 2009).

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## Chapter 4 California Red-Legged Frog Biology

### 4.1 Range of the California Red-legged Frog

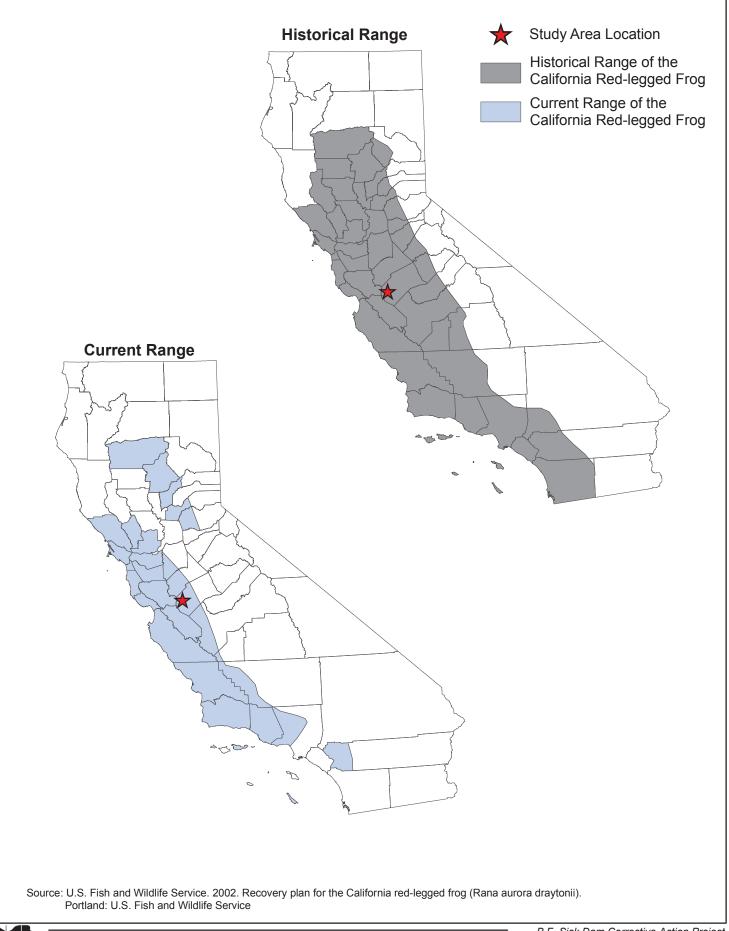
Historically, the California red-legged frog ranged from Point Reyes National Seashore in Marin County inland to the Central Valley and the Redding vicinity and south to northwestern Baja California, Mexico. It occurred in 46 counties in California. Today, that range has been reduced to 31 counties (U.S. Fish and Wildlife Service 2007). Populations outside of the San Francisco Bay area and central coast areas are isolated, and the species is predominantly extirpated from the southern Transverse and Peninsular ranges in California, although some populations persist. A map of the historical and current range of the California red-legged frog is presented as Figure 2. The study area is located within the current known range of the California red-legged frog (U.S. Fish and Wildlife Service 2002).

### 4.2 Life History

The California red-legged frog is a member of the family Ranidae within the order Anura, and is one of two subspecies of the red-legged frog (*Rana aurora*) (U.S. Fish and Wildlife Service 2002). The red-legged frog is the largest native frog in the western United States (Wright and Wright 1949), with adults obtaining a length of 3.4 to 5.4 inches from the tip of the snout to the rear of the vent (Jennings and Hayes 1994). Adult red-legged frogs have prominent dorsolateral folds, a bright red dorsum, and a well-defined stripe running along the upper lip. Juvenile frogs are 1.5 to 3.4 inches from the tip of the snout to the rear of the vent of the vent and have the same coloration as adults except that the dorsolateral folds are normally yellow or orange colored, especially in very young individuals (Stebbins 2003). Larval frogs range from 0.6 to 3.1 inches in length.

Adult California red-legged frogs have been observed to breed from late November through early May after the onset of warm rains (Storer 1925; Jennings and Hayes 1994). Females attach an egg mass of 2,000 to 6,000 moderate-sized (0.08 to 0.11 inch diameter) eggs to an emergent vegetation brace such as tule stalks (*Scirpus* spp.), annual grasses (Poaceae), or willow (*Salix* spp.) roots just below the water surface (Livezey and Wright 1947; Storer 1925).

Embryos of California red-legged frogs hatch 6 to 14 days after fertilization and the resulting larvae require 3.5 to 7 months to attain metamorphosis at a total



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length of 2.6 to 3.4 inches (Storer 1925). Larvae are thought to graze on algae, but they are rarely observed because they are often concealed in submergent vegetation or detritus (Jennings and Hayes 1994). Most larvae metamorphose into juvenile frogs between July and September. Post-metamorphic frogs grow rapidly by feeding on a wide variety of invertebrates. Adult frogs apparently eat a variety of animal prey including invertebrates, small fishes, frogs, and small mammals (Hayes and Tennant 1985; Arnold and Halliday 1986).

California red-legged frogs have been observed in a number of aquatic habitats throughout their historic range. The key to their occurrence in these habitats is the presence of perennial, or near perennial, water and the general lack of introduced aquatic predators such as crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*), bullfrogs (*Rana catesbeiana*), bluegill (*Lepomis macrochirus*), and other centrarchid fishes such as largemouth bass (*Micropterus salmoides*) (Jennings and Hayes 1994). Adults need dense, shrubby or emergent riparian vegetation closely associated with deep (greater than 2.3-foot deep) still or slow-moving water (U.S. Fish and Wildlife Service 2007). In addition to aquatic habitats, juvenile and adult California red-legged frogs use areas of riparian vegetation within a few yards of water. The species also uses small mammal burrows in or under vegetation, willow root wads, and the undersides of old boards and other debris within the riparian zone (Jennings and Hayes 1994).

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### Chapter 5 Methodology

This California red-legged frog site assessment was conducted in accordance with the U.S. Fish and Wildlife Service (USFWS) *Revised Guidance on Site Assessment and Field Surveys for California Red-legged Frogs* (U.S. Fish and Wildlife Service 2005). Information for the assessment was gathered through a combination of literature review, database searches, review of topographic mapping and aerial photographs, and field visits to the site. The literature review identified the historic and current range of the California red-legged frog and provided information on specific habitat preferences of the species. California Natural Diversity Data Base (CNDDB) records (California Department of Fish and Game 2009) and the USFWS *Recovery Plan for the California Red-legged Frog* (U.S. Fish and Wildlife Service 2002), provided information regarding the known existing and historic populations of California red-legged frogs in the region.

A review of topographic mapping, aerial photographs, and a preliminary wetland delineation report, provided information regarding vegetation communities and land uses occurring in the vicinity. NSR biologists Brandon Amrhein and Terra Perkins conducted the field assessment. The project area and publicly accessible areas of the surrounding vicinity (areas within 1 mile of the project area) were characterized and evaluated for the presence of potentially suitable habitat for the California red-legged frog. Aquatic habitats were mapped and characterized (e.g., ponds vs. creeks, pool vs. riffle, ephemeral vs. permanent, vegetation type and characteristics, water depth, substrate, and description of bank), and the presence of bullfrogs and other aquatic predators documented (see Appendices A and B). Upland habitats were also characterized (e.g., vegetation communities, land uses, and potential barriers to California red-legged frog movements).

### 5.1 California Red-Legged Frog Identification

Identification of all amphibians was done visually *in situ*. Positive diagnostic marks used to identify adult California red-legged frogs include prominent dorsolateral folds, bright red dorsum, and a well-defined stripe running along the upper lip. Positive diagnostic marks used to identify California red-legged frog tadpoles include eyes set well in from the outline of the head [contrasts with chorus frogs (*Pseudacris* spp.)] and generally mottled body and tail with few or no distinct black spots on tail fins (contrasts with bullfrogs).

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### Chapter 6 Results

### 6.1 Regional Assessment

The project area is not located within a designated critical habitat area for the California red-legged frog. The nearest critical habitat unit (Unit MER 1A and 1B) occurs approximately 3 miles west of the project area. There are four CNDDB recorded occurrences of California red-legged frogs within 5 miles of the project area (California Department of Fish and Game 2009) (Figure 3). The most recent sighting occurred in 2008 at a location within designated critical habitat approximately 4.87 miles northwest of the project area. The nearest recorded occurrence is from 1999 at a location approximately 2.95 miles southwest of the project, just past the southern arm of San Luis Reservoir along San Luis Creek.

### 6.2 Project Area and Local Area Assessment

The project area and local area (the area within a 1-mile radius of the project boundary) assessments included any area that appeared to retain even a minor amount of water. Fifty locations were assessed (Figures 4a and 4b). Each of the assessment locations are discussed in more detail below. Site Assessment Data Sheets are provided in Appendix B and photographs of each site are provided in Appendix C.

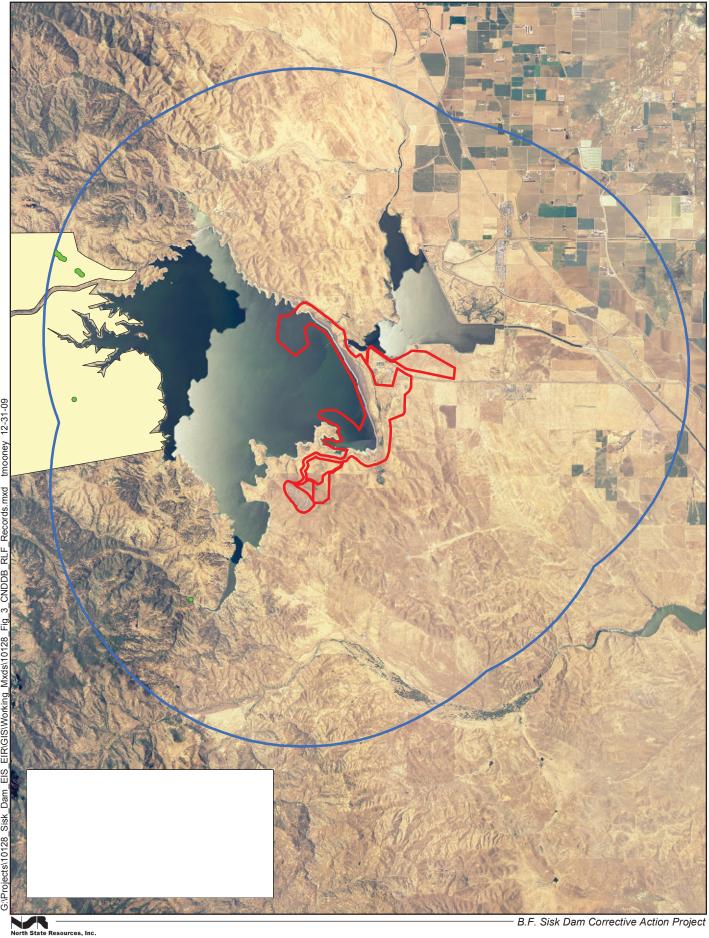
#### 6.2.1 Project Area

#### Ephemeral Drainage (Locations 6 and 11).

The features assessed at Locations 6 and 11 are part of a network of drainages that are designed to channel lake seepage water to O'Neil Forebay. These features are regularly maintained and kept clear of vegetation and were dry at the time of the assessment. Lake levels are currently too low to allow for dam seepage to occur and have been deficient for several years. Until lake levels increase substantially these features will remain dry and, therefore, will not function as red-legged frog breeding habitat.

#### Ephemeral Drainage (Location 26, 27, 28, 29, and 30)

The feature assessed at Locations 26, 27, 28, 29, and 30 is a drainage fed by a network of smaller drainages. Its primary function is to hold and transport lake seepage water to O'Neil Forebay. This feature varies in width between 3 and 15 feet. Portions are channelized with steep narrow banks, while other portions are wider and flatter. Large trees and shrubs are mostly absent from its banks;



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however, a few overhanging willows and cottonwoods are present. During the time of the assessment, the entirety of this feature lacked surface water. According to DWR representatives, the lake has been especially low for 3 to 4 years. Until lake levels increase dramatically, lake seepage will be minimal and this feature will remain predominately dry. The current lack of water in this feature makes it unsuitable as California red-legged frog breeding habitat.

#### Seasonal Wetland (Location 31)

The feature assessed at Location 31 is a wetland comprised of two main depressions that contain remnant emergent vegetation, such as cattails (*Typha* sp.) and mule fat (*Baccharis salicifolia*). Overhanging vegetation is present and includes cottonwoods and willows with coyote bush (*Baccharis pilularis*) in the upland areas. One depression is approximately 15 feet x 30 feet in size and the other is larger, at approximately 150 feet x 25 feet. This wetland derives its water from dam seepage. It was dry at the time of the assessment and appears to have been dry for some time. This feature has a maximum depth of approximately 1 foot, significantly less than the 2.3 feet required for breeding by California red-legged frogs (U.S. Fish and Wildlife Service 2007). Thus, this wetland does not provide suitable breeding habitat for the California red-legged frog.

#### Ephemeral Wetlands (Locations 32 and 34)

The features assessed at Locations 32 and 34 are wetlands that occur on the toe of the slope at the southern end of the dam. They are areas that become saturated with dam seepage, facilitating the growth of wetland vegetation. The features do not appear to retain any surface water, instead excess water drains down slope via drainage ditches to a larger drainage network. Thus, they do not provide suitable breeding habitat for the California red-legged frog.

#### **Quarry Depression (Location 35)**

The feature assessed at Location 35 has been excavated and is within the boundary of proposed Borrow Site 1. The depression has a rock aggregate substrate similar to the surrounding quarry substrate. Upland grasses and forbs grow in and out of the feature (e.g., vinegar weed (*Trichostema lanceolatum*), tarweed (*Hemizonia congesta*), and wild oats (*Avena barbata*)). The pool is approximately 10 feet x 4 feet in size with a 3 foot depth. No water was present at the time of the assessment. Based on the presence of upland vegetation in the feature, the rock aggregate soil drains very effectively and no water is retained in the pool for any significant length of time. Thus, this feature does not provide suitable breeding habitat for the California red-legged frog.

#### San Luis Reservoir (Location 45)

San Luis Reservoir has a water storage capacity of more than 2 million acre-feet and depths up to 300 feet. Habitat types and substrates vary along the lake's perimeter. This assessment location was selected based on the low gradient shoreline and the presence of significant amounts of emergent vegetation in the form of young willows and cocklebur (*Xanthium* sp.). The substrate at this location is primarily sand. No large overhanging vegetation occurs around the lake edge because water levels are significantly lower than in previous years. Currently, there are several hundred feet of barren shoreline. Further, the reservoir contains many predatory fish (e.g., striped bass (*Morone saxatilis*), channel catfish (*Ictalurus punctatus*), largemouth bass, crappie (*Pomoxis* sp.), and bluegill), which significantly reduce the quality of the lake as habitat for the California red-legged frog. Thus, California red-legged frogs are not expected to occur in this feature.

#### 6.2.2 Local Area

#### Ephemeral Drainage (Location 1)

The feature assessed at Location 1 is an approximately 75-foot long drainage that captures runoff from hill slopes north of Hwy 152. It has formed between the base of a dirt road and the highway and transports rainwater to a concrete lined ditch that runs parallel to the highway (southeast). This drainage has a natural substrate and contains grassland vegetation. It was dry at the time of the assessment and does not appear to retain water for a significant length of time. This ditch is no more than 2 feet wide and has a maximum depth of 1.5 feet. Thus, this feature does not provide suitable breeding habitat for the California red-legged frog.

#### Ephemeral Drainage (Location 3)

The feature assessed at Location 3 is a large drainage channel that runs parallel to Hwy 152. The channel and banks are heavily vegetated with coyote bush. There was no water in the channel when the assessment was conducted. This feature is part of a network of drainages that collect lake seepage from the reservoir as it percolates through the dam wall; however, this only occurs when lake levels are high. For the last several years lake levels have been too low to allow for any seepage to reach this feature. Thus, under current conditions, this feature does not provide suitable breeding habitat for the California red-legged frog.

#### Ephemeral Drainage (Location 7)

The feature assessed at Location 7 is a large ditch located north of Hwy 152. It receives water from a network of drainages on the other side of the freeway via a culvert. The ditch contains upland grasses and lacks any sign of emergent vegetation. The function of this feature is to transport dam seepage water to a larger drainage feature (Location 10) that drains to O'Neil Forebay. For the last three to four years, lake levels have been too low to allow any dam seepage to occur, causing this feature to remain dry. Currently, due to the general lack of water, this feature does not provide suitable breeding habitat for the California red-legged frog.

#### Ephemeral Drainage (Location 13)

The feature assessed at Location 13 is a drainage that exits the pond at Location 12. The drainage appears to remain dry unless the pond reaches capacity, at

which point water flows through a culvert and drains into this feature. It appears that the drainage is steep enough to drain effectively and most likely rarely retains any substantial levels of water. The lack of emergent vegetation within the feature supports this conclusion. Thus, this feature does not provide suitable breeding habitat for the California red-legged frog.

#### Ephemeral Drainage (Location 17)

The feature assessed at Location 17 is a natural drainage that transports rainwater. Small pockets of remnant wetland vegetation, such as cattails and curly dock, are present; however, the feature was dry at the time of the assessment and does not appear to retain more than 6 inches of water at any given time. Thus, this feature does not provide suitable breeding habitat for the California red-legged frog.

#### Ephemeral Drainage (Location 22)

The feature assessed at Location 22 is a small drainage that travels under an access road via a culvert. The drainage flows northeast approximately 100 feet ending in a wetland at the edge of O'Neil Forebay. The channel substrate is natural soil with abundant leaf litter, which is derived from an abundance of overhanging trees, including willows and sycamores. There is little undergrowth along the feature except for a few patches of facultative grass species within the shallow channel. Maximum water depth in this feature is less than 1 foot. Thus, this feature does not provide suitable breeding habitat for the California red-legged frog.

#### Ephemeral Drainage (Locations 40, 41, and 43)

The feature assessed at Locations 40, 41, and 43 is a natural drainage that has been diverted through culverts to accommodate a dirt road. It appears to hold some water as is evidenced by patches of remnant cattails. However, the predominant vegetation in and around this feature is upland grasses and forbs, including wild oats and thistles. The source of water for this feature appears to be storm water runoff. The drainage has low points where up to 18 inches of water could collect; however, this is probably a rare occurrence. Thus, this feature does not provide suitable breeding habitat for the California red-legged frog.

#### Ephemeral Drainage (Locations 49 and 50)

The feature assessed at Location 49 and 50 is a natural drainage that passes just east of Basalt Campground. It appears to drain water effectively, which explains the lack of emergent vegetation within the channel. The grade varies between 3 and 10 percent and the drainage is fully vegetated with upland grasses. This feature was dry at the time of the assessment but appears to have a maximum depth of less than 1 foot. Thus, because of its shallow depth and lack of emergent vegetation, this feature does not provide suitable breeding habitat for the California red-legged frog.

#### Ephemeral Pond (Location 2)

The pond at Location 2 is a man-made feature created within a natural drainage that has been artificially damned with a soil berm. Rainwater is the primary hydrologic input. Remnant facultative vegetation (plants preferring wet conditions) within the feature were observed during the assessment (i.e., smartweed (*Polygonum* sp.) and cocklebur); however, the feature was dry at the time of the assessment and all of the facultative vegetation was long dead, signifying an extended period of relative dryness. This approximately 50 foot x 50 foot feature likely holds shallow water for a portion of the year, but the evidence suggests that it is not retained long enough to support California red-legged frog breeding. Additionally, if the feature does retain water during the breeding season, it appears that water depths (1-2 foot maximum) would not be sufficient for California red-legged tadpole survival.

#### Water Treatment Ponds (Locations 4 and 5)

Two wastewater treatment ponds are associated with the San Luis Reservoir Visitors Center. At the time of the assessment, the northernmost pond had vegetation growing within its basin; however, no surface water was visible. The second pond was completely dry and had no live vegetation within it. This pond does not appear to be in use. Both ponds are enclosed in a chain-link fence topped with barbed wire and have exposed (probably maintained) upland banks. There is no overhanging vegetation on or adjacent to the ponds banks. The ponds have a maximum depth of approximately 14 feet. If sufficient water depths are maintained in these ponds during the breeding season, they may provide suitable California red-legged frog breeding habitat.

#### Ephemeral Wetland Drainage (Location 8 and 9)

The feature assessed at Locations 8 and 9 is one of the main collection points for a series of drainage ditches. Water seepage escaping the dam, which occurs when lake levels are high, primarily drains to this location because it is the lowest point in the area. Additionally, water appears to back up at this point because the pathway for the water to pass to the other side of Hwy152 is a relatively small culvert that is slightly elevated from the lowest point in the drainage. This ponding allows enough water to collect to provide proper conditions for emergent plant growth. Cattail, rabbits-foot grass, and several species of sedges were observed growing in the bed of this drainage. Further indication of past ponding was evidenced by the presence of deep cracks in the clay-like soil. The water source for this feature is primary dam seepage and secondarily rainwater runoff. Because the lake levels have been very low for several years, this drainage feature contained no standing water at the time of the assessment. Thus, currently, this feature does not provide suitable California red-legged frog breeding habitat.

#### Seasonal Wetland (Location 10)

The feature assessed at Location 10 is the main drainage system low point (before the forebay) for the areas north of the highway and west of the forebay. It also receives all dam seepage and rainwater runoff collected from the south

side of the highway north of the dam spillway via a series of drainages (specifically the features at Locations 7, 8, and 9). This roughly 2.5-acre seasonal wetland drains directly to the neck of the O'Neil Forebay when it reaches capacity. It contains patches of emergent vegetation, such as cattail and rush, in low pockets and a group of large riparian trees (e.g., willows and cottonwoods) overhangs a large portion of the feature. No water was observed in this wetland at the time of the assessment. Because current lake levels are low and dam seepage is at a minimum, this wetland does not currently provide suitable breeding habitat for the California red-legged frog. Additionally, the wetland depth appears to be less than 1 foot when functioning, below that required for suitable California red-legged frog breeding habitat.

#### Perennial Pond (Location 12)

The feature assessed at Location 12 is a man-made pond within a natural drainage area. The pond was formed when a berm was created across the natural drainage pathway. A culvert is installed near the top of the berm to allow excess water to drain downstream after the pond reaches capacity. The banks of the pond are steep and mostly bare. Sporadic emergent vegetation is present in a few locations along the waters edge, but density is minimal. The pond appears to be at least 4 feet deep at its center and provides drinking water for deer and cattle during at least a portion of the year, as is evidenced by prints and scat. This feature may provide a perennial water source with sufficient water depth for red-legged frog breeding habitat; however, the amount of emergent vegetation present for egg attachment is minimal.

#### Water Treatment Ponds (Locations 14 and 15)

The features assessed at Locations 14 and 15 are two water treatment ponds. Both ponds are approximately 160 feet x 100 feet. The banks are gravel-lined and devoid of vegetation, and both are enclosed by a chain-link fence topped with barbed wire. The basin of the southernmost pond is densely vegetated with cattails but no standing water was observed at the time of the assessment. The northernmost pond was also dry and no emergent vegetation was present. The maximum depth of these pools is approximately 4 feet; however, the typical operating depth appears to be approximately 18 inches, based on water lines and staining. Thus, under the current conditions, it appears that these ponds would be unable to support red-legged frog breeding due to their ephemeral nature and shallow water depths.

#### Emergent Wetland (Location 18)

The feature assessed at Location 18 is a large wetland that borders O'Neil Forebay. The wetland is hydrologically connected to the forebay and only receives water when the forebay water level rises to the point at which water is able to spill over a slight berm into the wetland. At the time of the assessment, O'Neil Forebay was approximately 3 feet too shallow for this connection to occur. The wetland is large, approximately 2.25 acres in size, and contains abundant emergent vegetation (primarily cattail) with overhanging willows along one side. Portions of the wetland appear to be up to 4 feet deep. During the assessment, several green herons (*Butorides virescens*) were observed foraging in the wetland and crayfish were observed in shallow areas. Although favorable habitat components are present at this site (permanent water deeper than 2.3 feet deep with abundant emergent vegetation), it is unlikely that redlegged frogs utilize it as a breeding area. The large number of predatory birds, the presence of crayfish in high density, and the likelihood of predatory fish migrating from the forebay to the wetland significantly reduces its quality as California red-legged frog habitat.

#### O'Neil Forebay (Location 19)

O'Neil Forebay is approximately 18 acres in size with a maximum depth of approximately 57 feet. Large portions of the forebay have dense wetlands along the edges, and riparian areas containing large cottonwoods and willows border the forebay at several locations. The forebay connects to a large pump house at the base of San Luis Reservoir where water is transferred to and from the lake to produce energy. Several predators of the California red-legged frog were observed foraging within the forebay, including great blue herons (*Ardea herodias*), great egrets (*Ardea alba*), mergansers (*Mergus* sp.), and several species of fish. In addition, according to fishing records striped bass, channel catfish, largemouth bass, crappie, and bluegill are regularly caught in the forebay. The large number of predators occurring in the forebay significantly reduces its quality as California red-legged frog habitat.

#### Ephemeral Pond (Location 20)

The feature assessed at Location 20 is an excavated cattle pond. It is devoid of vegetation and cracked mud is visible in its basin. Upland grasses surround the feature. Water for this feature appears to be artificially fed from a nearby electrical facility. This feature was dry at the time of the assessment. When full, its maximum depth is less than 6 inches. Due to its shallow depth, the feature would not provide suitable California red-legged frog breeding habitat.

#### Ephemeral Pond (Location 21)

The feature assessed at Location 21 is a large pond at the base of a hill. Some manipulation of the earth in this area to help retain water for cattle use is apparent. The source of water for this pond is a water tower located directly south of the feature. Water was released from the water tower between field visits to the site. When the initial assessment was conducted, there was no water at this location. When full, the pond is approximately 160 feet x 75 feet in size. No evidence of emergent vegetation was observed in the feature. The maximum depth of the pond is approximately 1 foot. This feature lacks emergent vegetation, water of sufficient depth, and likely water of sufficient duration, to support California red-legged frog breeding.

#### Treatment Ponds (Locations 23, 24, and 25)

Locations 23, 24, and 25 represent three treatment ponds associated with a pump-house facility. Because of restricted access, these features were assessed from the top of Sisk Dam. The two westernmost ponds are located in the corner

of a large crushed aggregate pad associated with the power lines and pumphouse electrical facility. The westernmost pond is approximately 30 feet x 50 feet. This pond seems to be the only pond in use, based on the green vegetation and the presence of a 10 foot x 10 foot shallow pool present within its basin. The pond to the east is larger, approximately 30 feet x 100 feet in size, and does not appear to be in use, based on the lack of standing water. The slopes and surrounding upland areas adjacent to these ponds are devoid of vegetation. The third pond, east of the two previously described, is a small depression in a naturalized area just beyond the aggregate pad at the base of the dam slope. This feature is approximately 20 feet x 15 feet in size and was dry at the time of the assessment. This pond has upland grasses growing within and up its banks. The max depth of the two pools on the aggregate pad is approximately 4 feet and the maximum depth of the third pool is estimated to be less than 2 feet deep. It is unlikely that these pools retain water at sufficient depth and for a sufficient duration to provide suitable California red-legged frog breeding habitat.

### **Ephemeral Pond (Location 33)**

The feature assessed at Location 33 is an excavated hole that may retain marginal rainwater runoff for a short time. Currently, the feature appears to be associated with a nearby OHV recreational track and to be used as an obstacle/jump. Within the basin of the feature, there is little vegetation and several rodent burrows were evident. The feature is approximately 8 feet deep but it is highly unlikely that water levels would ever reach this capacity due to a general lack of water sources in the area. Additionally, the feature is suspected to drain efficiently, heightened by the numerous ground squirrel burrows in the depression. Lack of emergent vegetation and the apparent ephemeral nature of the feature make this site an unlikely candidate for California red-legged frog breeding.

#### **Quarry Depressions (Location 36)**

Location 36 represents three depressions in close proximity to each other. All of the features have been excavated and are within the boundary of Borrow Site 1. All three depressions have a rock aggregate substrate similar to the surrounding quarry substrate; upland grasses and forbs grow in and out of these features (e.g., vinegar weed, tar weed, wild oats). The pools are 15 feet x 3 feet, 12 feet x 4 feet, and 100 feet x 30 feet, and each is 2-3 feet deep. No water was present in any of the depressions at the time of the assessment. Based on the vegetation present, the rock aggregate soils drain very effectively and no water is retained within these pools for any significant length of time. Thus, these features would not provide the long-term water source needed for successful California red-legged frog breeding.

#### Perennial Wetland (Location 37)

The feature assessed at Location 37 is a wetland adjacent to a dirt road. An upslope spring provides water to this linear feature (70 feet x 4 feet), which has a maximum depth of 4 inches. The wetland contains emergent vegetation such

as bulrush (*Scirpus* sp.), nutsedge (*Cyperus* sp.), cocklebur, duckweed (Lemnaceae), rabbits-foot grass (*Polypogon* sp.), and cattails. However, the feature does not have sufficient depth to provide suitable California red-legged frog breeding habitat.

# Perennial Pond (Location 38)

The pond at Location 38 was assessed from aerial photographs because the site is located on private property and access was not available. Based on inspection of several historic aerial images, the pond is estimated to be approximately 5,000 square feet in size. The feature appears to be manmade, probably for cattle, and no bank vegetation was visible on the aerials. The substrate and maximum depth of the pond could not be determined. Based on this information, it is possible that this pond could be used as California red-legged frog breeding habitat; however, emergent and bank vegetation for egg attachment and cover appears to be limited and water depth may be insufficient for successful tadpole survival during metamorphosis.

# Perennial Pond (Location 39)

The pond at Location 39 was assessed from aerial photographs because the site is located on private property and access was not available. Based on inspection of several historic aerial images, the pond is estimated to be approximately 5,200 square feet in size. The feature exists at the base of surrounding hill slopes in a natural path for rainwater drainage, and appears to have been created by damming of this natural drainage. The pond has a main pool with a long "finger" channel on its western end. No emergent or overhanging vegetation was visible on the aerials. The substrate and maximum depth of the pond could not be determined. Based on this information, it is possible that this pond could be used as California red-legged frog breeding habitat; however, emergent and bank vegetation for egg attachment and cover appears to be limited and water depth may be insufficient for successful tadpole survival during metamorphosis.

# Water Treatment Pond (Location 42)

The feature assessed at Location 42 appears to be a treatment pond associated with the Basalt Campground facility. It is a concrete lined pool approximately 25 feet x 8 feet in size, and is permanently inundated to a depth of approximately 2.5 feet. Large boards cover 90 percent of the water surface; only small gaps and cracks remain accessible between the boards and 5-inch wire mesh fence encloses the feature. The water appears stagnant and no emergent vegetation is present. Primarily upland grasses grow around the feature with a few sedges growing near the pool edge. This feature lacks the emergent vegetation needed for California red-legged frog breeding habitat. Further, the water may be contaminated.

# Treatment Ponds (Locations 16 and 44)

The features assessed at Locations 16 and 44 are treatment ponds. Each pond is 100 feet x 30 feet in size and has a substrate of rock and gravel. No vegetation grows in or around these ponds and a chain-link fence surrounds them. There

was no water in these features at the time of the assessment. The ponds are estimated to have a maximum depth of 5 feet. The source of water for these features is unclear; however, the Basalt Campground, which is several hundred feet down slope of these ponds, has the nearest facilities. These features have insufficient perennial water levels and emergent vegetation to support California red-legged frog breeding habitat.

### **Ephemeral Pond (Location 46)**

The pond at Location 46 was assessed from aerial photographs because the site is located on private property and access was not available. Based on inspection of several historic aerial images, the pond is estimated to be approximately 2,500 square feet in size. The pond appears to have been created by damming of the natural drainage. It is probably used by cattle, and no bank vegetation was visible on the aerials. The substrate and maximum depth of the pond could not be determined. Based on this information, it is possible that this pond could be used as California red-legged frog breeding habitat; however, emergent and bank vegetation for egg attachment and cover appears to be limited and water depth may be insufficient for successful tadpole survival during metamorphosis.

### Perennial Pond (Location 47)

The pond at Location 47 was assessed from the top of basalt hill with binoculars because access to the feature was limited and would interrupt a local herd of tule elk (*Cervus elaphus nannodes*) that were foraging there. The feature is a large depression along the reservoir bottom that remained filled after the reservoir receded. It also receives some water input from rain events and spring runoff. The feature is estimated to be at least 150 feet x 50 feet in size and is surrounded by an approximate 40-foot buffer of herbaceous vegetation that touches the waters edge on all sides. Substrate and maximum depth could not be determined. This feature could be utilized as California red-legged frog breeding habitat; however, the feature may be absorbed by the reservoir if water levels return to historic elevations (levels have remained at current elevations for approximately 3 to 4 years). In addition, there is a high likelihood that predatory fish were stranded in the feature when lake levels dropped, which reduces the quality of the habitat for California red-legged frogs.

#### Perennial Pond (Location 48)

Because of restricted access, the pond at Location 48 was assessed from the top of basalt hill. Based on the inspection of several historic aerial images, the pond is estimated to be approximately 2,500 square feet in size when full; however, at the time of the assessment the feature was only about 300 square feet in size. The pond appears to have been created by damming of the natural drainage, probably for use by cattle. No emergent vegetation was visible; however, the water was very green and contained dense algae. No overhanging vegetation exists and the banks are mostly bare with patches of upland grasses. The substrate appears to be soil and the depth at the time of the assessment was estimated at less than 12 inches. The maximum depth of the pond appears to be no more than 3.5 feet, based on water lines. Based on current conditions, the pond appears to lack the emergent or overhanging vegetation necessary to be suitable as California red-legged frog breeding habitat.

# Chapter 7 Summary

NSR conducted a California red-legged frog site assessment for the 2,578.80acre B.F. Sisk Dam Corrective Action Project in Merced County, California. The site assessment was conducted in accordance with the USFWS *Guidance on Site Assessment and Field Surveys for California Red-legged Frogs* (2005).

The project area is located within the currently known range of the California red-legged frog. The nearest designated critical habitat occurs approximately 3 miles west of the project area. A review of the CNDDB revealed four reported occurrences of the species within 5 miles of the project site (California Department of Fish and Game 2009).

Survey results indicate that no suitable California red-legged frog breeding habitat [i.e., dense, shrubby, or emergent riparian vegetation closely associated with deep (greater than 2.3-feet deep) still or slow-moving water] is present within the project area.

Further, survey results indicate that the majority of the sites in the local assessment area (the area within 1 mile of the project boundary) are unsuitable as California red-legged frog breeding habitat, primarily due to water of insufficient depth and/or duration. Those features retaining enough water to support the frog often had other problematic characteristics that would eliminate, in most cases, the possibility of red-legged frogs utilizing the site as breeding habitat.

If reservoir levels rise significantly and dam seepage increases substantially, some of the features that currently do not hold water of sufficient depth or for a sufficient duration may begin to retain enough water to warrant reconsideration as potential habitat for the California red-legged frog. However, based on current trends and recent lake data over the last 5 years, it is doubtful that San Luis Reservoir water levels will return to historic highs any time in the near future

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# Chapter 8 References

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# **APPENDIX A**

Resume for Lead Assessment Biologist



**EDUCATION** BA in Environmental Studies with a minor in Biological Sciences California State University Sacramento.

## **ADDITIONAL TRAINING:**

- Biology and Management of the California Red-legged frog workshop 2008
- Certified Wetland Delineator: 2003 (Wetland Training Institute)
- Studied and worked under the supervision of an ISA Certified Arborist for approximately 3 years.

## SYNOPSIS:

Mr. Amrhein has over 4 years of experience as a professional biologist, conducting environmental/biological services for development projects and municipal planning projects, including research, preparation of environmental documentation, and fieldwork such as biological assessments, tree surveys, wetland delineations, specialstatus species investigations, valley elderberry longhorn beetle surveys, nest surveys, environmental monitoring of construction sites, and monitoring for mitigation requirements. In 2008, Mr. Amrhein attended a California red-legged frog training workshop which included instruction on the proper handling and identification of adult and larval stages of red-legged frogs, bull frogs, and western toads; day and nighttime survey protocols and participation; and a review of various frog calls.

# **Relevant Experience:**

**Soda Bay Road Bridge Replacement Project** — Lake County, CA. Wildlife Biologist. Conducted protocol-level California red-legged frog surveys for the project. Completed 2 daytime and 4 nighttime surveys. Fieldwork was conducted under the supervision of an NSR biologist authorized under a U.S. Fish and Wildlife Service Recovery Permit for the California red-legged frog.

**Sly Park Road Bridge Replacement Project** — **El Dorado County, California.** Wildlife Biologist. Conducted a California red-legged frog site assessment and completed protocollevel field surveys. Twelve aquatic sites were identified within 1-mile of the project site and evaluated for habitat suitability.

**Business Park Drive/Durock Road Intersection Improvement Project** — **El Dorado County, California.** Wildlife Biologist. Conducted a red-legged frog site assessment in which three aquatic sites were evaluated for habitat suitability. The specific focus of these sites was to determine if introduced aquatic predators such as bullfrogs and bass were present at these locations. **Kamps Ranch Biological Resource Assessment** — **Madera County, California.** Wildlife Biologist. Working with a California tiger salamander (CTS) permit holder, Mr. Amrhein discovered a small population of larval stage CTS in several cattle ponds. Habitat characteristics, GPS coordinates, and photographs were submitted to the state for entry into the CNDDB database.

Lewis Stein Bridge Project – Elk Grove, California. Monitoring Biologist. Monitored all construction activities at the project site while construction was in progress. Project activities were conducted in a sensitive giant garter snake (GGS) mitigation area. Mr. Amrhein provided worker training for the identification of sensitive wildlife species and the proper procedures to follow when sensitive species were detected within the project boundaries. Mr. Amrhein worked with Mr. Eric Hanson (Recovery Permit holder for GGS) to identify GGS and report potential GGS sightings.

# Biological Investigations for Environmental Impact Reports of various projects in

**California.** Mr. Amrhein performs site reconnaissance level surveys, and writes biological evaluations to be included as part of Environmental Impact Reports for various projects throughout California. To complete these tasks he conducts research using the California Natural Diversity Database and California Wildlife Habitat Relationship System database, as well as consulting with the U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, California Department of Fish and Game, California Native Plant Society, local government officials, and local environmental agencies to address site-specific natural resources.

**Wetland Delineation for various projects in California**. Mr. Amrhein conducts wetland delineations, following the U.S. Army Corps of Engineers guidelines. He considers hydrology, vegetation, and soil to determine if habitat meets the requirements to be considered an official wetland per the U.S. Army Corps requirements.

**Special Status Species investigations and consultations for various projects in California**. Mr. Amrhein confirms the presence/absence of special status plant and animal species and potential habitat for these species (e.g., Swainson's hawk, burrowing owl, and giant garter snake) at various project locations in California. He consults with the U.S. Fish and Wildlife Service, California Department of Fish and Game, and U.S. Army Corps of Engineers (when appropriate) regarding appropriate survey/reporting protocols for specific species.

# **APPENDIX B**

Habitat Assessment Data Sheets

Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

	Site Assessment reviewed by (FWS Field Office) (date) (biologist)
	Date of Site Assessment: (mm/dd/yyyy) Site Assessment Biologists: (Last name) (first name) (Last name) (first name) (first name) (first name)
	(Last name) (first name) (Last name) (first name) Site Location: <u>Merced (o. : o an insectioned portion of Sa built Gonzage Lead</u> Gra (County, General location name, UTM Coordinates or Lat./Long. or T-R-S). **ATTACH A MAP (include habitat types, important features, and species locations)**
	Proposed project name: <u>B.F. Sisk Dam Corrective Action</u> Project Brief description of proposed action:
	<ol> <li>Is this site within the current or historic range of the CRF (circle one)? YES NO</li> <li>Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO If yes, attach a list of all known CRF records with a map showing all locations.</li> </ol>
ecation.	GENERAL AQUATIC HABITAT CHARACTERIZATION (if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)  POND: Size:
	Vegetation:       emergent, overhanging, dominant species:
	Perennial or Ephemeral (circle one). If ephemeral, date it goes dry: Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM: Bank full width:  $2-\frac{2}{1}$ . Depth at bank full:  $15 \frac{2}{1}$ Stream gradient: 7 1/2 Are there pools (circle one)? YES (NO) If yes, Size of stream pools: Maximum depth of stream pools: Characterize non-pool habitat: run, riffle, glide, other: Vegetation: emergent, overhanging, dominant species: \_ upland grasses (no envergent) Substrate: <u>Sxil(natural)</u> + roncrate segment gradual slope **Perennial or Ephemeral** (circle one). If ephemeral, date it goes dry: Other aquatic habitat characteristics, species observations, drawings, or comments: -Fredure appears to be a Hury drainage Irunoff ditch Feature is natural 6/w DFOR Fence + Hury Connects to concrete lined ditch (3f4 wide) water: Natural source (nonoff) - upland grasses, no veq. - Diy @ time of as sessment Photo #7260-7262 **Necessary Attachments:** 

- 1. All field notes and other supporting documents
- 2. Site photographs

Site Assessn	ient reviewed by	(FWS Field Office)	(date)	(hiologist)	
	te Assessment: <u>//</u> sment Biologists:	(mm/dd/yyyy)	Brandon (first name)	(Last name)	TPMg (first name)
	(County, Gen		e, UTM Coordinates	(Last name) of <u>San Luis G</u> or Lat./Long. or T-R- catures, and species local	S).
	roject name: <u>B</u> iption of proposed		an Correcto	ve Action Prej	ect
2) Are ther	e known records o	of CRF within 1	inge of the CRF (o .6 km (1 mi) of th with a map showing	e site (circle one)?	NO YES NO
POND: Size	(if multiple ponds or str : <u>504</u> etation: emergent	soverhanging, overhanging, overhanging, overhanging, overhanging, other states of the	proposed action area, fi Ma dominant species:	ACTERIZATION Il out one data sheet for ed aximum depth: ASHCE (mille D fenne(	1-2ft,
Subs	trate: <u>Sol</u> (	cle one). If epher	meral, date it goes pendix D.	dry: ssment Data Sheet	

Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

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EAM:	
Depth at bank ful	īl:
Stroum gruttom.	
Are there pools (	circle one)? YES NO
If yes,	
	ze of stream pools:
M	ze of stream pools:aximum depth of stream pools:
141	
Characterize non	-pool habitat: run, riffle, glide, other:
Characterize non-	-poor naonal. Tun, mue, gilde, ouler.
Vegetation: emer	rgent, overhanging, dominant species:
	/
Substrate:	
Bank description:	
1	
	/
nial or Ephemera	l (circle one). If ephemeral, date it goes dry:

Other aquatic habitat characteristics, species observations, drawings, or comments: - Feature is a damned natural drainage. (Impounded, Broad, flat gradual slope near dam - No water present @ time of assessment. Feature appears to have been dry for several years. - Not CREF breeding habitard, - Not CREF breeding habitard, - No colvert present for water drainage through dam/ impounded side - I the many collection feature only Necessary Attachments: Photo #5: 7264-68

- 1. All field notes and other supporting documents
- 2. Site photographs

Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

	Site Assessment reviewed by (FWS Field Office) (date) (biologist)
	Date of Site Assessment: <u>10/21/09</u> (mm/dd/yyyy) Site Assessment Biologists: <u>Amrhein Brandon</u> <u>Perkins Terra</u> (Last name) (first name) (first name) (first name)
	(Last name) (first name) (Last name) (first name) Site Location: Merced 6, in an insectioned portion of San Luis Gonzaga Land Gran (County, General location name, UTM Coordinates or Lat./Long. or T-R-S).
	**ATTACH A MAP (include habitat types, important features, and species locations)** Proposed project name: <u>B.F. S.s.K. Dam Corrective Action</u> Project Brief description of proposed action:
	<ol> <li>Is this site within the current or historic range of the CRF (circle one) YES NO</li> <li>Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO If yes, attach a list of all known CRF records with a map showing all locations.</li> </ol>
Location	GENERAL AQUATIC HABITAT CHARACTERIZATION     (if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)  POND:     Size: Maximum depth: Vegetation: emergent, overhanging, dominant species:
	Substrate:  Perennial or Ephemeral (circle/one). If ephemeral, date it goes dry: Appendix D.
	California Red-legged Frog Habitat Site Assessment Data Sheet

**STREAM**:

Bank full width:	15'	
Depth at bank full:	21	~
Stream gradient:	3070	

Are there pools (circle one)? YES (NO)

If yes,

Size of stream pools: \_\_\_\_\_ Maximum depth of stream pools: \_\_\_\_

Characterize non-pool habitat: run, riffle, glide, other:

Vegetation: emergent, overhanging, dominant species: \_\_\_\_

Dominant: coupte bush some upland oraspas/weeds Substrate: <o

Bank description: densely colleged w/ vegetation

Perennial or Ephemeral (circle one). If ephemeral, date it goes dry: dependent on lake Levels.

Other aquatic habitat characteristics, species observations, drawings, or comments:

- Feature runs parallel to 152. No water present. Does not appear to hold water for a long time period: therefore unlikely to support CRLF habitat. - Dense canopy could of coyote bush.

#### **Necessary Attachments:**

1. All field notes and other supporting documents

2. Site photographs

	Californ	A uia Red-legged Frog	ppendix D. Habitat Site Asse	essment Data Sheet	
Site Ass	sessment reviewed	by (FWS Field Office)	(date)	(biologist)	
Date o	f Site Assessme	nt: 09/30/2009			
-	ssessment Biolo	(mm/dd/yyyy)	Brandon	Perkins	Terra
	`	(Last name)	(first name)	(Last name)	(first name)
		(Last name)	(first name)	(Last name)	(first name)
Site Lo	ocation: <u>Merced</u>	Co. in an inse	ctioned portion	1 at San Luis	Gonzaga 1
				,	
	**ATTACH	A MAP (include hab	itat types, important fe	atures, and species loca	tions)**
	ed project name: escription of pro		Pam Correcti	ive Action 1	roject
Dictu	escription of pro	poseu action.			
				ĩ	
			-	л.	
-				<u>`</u>	
1) Is th	is site within the	e current or historic r	ange of the CRF (c	circle one)? YES	NO
2) Are	there known rec	ords of CRF within	1.6 km (1 mi) of the	e site (circle one)?	YES NO
	If yes, attach a list of	of all known CRF records	s with a map showing a	all locations.	
	GENERA	L AQUATIC HA	BITAT CHAR	ACTERIZATI	<u>ON</u>
6 POND:	(if multiple pond	ls or streams are within the	proposed action area, fi	ll out one data sheet for ea	ach)
POND:	: Size:		Ма	ximum depth:	
	vegetation: eme	ergent, overhanging,	dominant species:		
		· · · /			
	Substrate:				
		`/			
Perenn	ial or Ephemera	al (circle one). If ephe		s dry:	
			opendix D.		

3

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STREAM: Bank full width: 3HDepth at bank full: 18 in Stream gradient: Are there pools (circle one)? YES (NO) If yes, Size of stream pools: Maximum depth of stream pools: glide Characterize non-pool habitat: run, riffle, glide, other: \_\_\_\_ Vegetation: emergent, overhanging, dominant species: moused remnants of emergent veg Substrate: dirt / SOI Bank description: exposed, steep banks Perennial of Ephemeral ) (circle one). If ephemeral, date it goes dry: see is wet when lake levels are high. Photo #'5 69(010 (389 6990 7007 see also 6091- 669) Other aquatic habitat characteristics, species observations, drawings, or comments: -Ditch is maintaing + Kept clear of vegetation. Some upland grasses along upper bank. - This seep has been dry approximately 3yrs. (per DWR) due to low lake levels. - water source = lake, - During time of assessment, water feature appears to have been dry for let months. Not suitable for

#### **Necessary Attachments:**

- 1. All field notes and other supporting documents
- 2. Site photographs

<u>California Re</u>	d-legged Frog H	labitat Site Asse	ssment Data Shee	<u>t</u>
Site Assessment reviewed by	(FWS Field Office)	(date)	(biologist	)
Date of Site Assessment: <u>09</u> Site Assessment Biologists:	(mm/dd/yyyy) Amrhen (Last name)	Brandon (first name)	(Last name)	(first name)
Site Location: <u>Merred</u> 6. (County, Gend **ATTACH A M	eral location name,		or Lat./Long. or T-R	
Proposed project name: <u>B</u> , Brief description of proposed	F. SISK T		tive Action	Project
<ol> <li>Is this site within the current</li> <li>Are there known records on If yes, attach a list of all known</li> </ol>	of CRF within 1.6	5 km (1 mi) of the	e site (circle one)?	NO YES NO
$\frac{\text{GENERAL AC}}{\text{(if multiple ponds or str}}$ $\frac{\text{POND:}}{\text{Size:} \underline{B} - 4 \text{ yds}}$	reams are within the pr	roposed action area, fil	ACTERIZATI	each)
Vegetation: emergent <u>A-unidentified</u> <u>B-unidentified</u> Substrate: <u>Soil/g</u>	l grasses. 2 grasses	(green)	try I dead).	· · · · · · · · · · · · · · · · · · ·
Perennial or Ephemeral <i>circ</i> <u>California Rec</u>	Арр	endix D.	dry: <u>Jependen</u> ssment Data Shee	USE

Appendix D.

#### STREAM:

Bank full	width:
Depth at l	bank full:
Stroom or	ndiouti
Stream gr	radient:
Are there	pools (circle one)? YES NO
If	yes,
	Size of stream pools:
	Maximum depth of stream pools:
<b>C1</b>	
Character	ize non-pool habitat: run, riffle, glide, other:
Vagatation	nt amongout available la sing tanging
vegetatio	n: emergent, overhanging, dominant species:
Substrate:	
Substrate.	/
Bank desc	ription: _/
	/
	/
nial or Eph	nemeral (circle one). If ephemeral, date it goes dry:

Other aquatic habitat characteristics, species observations, drawings, or comments: - Feature appears to serve as water treatment ponds for usitar 2 pands connected by cultured. 1st pond drains to second, conte ante Pord I has no visible surface water Emergert veg (weeds, grasses) is green, water meter in center of pond Imar depth of meter is 1444 Pord 2 is dry; has no green vegetation Doesn't appear to be -Both features have exposed upland banks, enclosed by barbed wire fence. Photo#'s: 7008 - 7010

#### **Necessary Attachments:**

- 1. All field notes and other supporting documents
- 2. Site photographs

	Site Assessment reviewed by (FWS Field Office) (date) (biologist)	
	Date of Site Assessment: 10/21/2009 (mm/dd/yyyy) Site Assessment Biologists: Amrhein Brandon (Last name) (first name) (Last name) (first name) (first name)	
	(Last name) (first name) (Last name) (first name) Site Location: Merced G. in an unsectioned portion of San Luis Gonzaga Land (County, General location name, UTM Coordinates or Lat./Long. or T-R-S). **ATTACH A MAP (include habitat types, important features, and species locations)**	Gr
	Proposed project name: <u>B.F. Sisk Dam Corrective Action Project</u> Brief description of proposed action:	
	<ol> <li>Is this site within the current or historic range of the CRF (circle one)? YES NO</li> <li>Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO If yes, attach a list of all known CRF records with a map showing all locations.</li> </ol>	
Locatio	GENERAL AQUATIC HABITAT CHARACTERIZATION     (if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)     POND:     Size: Maximum depth: Vegetation: emergent, overhanging, dominant species:	
	Substrate:	

Appendix D. <u>California Red-legged Frog Habitat Site Assessment Data Sheet</u>

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**STREAM**: Bank full width: |-2|Depth at bank full: 5-(o f+Stream gradient: 37. Are there pools (circle one)? YES (NO)If yes, Size of stream pools: Maximum depth of stream pools: Characterize non-pool habitat: run, riffle, glide, other: Vegetation: emergent, overhanging, dominant species: minute emergen-Substrate: Soi acasses along bon las! Bank description: \_\_\_\_\_a erosion is minimal Perennial or Ephemeral (circle one). If ephemeral, date it goes dry: dened on lake Other aquatic habitat characteristics, species observations, drawings, or comments: Feature is part of seepage system. Water source is defined from lake seepage when awater level is high. Drains eventually to feature 10. Feature dry a time of survey. Feature does not appear to retain water (evident by lack of emergent veg) parallels Hwy/borbed wire fence re (Disturbed through **Necessary Attachments:** #:7240-40 1. All field notes and other supporting documents 2. Site photographs Maps with important habitat features and species location

	<u>California Re</u>		oendix D. Iabitat Site Assessi	<u>ment Data Sheet</u>	· ·
Site	Assessment reviewed by	(FWS Field Office)	(date)	(biologist)	
	te of Site Assessment: <u>Ø</u> e Assessment Biologists:	(mm/dd/yyyy)	Brandon (first name)	(Last name)	(first name)
		(Last name)	(first name)	(Last name)	(first name)
Site			ioned portion of UTM Coordinates or	San Luis Gonza Lat./Long. or T-R-S	
	**ATTACH A M	AP (include habitat	t types, important featu	res, and species locatio	ns)**
	posed project name: ef description of proposed		Dam Correc	tive Action	Project
				3 	
	•				
1)	Is this site within the curre	ent or historic ran	ge of the CRF (circ	le one)? YES N	0
2) .	Are there known records of If yes, attach a list of all k				ES NO .
Location 849 PO		reams are within the pr $5-f^{+}$ ,	BITAT CHARA roposed action area, fill o Maxi		h)
	Vegetation: emergent RADDH'S FOOT GIVE report, OVERHA	ass, sedge ( anco: coyote	Junus sp?) → bosh	see wetland	ail lelinuction
	Substrate: <u>Soil / ve</u>	ay dry w/lac	ge, deep and	cks.	
Per	ennial or Ephemeral (cir <u>California Re</u>	Арр	neral, date it goes d endix D. abitat Site Assess		lake Levels

		A	ppendix D.			
California	<b>Red-legged</b>	Frog	Habitat Site	e Assessment	Data	Sheet

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**STREAM**:

Bank full width:	•
Depth at bank full: _	
Stream gradient:	

Are there pools (circle one)? YES NO If yes,

03,

Size of stream pools: \_\_\_\_\_ Maximum depth of stream pools: \_\_\_\_

Characterize non-pool habitat: run, riffle, glide, other: \_\_\_\_\_

Vegetation: emergent, overhanging, dominant species: \_\_\_\_

Substrate:

Bank description:

Perennial or Ephemeral (circle one). If ephemeral, date it goes dry: \_\_\_\_

Other aquatic habitat characteristics, species observations, drawings, or comments: - Feature is comprised of multiple differes draining to a depression containing cattails + other wetland This feature passes under freeway + dirt road via colvert - Feature has been dry for several years per DWP. Dam seepage a higher lake levels may act as a water source for this feature. However, lake levels are too low for enough water to support CRUF breeding habitat. -maint. road boordering me edge of feature free of vegetation.) **Necessary Attachments:** 

- 1. All field notes and other supporting documents
- 2. Site photographs

Photo#'s: 6993-7004

Appendix D.	
California Red-legged Frog Habitat Site Assessment Data Shee	t

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	Site Assessment reviewed by	(FWS Field Office)	(date)	(biologist)	
	Date of Site Assessment:	<u>09</u> /28/2009 (mm/dd/yyyy) <u>Amch ein</u> (Last name)	Brandon (first name)	<u>Perkins</u> (Last name)	Terra (first name)
	Site Location: <u>Merced</u> (County, Gen (County, Gen	eral location name	(first name) <u>Sectored parti</u> , UTM Coordinates or at types important feature	C	
	Proposed project name: <u>B</u> . Brief description of proposed	F. Sisk action:	Dam Gired	tive Actio	n Project
	<ol> <li>Is this site within the curre</li> <li>Are there known records of If yes, attach a list of all known</li> </ol>	of CRF within 1.	.6 km (1 mi) of the s	ite (circle one)?	NO YES NO
	O <u>GENERAL AC</u> (if multiple ponds or str POND: Within drain Size: <u>~ 2,5 A</u>	reams are within the p	BITAT CHARA proposed action area, fill on Dry on asse Maxin	ut one data sheet for ea	ch)
	Vegetation: emergent OVERHANG: Willow Substrate: <u>Soil</u>	N, Cotton u	lominant species: <u>Er</u>		
]	Perennial or Ephemeral (cire California Ree	Арј	neral, date it goes dr pendix D. Iabitat Site Assessr	$\mathcal{O}$	

STREAM:
Bank full width:
Depth at bank full:
Stream gradient:
Are there pools (circle one)? YES NO
If yes,
Size of stream pools:
Maximum depth of stream pools:
Characterize non-pool habitat: run, riffle, glide, other:
Vegetation: emergent, overhanging, dominant species:
vegetation. emergent, overhanging, dominant species.
/
Sub-strates
Substrate:
Bank description:
Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:
Other aquatic habitat characteristics, species observations, drawings, or comments: road boarder
Outer aquatic natival characteristics, species observations, drawings, or comments:

0 - Feature sits in a low drainage depression Dense lifed overhanging veg (mostly willow) - Not artifically impounded feature - Water source: ground appears to be moist @ time of assessment. Natural runoff: - Deer, jack rabbit, marning dove. - upland habitat: grassland. Photo#: 6922-6927

#### **Necessary Attachments:**

- 1. All field notes and other supporting documents
- 2. Site photographs

Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

	Site Assessment reviewed by	(FWS Field Office)	(date)	(biologist)	)	
	Date of Site Assessment: <u>//</u> Site Assessment Biologists:	(mm/dd/yyyy) (mm/dd/yyyy) (Last name)	Brandon (first name)	Perkins (Last name)	(first name)	
	Site Location: <u>Merced</u> (County, Gen **ATTACH A M	eral location name	(first name) (first name) (CCHMCal portion , UTM Coordinates or ) at types, important featur	Lat./Long. or T-R-		Gant
	Proposed project name: <u>B</u> . Brief description of proposed	<u>F. Sisk</u> T action:	Dam Corrective	e Action Pr	ojeit	
	<ol> <li>Is this site within the curre</li> <li>Are there known records on If yes, attach a list of all known</li> </ol>	of CRF within 1.	.6 km (1 mi) of the si	te (circle one)?	NO YES NO	
locatio	POND: (4-cor-dropsh Size: 35-74/2019 ×	eams are within the p aped 35 wtde		tt one data sheet for e	iach) 4.f.f.	
	Vegetation: emergent smartweed, rak underwater veg Substrate: <u>soil</u>					
¢	Perennial or Ephemeral (ciro <u>California Rec</u>	Ap	neral, date it goes dr p <b>endix D.</b> Iabitat Site Assessn			

STREAM:	
Bank	full width:
Depth	at bank full:
Stream	n gradient:
Are th	ere pools (circle one)? YES NO
	If yes,
	Size of stream pools: Maximum depth of stream pools:
Charac	cterize non-pool habitat: run, riffle, glide, other:
	/
Vegeta	ation: emergent, overhanging, dominant species:
, egen	anon: emergent, overhanging, dominant speeres.
Substra	ate:
Bank d	lescription:
	<u>/</u>

Perennjal or Ephemeral (circle one). If ephemeral, date it goes dry:

Other aquatic habitat characteristics, species observations, drawings, or comments: - Feature exists in a hill recess: Excavated + impounded culvert connected to and draming into ditch (feature #13) a time of survey, culvest is 177 above water surface + 60-90%e - Macroinvert present: water striders. We other animals observ Deer + wildlife trails present to Deer + wildlife trails present to Autor source: likely natural. emergent vigetalia, exists along fattle edges - CRLF potential hab? - Photo #5: 7250-54

#### **Necessary Attachments:**

- 1. All field notes and other supporting documents
- 2. Site photographs

	Site Assessment reviewed by (FWS Field Office) (date) (biologist)
	Date of Site Assessment: 16/22/2009
	Site Assessment Biologists: <u>Amrhein Brandon</u> <u>Perkins Telra</u> (Last name) (first name) (first name) (first name)
	(Last name) (Inst name) (Last name) (Inst name)
,	(Last name) (first name) (Last name) (first name)
	Site Location: Merced Co. in an unsectioned portion of San Luis Gronzaga L. (County, General location name, UTM Coordinates or Lat./Long. or T-R-S).
	**ATTACH A MAP (include habitat types, important features, and species locations)**
	Proposed project name: <u>B.F. Sisk Dam Corrective</u> Action Action
	Brief description of proposed action:
	•
	1) Is this site within the current or historic range of the CRF (circle one? YES NO
	<ol> <li>Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO If yes, attach a list of all known CRF records with a map showing all locations.</li> </ol>
	<b>GENERAL AQUATIC HABITAT CHARACTERIZATION</b>
	(if multiple ponds or streams are within the proposed action area, fill out one data sheet for each) <b>POND:</b> Size: Maximum depth:
	Vegetation: emergent, overhanging, dominant species:
	Substrate:
	Substrate:
	Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:

		A	ppendix D.			
California	<b>Red-legged</b>	Frog	Habitat Site	Assessment	<u>Data</u>	Sheet

STRE	AM: Bank full width: $(p-f)$ . Depth at bank full: $-f - 3 - f + -5$ Stream gradient: $-5 - 5 - 5 - 5$ Are there pools (circle one)? YE: $NO'$ If yes, Size of stream pools.
	Maximum depth of stream pools:
•	Characterize non-pool habitat: run, nifle, glide, other:
	Vegetation: emergent, overhanging, dom. vant species: <u>upland grasses: Dats</u> Iplium (sp?)
	Substrate: Soil
	Bank description: open camppy, could red in upland grasses
Perenn	ial or Ephemeral (circle one). If ephemeral, date it goes dry: <u>or white of assassment</u>
Other a	quatic habitat characteristics, species observations drawings, or comments:
- 7	Feature's water source is #12 DFCs pind when a feature realines culvertievel. (in addition to natural
- F.	eature follows a namal ispography + is journal is office similar topographic organogos.
- Þr	y@time of assessment. Little to no emergent

2. Site photographs Maps with important habitat features and species location

1. All field notes and other supporting documents

7255->7859

wildlife trails present.

veg

Dhoto#:

**Necessary Attachments:** 

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		Appendix D.		
California I	Red-legged Fre	og Habitat Site	Assessment	Data Sheet

1

Site Assessment reviewed by_	(FWS Field Office)	(date)	(biologist)	
Date of Site Assessment: Site Assessment Biologist	(mm/dd/yyyy)	Brandon (first name)	Perkins (Last name)	(first name)
Site Location: <u>Merced</u> (County, G			(Last name) San Wis G or Lat./Long. or T-R-S	
			atures, and species locat	(
Proposed project name: Brief description of propos		am <u>Correctn</u>	<u>re Acnor</u> proj	CIT
1) Is this site within the cu	rrent or historic rai	nge of the CRF (c	ircle one?? YES	NO
<ol> <li>Are there known record If yes, attach a list of al</li> </ol>				YES NO
(if multiple ponds or	streams are within the p $0 \neq 100$ FF	roposed action area, fi	ACTERIZATIO	uch)
Vegetation: emerge UNKNOWN /ou	ent, overhanging, d <u>v Grawing</u> (	ominant species:	EMERGENT: C	atta, 15
Substrate: <u>Brave</u>	l w/ layer c	f sedimen-	<u></u>	
Perennial or Ephemeral) <u>California I</u>	App	oendix D.	dry: <u>Varies</u> based	

STREAM:
Bank full width:
Depth at bank full:
Stream gradient:
Are there pools (circle one)? YES NO
If yes,
Size of stream pools:
Maximum depth of stream pools:
Waxiniuni depin or stream poors.
Characterize non real helitation will alite athen
Characterize non-pool habitat: run, riffle, glide, other:
/
Vegetation: emergent, overhanging, dominant species:
Substrate:
Bank description:
Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:

Other aquatic habitat characteristics, species observations, drawings, or comments: - Feature is two water treatment ponds. Pand a appears to overflow into pond I. Ponds are excavated and surrounded by barbed wire fencing. Steep, gravel lined banks. - Pond I has totlails densky vegetated Pond 2 appears to receive less water. Vegetated w/tomble weeds. Photo #: 6916 + 6917

**Necessary Attachments:** 

- 1. All field notes and other supporting documents
- 2. Site photographs

	Camorina K	ed-legged Frog I	labitat Site Asses	ssment Data Sheet	
Site Ass	sessment reviewed by	(FWS Field Office)	(date)	(biologist)	
Date o	of Site Assessment:	09/28/2009			
Site As	ssessment Biologists:	(mm/dd/yyyy) Amchein	Brandon	Perkins	Terra
		(Last name)	(first name)	(Last name)	(first name)
		(Last name)	(first name)	(Last name)	(first name)
Site Lo	ocation: <u>Merced</u> G.	in an unsec-	funed portion	of San Luis Go	nzagg La
	(County, Gen	eral location name,	UTM Coordinates of	or Lat./Long. or T-R-S	).
	**ATTACH A M	<b>AP</b> (include habita	t types, important fea	tures, and species location	ons)**
	ed project name: B.F		· Corrective	Action Preed	- -
Brief de	escription of proposed	l action:			
1.1					
ł					
1) Is th	his site within the curre	ent or historic ran	ge of the CRF (cir	rcle one) YES) N	0
	is site within the curre				0
2) Are	his site within the curre there known records of If yes, attach a list of all kn	of CRF within 1.6	5 km (1 mi) of the	site (circle one)? Y	
2) Are	there known records o If yes, attach a list of all ki	of CRF within 1.6 nown CRF records v	5 km (1 mi) of the vith a map showing al	site (circle one)? Y l locations.	ES NO
2) Are	there known records of If yes, attach a list of all kn <u>GENERAL AC</u>	of CRF within 1.6 nown CRF records v DUATIC HAE	5 km (1 mi) of the with a map showing al	site (circle one)? Y	tes no <u>N</u>
2) Are	there known records of If yes, attach a list of all kn <u>GENERAL AC</u> (if multiple ponds or str	of CRF within 1.6 nown CRF records v DUATIC HAE	5 km (1 mi) of the with a map showing al	site (circle one)? Y l locations.	tes no <u>N</u>
2) Are	there known records of If yes, attach a list of all kn <u>GENERAL AC</u> (if multiple ponds or str	of CRF within 1.6 nown CRF records v DUATIC HAF reams are within the pr	5 km (1 mi) of the vith a map showing al BITAT CHARA roposed action area, fill	site (circle one)? Y l locations.	TES NO
2) Are	there known records of If yes, attach a list of all kn <u>GENERAL A(</u> <i>(if multiple ponds or str</i> Size:	of CRF within 1.6 nown CRF records v DUATIC HAE reams are within the pr	5 km (1 mi) of the with a map showing al BITAT CHAR roposed action area, fill Max	site (circle one)? Y l locations. ACTERIZATIO out one data sheet for each	TES NO
2) Are	there known records of If yes, attach a list of all kn <u>GENERAL AC</u> (if multiple ponds or str	of CRF within 1.6 nown CRF records v DUATIC HAE reams are within the pr	5 km (1 mi) of the with a map showing al BITAT CHAR roposed action area, fill Max	site (circle one)? Y l locations. ACTERIZATIO out one data sheet for each	TES NO       N       N
2) Are	there known records of If yes, attach a list of all kn <u>GENERAL A(</u> <i>(if multiple ponds or str</i> Size:	of CRF within 1.6 nown CRF records v DUATIC HAE reams are within the pr	5 km (1 mi) of the with a map showing al BITAT CHAR roposed action area, fill Max	site (circle one)? Y l locations. ACTERIZATIO out one data sheet for each	TES NO       N       N
2) Are	there known records of If yes, attach a list of all kn <u>GENERAL A(</u> <i>(if multiple ponds or str</i> Size:	of CRF within 1.6 nown CRF records v <b>DUATIC HAF</b> reams are within the pr	5 km (1 mi) of the with a map showing al BITAT CHAR roposed action area, fill Max	site (circle one)? Y l locations. ACTERIZATIO out one data sheet for each	TES NO       N       N
2) Are	there known records of If yes, attach a list of all kn <u>GENERAL A(</u> <i>(if multiple ponds or str</i> Size: Vegetation: emergent	of CRF within 1.6 nown CRF records v <b>DUATIC HAF</b> reams are within the pr	5 km (1 mi) of the with a map showing al BITAT CHAR roposed action area, fill Max	site (circle one)? Y l locations. ACTERIZATIO out one data sheet for each	TES NO       N       N
2) Are	there known records of If yes, attach a list of all kn <u>GENERAL A(</u> <i>(if multiple ponds or str</i> Size: Vegetation: emergent	of CRF within 1.6 nown CRF records v <b>DUATIC HAF</b> reams are within the pr t, overhanging, de cle one). If ephem	5 km (1 mi) of the with a map showing all BITAT CHARA Proposed action area, fill Max cominant species:	site (circle one)? Y l locations. ACTERIZATIO out one data sheet for each mum depth:	TES         NO <b>N</b>

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STREAM: / Drainage Bank full width: 34. Depth at bank full: Le in. Stream gradient: <u>37</u> Are there pools (circle one)? YES (NO) If yes, Size of stream pools: Maximum depth of stream pools: Characterize non-pool habitat: run, riffle, glide, other: \_\_\_\_\_glide Vegetation: emergent, overhanging, dominant species: pockets of welland regetation along feature. Ex: Dock, cattails. Substrate: <u>Soil</u> Bank description: vpland grasses, low area along natural Grainage Perennial or Ephemeral (kircle one). If ephemeral, date it goes dry: May (very dry @ time of Other aquatic habitat characteristics, species observations, drawings, or comments: - peer observed. Evidence of prior burn in area. - Area may be barrow site for treatment pond. Possibly excavated. - Unlikely to support water levels needed for CELF breeding habitat. Photo #: 6918 connects to 6919-6921

#### **Necessary Attachments:**

- 1. All field notes and other supporting documents
- 2. Site photographs

Cumor mu r	cu-leggeu 110g	Hubitut bite 115505	Sment Data Sheet	
Assessment reviewed by	(FWS Field Office)	(date)	(biologist)	
-	(mm/dd/yyyy)	- Brandon (first name)	(Last name)	Terra (first name)
(County, Ger	neral location nam	e, UTM Coordinates o	r Lat./Long. or T-R-S )	
osed project name: <u>B</u> .	F. Sisk Da	in Corrective.	Action Project	
The there known records If yes, attach a list of all of <u>GENERAL A</u> (if multiple ponds or s D: Size: <u>~2,25</u>	of CRF within 1 known CRF records OUATIC HA treams are within the	.6 km (1 mi) of the with a map showing al BITAT CHARA proposed action area, fill Max	site (circle one)? Y l locations. ACTERIZATIO out one data sheet for each imum depth: <u>4</u>	ES NO
<u>Rush</u> , <u>Curly Da</u> <u>OVERHANGTACA: UI</u> Substrate: <u>Soil</u> wi	<u>ck, Crab Gra</u> <u>illowsp.</u> <u>th, algae</u> rcle one). If ephe Ap	matting. matting. meral, date it goes o pendix D.	dry:	
	e of Site Assessment: Assessment Biologists Location: $\underline{Merced}_{(County, Genty, Genty)}$ **ATTACHAN oosed project name: <u>B.</u> f description of propose e to seismic e making correctorllevicte riskss this site within the currare there known recordsIf yes, attach a list of all pro-are there known recordsIf yes, attach a list of all pro-County attach a list of all pro-content of the ponds or sD:Size: ~2,25Vegetation: emergerRush, Curly DaOVERHANGTACA: UNSubstrate: Soil wither	Assessment reviewed by (FWS Field Office) e of Site Assessment: $9/38/2009$ (mm/dd/yyyy) Assessment Biologists: $Anchein$ (Last name) Location: <u>Merced</u> <u>Co.</u> <u>(Cast name)</u> (Last name) Location: <u>Merced</u> <u>Co.</u> <u>(County, General location name)</u> **ATTACH A MAP (include habin posed project name: <u>B.F. Sisk</u> <u>Va</u> f description of proposed action: $e + D \leq e \leq M_1 \in concerns =$ e Making corrective improver lleviate risks to the data s this site within the current or historic ra- are there known records of CRF within I If yes, attach a list of all known CRF records GENERAL AQUATIC HA (if multiple ponds or streams are within the ID: Size: ~2,25 Acres Vegetation: emergent, overhanging, Rush Curly Dack, Crab Grac OVERHAN(GTAC) Withouts. If ephe Ap	Assessment reviewed by (FVS Field Office) (date) e of Site Assessment: <u>01/28/2009</u> (mm/dd/yyyy) Assessment Biologists: <u>Anchein</u> <u>Brandon</u> (Last name) (first name) (Last name) (first name) (Last name) (first name) Location: <u>Merced Co.</u> <u>TIDS</u> <u>RO8</u> (County, General location name, UTM Coordinates of **ATTACH A MAP (include habitat types, important feat bosed project name: <u>B.F. Sisk Dae Corrective</u> f description of proposed action: e to seisnic concerns the Bureau of e making corrective improvements to the lievent e risks to the down stream p s this site within the current or historic range of the CRF (cin are there known records of CRF within 1.6 km (1 mi) of the If yes, attach a list of all known CRF records with a map showing al <u>GENERAL AQUATIC HABITAT CHARP</u> (if multiple ponds or streams are within the proposed action area, fill (D: Size: <u>~2,25 Acres</u> Max Vegetation: emergent, overhanging, dominant species: <u>#</u> <i>Rush</i> ( <i>wrly Dack</i> , Crab Gurass, <i>locklebor</i> <i>OVERHAN(article inflows</i> ). If ephemeral, date it goes of Appendix D.	Assessment reviewed by (IWS Field Office) (anc) (biologian) e of Site Assessment: <u>Alabelacia Brandon</u> <u>Perkins</u> (maiddyyyy) Assessment Biologists: <u>Anchean</u> <u>Clast name</u> ) (Last name) (first name) (Last name) (Last name) (first name) (Last name) **ATTACH A MAP (include habitat types, important features, and species location posed project name: <u>B. F. Sisk Daen Corrective</u> . Action Project f description of proposed action: e. to Seismi, c concerns the Bureau of Reclemation "E. making corrective, improvements to the dam strue Illeviate risks to the down stream public. s this site within the current or historic range of the CRF (circle one)? YES N are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? Y If yes, attach a list of all known CRF records with a map showing all locations. <u>GENERAL AOUATIC HABITAT CHARACTERIZATIO</u> (if multiple ponds or streams are within the proposed action area, fill out one data sheet for each D: Size: <u>~2,25</u> <u>Acres</u> Maximum depth: <u>Y</u> Vegetation: emergent, overhanging, dominant species: <u>EMERDENT: Cuttactor</u> NEWAMARTALAOUATIC HABITAT CHARACTERIZATIO (if multiple ponds or streams are within the proposed action area, fill out one data sheet for each D: Size: <u>~2,25</u> <u>Acres</u> Maximum depth: <u>Y</u> Vegetation: emergent, overhanging, dominant species: <u>EMERDENT: Cuttactor</u> NEWAMARTALAOUATIC HABITAT CHARACTERIZATIO NEWAMARTALAOUATIC Structures, Cocklebor <u>OVERHANCATACA: Willow 5p</u> . Substrate: <u>Soil with</u> algae matting. miniaDor Ephemeral (circle one). If ephemeral, date it goes dry:

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Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

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STREAM:
Bank full width:
Depth at bank full:
Stream gradient:
Are there pools (circle one)? YES NO If yes,
Size of stream pools:
Maximum depth of stream pools:
Characterize non-pool habitat: run, riffle, glide, other:
Vegetation: emergent, overhanging, dominant species:
Substrate:
Bank description:
Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:
Other equation habitat abarrateristical encodes abarrations, describes or commentat

Other aquatic habitat characteristics, species observations, drawings, or comments: - Wild life " areen heran nast; rookary. Crayfish, Kill deer - Feature separated from forebay @ time of assessment. Viable fish habitat not likely in welland feature when forebay water level is low, CRLF predators = shore birds + crayfish + pass: bly fish - One Pacific charus frog call heard during assessment. - water source : for ebay over flow + natural drainage, Photo #: 6886 - 6896

- 1. All field notes and other supporting documents
- 2. Site photographs

## Appendix D. <u>California Red-legged Frog Habitat Site Assessment Data Sheet</u>

	Site Assessment reviewed by (FWS Field Office)	(date)	(biologist)
		(first name) (Last n	KINS TErra name) (first name)
	Site Location: Merced C. TIOS R (County, General location name, UT	M Coordinates or Lat./Lor	ng. or T-R-S ).
	**ATTACH A MAP (include habitat typ Proposed project name: <u>B.F. 5.3k Dam</u> Brief description of proposed action:		
	<ol> <li>Is this site within the current or historic range</li> <li>Are there known records of CRF within 1.6 km If yes, attach a list of all known CRF records with</li> </ol>	n (1 mi) of the site (circ	ele one)? YES NO
Location	GENERAL AQUATIC HABIT (if multiple ponds or streams are within the propose POND: Size: <u>~18 Acres</u> Vegetation: emergent, overhanging, domi <u>overhancence: Willows (Salix sp.</u> Butrush, Cattail, Curly Dock alor Substrate: <u>Sand / gravel</u> <u>Algae mats on Dock</u>	nant species: <u>EMERGEN</u>	a sheet for each) ppth: <u>57</u> ' <u>T: hydrophyfic grace</u> poceline,
	Perennial or Ephemeral (circle one). If ephemera Append California Red-legged Frog Habi	l, date it goes dry: lix D.	

STREAM:
Bank full width:
Depth at bank full:
Stream gradient:
Are there pools (circle one)? YES NO If yes,
Size of stream pools:
Maximum depth of stream pools:
Characterize non-pool habitat: run, riffle, glide, other:
Vegetation: emergent, overhanging; dominant species:
Substrate:
Bank description:
Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:
Other aquatic habitat characteristics, species observations, drawings, or comments:
- Wildlife: Merganser OIULS, Ravens, Fish (stripped bass, sunfish) Osprey, Coots, Aq. snails, FW clams, Egrets, Cormerants, Blackbirds, (Bedwin Mullords,
- Fishermen present, recreational use (comping) mailores.
- Excavated + impounded: man-made for ebay to San Luis Reservoir
- Surrounding-upland habitat: grass land / riparian zone (willows, spamor oak, cotton wood, black wa Inut
Photo #: 6879 - 6881; 6884-6885;
Necessary Attachments:

All field notes and other supporting documents
 Site photographs
 Maps with important habitat features and species location

	California Red-legged	Frog Habitat Site A	ssessment Data Sheet	
	Site Assessment reviewed by	Office) (date)	(biologist)	
	Date of Site Assessment: <u>09 / 28 /</u> (mm/dd/yy Site Assessment Biologists: <u>Anch</u> (Last name		(Last name)	(first name)
		10 S R09E n name, UTM Coordina	(Last name) Sec. 19 Ites or Lat./Long. or T-R-S t features, and species location	
	Proposed project name: <u>B. F. Srs</u> Brief description of proposed action:	K Dam Corre	ective Action	Project
	<ol> <li>Is this site within the current or hist</li> <li>Are there known records of CRF will June 10 and 10 and</li></ol>	ithin 1.6 km (1 mi) of	The site (circle one)?	NO YES NO
bocatio	<b>GENERAL AQUATIO</b> (if multiple ponds or streams are wi <b>POND:</b> Size: <u>aoft x 20ff</u> . Vegetation: emergent, overhan <u>grasses</u> around f. Substrate: <u>soil/cracka</u>	thin the proposed action are ging, dominant specie	a, fill out one data sheet for ea Maximum depth:( es:0V_L_C	ch)
	Perennial or Ephemeral (circle one). I	f ephemeral, date it go	oes dry: June	

Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

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Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM:
Bank full width:
Depth at bank full:
Stream gradient:
Are there pools (circle one)? YES NO If yes,
Size of stream pools:
Maximum depth of stream pools:
Characterize non-pool habitat: run, riffle, glide, other:
Vegetation: emergent, overhanging, dominant species:
/
Substrate:
Pont description
Bank description:
Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:
Other equation habitat abarratoristical analism a description of a summarity
Other aquatic habitat characteristics, species observations, drawings, or comments:
- Devoid of regetation. Feature appears to be
artificially fed for cattle.
- Devoid of regetation. Feature appears to be artificially feed for cattle. - Excavated / man-made.
- Feature is unlikely to hold enough water for CELF breeding habitat. - around squirrels observed in nearby upland area.
Photo #s: 6902-6905
Necessary Attachments:

All field notes and other supporting documents
 Site photographs
 Maps with important habitat features and species location

# Appendix D. <u>California Red-legged Frog Habitat Site Assessment Data Sheet</u>

	Site Assessment reviewed by (FWS Field Office) (date) (biologist)
	Date of Site Assessment: 09/28/2009 (mm/dd/yyyy) Site Assessment Biologists: Amrhlin Brandon (Last name) (first name) (Last name) (first name) (first name)
	Image: Construction of the section
Γ	**ATTACH A MAP (include habitat types, important features, and species locations)** Proposed project name: <u>B.F. Sisk Dan Enclose Action</u> Project Brief description of proposed action:
	<ol> <li>Is this site within the current or historic range of the CRF (circle one)? YES NO</li> <li>Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO If yes, attach a list of all known CRF records with a map showing all locations.</li> </ol>
tion	21 GENERAL AQUATIC HABITAT CHARACTERIZATION (if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)
	Size: <u>00 yas x 25 yas</u> . Maximum depth: <u>~177</u> . Vegetation: emergent, overhanging, dominant species: <u>Bare surrounded</u>
	Substrate: <u>Soil</u>
F	Artificially fed Perennial or Ephemeral (circle one). If ephemeral, date it goes dry: <u>feature filled Queeks present</u> , (specula Appendix D. to assessment, (specula
	Appendix D. 70 assessment, (specula California Red-legged Frog Habitat Site Assessment Data Sheet water will I marth from

#### STREAM:

Bank full w	idth: /
Depth at bar	nk full:
Stream grad	ient:
Stroum Bruu	
Are there po	ools (circle one)? YES NO
If ye	
	Size of stream pools:
	Maximum depth of stream pools:
Characterize	e non-pool habitat: run, riffle, glide, other:
Characterize	
	/
<b>T</b> <i>T</i> = 4 4'	
vegetation:	emergent, overhanging, dominant species:
	/
Substrate:	/
Bank descrip	otion:
	/
nial or Epher	meral (circle one). If ephemeral, date it goes dry:
	· · · · · · · · · · · · · · · · · · ·

Other aquatic habitat characteristics, species observations, drawings, or comments: - Feature is an cattle pand. Likely fed from Water tank uphill. 10-12 Cows, - Feature occurs in a natural depression. Drainage to feature has been manipulated to retain more water (Impunded) Photo #'s: 6906-6910; 6591; 6593,6594

#### **Necessary Attachments:**

- 1. All field notes and other supporting documents
- 2. Site photographs

## Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

	(FWS Field Office)	(date)	(biologist)	
Date of Site Assessment:	(mm/dd/yyyy)	Brandon (first name)	(Last name)	Terra (first name)
Site Location: <u>Merced (o.</u>	(Last name)	(first name)	(Last name)	(first name)
(County, Ger **ATTACH A N	neral location name	, UTM Coordinates	or Lat./Long. or T-R-S	S).
Proposed project name: <u>B</u> . Brief description of propose		Dam Correct	ive Action F	Project
1) Is this site within the curr	rent or historic rat	nge of the CRF (c	ircle one? YES	NO
<ol> <li>Is this site within the curr</li> <li>Are there known records If yes, attach a list of all I</li> </ol>	of CRF within 1.	6 km (1 mi) of the	e site (circle one)?	
2) Are there known records If yes, attach a list of all B GENERAL A	of CRF within 1. known CRF records	6 km (1 mi) of the with a map showing a	e site (circle one)?	yes no <u>DN</u>
2) Are there known records If yes, attach a list of all I <u>GENERAL A</u>	of CRF within 1. known CRF records OUATIC HAI treams are within the p	6 km (1 mi) of the with a map showing a BITAT CHAR roposed action area, fil	e site (circle one)? Tall locations.	YES NO DN uch)
2) Are there known records If yes, attach a list of all B <u>GENERAL A</u> (if multiple ponds or st POND:	of CRF within 1. known CRF records OUATIC HAI treams are within the p	6 km (1 mi) of the with a map showing a BITAT CHAR roposed action area, fil Ma	e site (circle one)? all locations. ACTERIZATIO Il out one data sheet for ea ximum depth:	YES NO DN ach)
<ul> <li>2) Are there known records If yes, attach a list of all I</li> <li><u>GENERAL A</u> (if multiple ponds or store)</li> <li>POND:</li> <li>Size:</li> </ul>	of CRF within 1. known CRF records of OUATIC HAI treams are within the p ot, overhanging, d	6 km (1 mi) of the with a map showing a BITAT CHAR roposed action area, fil Ma	e site (circle one)? all locations. ACTERIZATIO Il out one data sheet for ea ximum depth:	YES NO DN ach)

STREAM:
Bank full width: $3+4$ , Depth at bank full: $6-810$ ,
Stream gradient: $3 \frac{1}{2}$
Are there pools (circle one)? YES NO If yes,
Size of stream pools: $3f \times 6f$ . Maximum depth of stream pools: $/8in$ .
Characterize non-pool habitat: run, riffle, glide, other: <u>glide</u>
Vegetation: emergent, overhanging, dominant species: <u>DOMENIANT/OVERHAN(AIN(A)</u> Willow op, Sycamore. Little to no undergrouth lemergent grasses. Substrate: <u>Soil</u>
Bank description: bare soil w/ leaf littles on upland areas.
Perennial or Ephemeral <i>circle one</i> ). If ephemeral, date it goes dry: <u>July</u>
Other aquatic habitat characteristics, species observations, drawings, or comments:
-Primary water source from San Luis reservoir seepage. Seepage minimal for the past four years (per DWR) due to low water levels.
- channel dues not appear to have sufficient water levels to support viable breading habitat of CRUFS.
- Feature drams to emergent wetland area of forebay.
Photo #3: (0897 - 6900

All field notes and other supporting documents
 Site photographs
 Maps with important habitat features and species location

# Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

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	Site Assessment reviewed by	(FWS Field Office)	(date)	(biologist)	
	Date of Site Assessment:	<u>6/1/2009</u> (mm/dd/yyyy) <u>Amrhein</u> (Last name)	Brandon (first name)	(Last name)	(first name)
		eral location name, U	TM Coordinates or	Lat./Long. or T-R-S )	
	**ATTACH A M				
	Proposed project name: $\beta_{1}$ Brief description of proposed	<u>e. Sisk Da</u> action:	m Correctiv	e Action Pr	oject
I		· · · · ·			
	<ol> <li>Is this site within the curre</li> <li>Are there known records on If yes, attach a list of all known</li> </ol>	of CRF within 1.6	km (1 mi) of the s	ite (circle one)? Y	
hocation	$\begin{array}{c} GENERAL AC \\ (if multiple ponds or str () 30' × 50' POND: Size: 30' \times 100'Size: 30' \times 100'Vegetation: emergent() 20' × 50'() 30' × 50'$	eams are within the prop	ninant species: <u>し</u>	ut one data sheet for each mum depth: <u>3</u>	4ft. 2ft. ct. misc.
	Substrate: $D(\widehat{a})$ : rock	< aggragate 1 + aggragate	(wl some sec lgrosses in +	timent) around feature	2
	Perennial or Ephemeral (circ	· –	ral, date it goes dr ndix D.	y:	
5.	<u>California Rec</u>	l-legged Frog Ha		<u>nent Data Sheet</u>	

STREAM:	
Bank full width:	
Depth at bank full:	
Stream gradient:	
Are there pools (circle one)? YES NO If yes, Size of stream pools:	
Maximum depth of stream pools:	
Characterize non-pool habitat: run, riffle, glide, other:	
Vegetation: emergent, overhanging, dominant species:	
Substrate:	
Bank description:	
/	
Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:	
Other aquatic habitat characteristics, species observations, drawings, or comments:	e.E
Other aquatic habitat characteristics, species observations, drawings, or comments: 0+0: Feature consists of two pools within the power the facility @ base of dam. O has small pool of water @ time of assessment (4" water loft x10ft). (2) is dry with some green veg in bottom. Bank slopes are bare aggregate rocle w/small patches of upland grasses, open + exposed banks. Water source = forebay pump facility.	17
I facility @ base of dam. O has small pool of water @ time me	eq.
of assessment (4" water loft x loft). @ is dry with some green	
Veg in bottom. Bank slopes are bare aggregate rock w/small	
y potches of upland grassies, open + exposed banks.	
water source = torebay pump facility.	
B: Feature does not appear to be in current use as treatment pond. Lacks entergent veg. upland grass growing	
3: Feature does not appear to be in current use as treatment pond. Lacks entergent veg. upland grass growing within feature bottom + along slopes sits between clam and storage yard. Pipe extending to feature May serve as entropment point for wash station.	
within feature bottom, + along slopes Sits between clam	
and storage yard, Pipe extending to feature. May	
Photo $#:7095 - 7097$ 1. All field notes and other supporting documents	
2. Site photographs	

Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

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	(FWS Field Office)		(biologist)	AND THE STATE
Date of Site Assess	sment: $10/01/2004$ (mm/dd/yyyy)	3		
Site Assessment B		Brandon	Perkins	Terra
	(Last name)	(first name)	(Last name)	(first name)
	(Last name)	(first name)	(Last name)	(first name)
Site Legation. Ma	priced (o. in an unse	the location	f G Lie	harright
	ounty, General location name			<u>6012999</u> 5).
**ATTA(	CH A MAP (include habit	at types important feat	ures and species locat	ions)**
Proposed project na Brief description of	ame: <u><b>B</b>F</u> Sisk <u>D</u> f proposed action:	an lorrecti	ve tetor P	roject
	proposed detrom			· .
<ol> <li>Is this site within</li> </ol>	n the current or historic ra	nge of the CRF (cir	cle one)? YES	NO
2) Are there known	n records of CRF within 1	.6 km (1 mi) of the	site (circle one)?	
2) Are there known		.6 km (1 mi) of the	site (circle one)?	
2) Are there known If yes, attach a	n records of CRF within 1 list of all known CRF records	.6 km (1 mi) of the with a map showing all	site (circle one)?	YES NO
2) Are there known If yes, attach a $3^{\circ}$ GENE	n records of CRF within 1	.6 km (1 mi) of the with a map showing all	site (circle one)?	YES NO
2) Are there known If yes, attach a	n records of CRF within 1 list of all known CRF records RAL AQUATIC HA e ponds or streams are within the p	.6 km (1 mi) of the with a map showing all BITAT CHARA proposed action area, fill	site (circle one)?	YES NO DN nch)
2) Are there known If yes, attach a	n records of CRF within 1 list of all known CRF records	.6 km (1 mi) of the with a map showing all BITAT CHARA proposed action area, fill	site (circle one)?	YES NO DN nch)
2) Are there known If yes, attach a 20 21 23 GENE (if multiple POND: Size:	n records of CRF within 1 list of all known CRF records RAL AQUATIC HA e ponds or streams are within the p	.6 km (1 mi) of the with a map showing all BITAT CHARA proposed action area, fill Max	site (circle one)?	YES NO DN uch)
2) Are there known If yes, attach a 20 21 23 GENE (if multiple POND: Size:	n records of CRF within 1 list of all known CRF records RAL AQUATIC HA e ponds or streams are within the p	.6 km (1 mi) of the with a map showing all BITAT CHARA proposed action area, fill Max	site (circle one)?	YES NO DN uch)
2) Are there known If yes, attach a 20 21 23 GENE (if multiple POND: Size:	n records of CRF within 1 list of all known CRF records RAL AQUATIC HA e ponds or streams are within the p	.6 km (1 mi) of the with a map showing all BITAT CHARA proposed action area, fill Max	site (circle one)?	YES NO DN uch)
2) Are there known If yes, attach a 20 23 CENE (if multiple POND: Size: Vegetation:	n records of CRF within 1 list of all known CRF records RAL AQUATIC HA e ponds or streams are within the p	.6 km (1 mi) of the with a map showing all BITAT CHARA proposed action area, fill Max	site (circle one)?	YES NO
2) Are there known If yes, attach a 20 23 CENE (if multiple POND: Size: Vegetation:	n records of CRF within 1 list of all known CRF records RAL AQUATIC HA e ponds or streams are within the p emergent, overhanging, o	.6 km (1 mi) of the with a map showing all BITAT CHARA proposed action area, fill Max	site (circle one)?	YES NO DN uch)

ST

STREAM:
Bank full width: 3ft to 15ft.
Depth at bank full: varies
Stream gradient: $4-5\%$
Stream gradient: <u>4-5%</u> Are there pools (circle one)? YES NO → empty into wetland If yes, Size of stream pools: <u>Maximum depth of stream pools</u> : Maximum depth of stream pools: <u>Maximum depth of stream pools</u> : Characterize non-pool habitat: run, riffle, glide, other: <u>poctions ace channelized</u> with steep narrow books. <u>Athens are flat wide and</u> (reale emorgent/wetland habitat. Vegetation: emergent, overhanging, dominant species: <u>Ditch has patches af</u> <u>Overhanging</u> : <u>Willow</u> , (otton wood. <u>Flat/wetland poctions has</u> <u>Substrate:</u> <u>Soil</u>
Bank description: steep naccow + "maintained" possibly excavated exposed. Other locations appear to be naturalized, more flat.
Perennial or Ephemeral (circle one). If ephemeral, date it goes dry: <u>conditional</u> <u>a lake</u> (evels.
Other aquatic habitat characteristics, species observations, drawings, or comments:
- Feature spons most of dam base in which a network
of side ditches / seeps flow into it. Ditch eventually inches. drains near the western end of forebay. Fairly sophisticationes. -Man made-excavated/impounded appirits. - Feature dry @ time of assessment, but may retain wetland me made water when lake levels are higher.
- Feature dry a time of assessment, but may retain well more water when take levels are higher welland areas are densily vegetated, ditch near forebay is gen - upland habitat consists of grasses w/ coyote bush. + exposed.
- opiona manar and a grand i

1. All field notes and other supporting documents

Photo = s: 4098-7100,7105-7111

2. Site photographs

Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

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Site Assessment reviewed by	(FWS Field Office)	(date)	(biologist)	
Date of Site Assessment:	<u>/0/1/2009</u> (mm/dd/yyyy) <u>Amrhein</u> (Last name)	(first name)	Perkins (Last name)	(first name)
Site Location: <u>Merced</u> <u>(a</u> (County, Gen **ATTACH A M	eral location name,	UTM Coordinates of	or Lat./Long. or T-R-S	-
Proposed project name: <u>R</u> Brief description of proposed		ara Correctiv	e Action Pr	oject
1) Is this site within the curr	ent or historic ran	ge of the CRF (ci	rcle one) YES N	10
<ul><li>2) Are there known records If yes, attach a list of all k</li></ul>	of CRF within 1.6	km (1 mi) of the	site (circle one)? Y	
3) <u>GENERAL A</u> (if multiple ponds or st			ACTERIZATIO	$\frac{\partial \mathbf{N}}{h}$
POND:	5' © <sub>150'</sub>		simum depth: $\underline{\prec}$	<i>c</i> .
Vegetation: emergen False willow (10 vquand=grasses	t, overhanging, dc ok-up) b + coyote b	erhanging : co wsh	ENNERGENT: Catt Hanwood + Will	ails, low@se
Substrate: <u>561</u>				
Perennial or Ephemeral Icir		eral, date it goes o endix D.	dry: unknown	7
	11		sment Data Sheet	

REAM	<b>1</b> :
	ank full width:
De	epth at bank full:
Str	ream gradient:
50	
Ar	re there pools (circle one)? YES NO If yes,
	Size of stream pools:
	Maximum depth of stream pools:
	1
Ch	aracterize non-pool habitat: run, riffle, glide, other:
Ve	getation: emergent, overhanging, dominant species:
Sul	bstrate:
Ba	nk description:
Du	
	/
nnial	or Ephemeral (circle one). If ephemeral, date it goes dry:
mal	or Ephemici al (circle one). Il ephemicial, date il goes di y.

Other aquatic habitat characteristics, species observations, drawings, or comments: - Features have clay soils (deep hoof marks) dry. Patches of cattail were still green indicating rea maisture. Zero surface water present. - Unitikely to hold sufficient water levels for CRLF breeding habitat, - Watersource (ditches from unknown source; no visible culturets.) (maybe nat. runoff from road Photo: 7120+21 7122--7125Q

- 1. All field notes and other supporting documents
- 2. Site photographs

Appendix D.	
California Red-legged Frog Habitat Site Assessment Data Sh	<u>eet</u>

Par Crea M

Site	e Assessment reviewed by	(FWS Field Office)	(date)	(biologist)	
Da	te of Site Assessment:	10/01/2009			
Sit	e Assessment Biologists:	(mm/dd/yyyy) Amrhein (Last name)	Brandon (first name)	(Last name)	(first name)
	11	(Last name)	(first name)	(Last name)	(first name)
Sit	e Locatiòn: <u>Merted</u> (6. (County, Gen			F <u>San Luis G</u> r Lat./Long. or T-R-S	
	**ATTACH A M	$[\mathbf{AP}]$ (include habitat	types, important feat	ures, and species locat	ions)**
Pro Bri	posed project name: ef description of proposed	F. S.s.K	Dam Correct	fire Action	Project
1)	Is this site within the curr	ent or historic ran	ge of the CRF (cir	cle one)? YES	NO
2) /	Are there known records of If yes, attach a list of all k				YES NO
32	4 34 GENERAL AC (if multiple ponds or st	DUATIC HAB	DITAT CHARA	CTERIZATIO	DN (ch)
PO	ND: associated Size: ditch is 100	) if long x3	ff wide, Max	imum depth:	la
	Vegetation: emergen	t, overhanging, do	ominant species:	see wetland	deliniatia
	Substrate: <u>soil</u>				
Pero	ennial or Ephemeral (cir	App	endix D.	-	
	California Re	d-legged Frog Ha	abitat Site Assess	<u>ment Data Sheet</u>	
	> candifiand	Can lake C	evels.		

STREAM: Bank full width: Depth at bank full: Stream are direct.
Stream gradient: Are there pools (circle one)? YES NO If yes, Size of stream pools: Maximum depth of stream pools:
Characterize non-pool habitat: run, riffle, glide, other:
Vegetation: emergent, overhanging, dominant species:
Substrate:
Bank description:
Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:
Other aquatic habitat characteristics, species observations, drawings, or comments: - Features are dam seepage locations where water collects of passing to colliver & leading to large drainage ditch.
- these features have been dry (likely for 3-4 yrs due to low lake levels - por PWR.)
- As of assessment date; insufficient water to support CRLF breeding habitat. Photo#'s 17101-7104 - No wild life observed.

- 1. All field notes and other supporting documents
- 2. Site photographs

## Appendix D. <u>California Red-legged Frog Habitat Site Assessment Data Sheet</u>

1

	Site Assessment reviewed by (FWS Field Office) (date) (biologist)
	Date of Site Assessment: 11/28/2009
	Site Assessment Biologists: <u>Amrhein</u> Brandon (Last name) (first name) <u>Perkins</u> Terra (Last name) (first name) (first name)
	(Last name) (first name) (Last name) (first name) (first name) (first name) (first name) (first name)
	(County, General location name, UTM Coordinates or Lat./Long. or T-R-S ).
	**ATTACH A MAP (include habitat types, important features, and species locations)**
	Proposed project name: <u>BF Sisk Dam Corrective Action</u> Project Brief description of proposed action:
	Bher description of proposed action.
	1) Is this site within the current or historic range of the CRF (circle one)? YES NO
	<ul> <li>2) Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO If yes, attach a list of all known CRF records with a map showing all locations.</li> </ul>
	<b>GENERAL AQUATIC HABITAT CHARACTERIZATION</b>
Location	(if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)
100	POND:         Maximum depth:
	Vegetation: emergent, overhanging, dominant species:
	Substrate:
	Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:
	Appendix D.
	California Red-legged Frog Habitat Site Assessment Data Sheet

TREAM:
Bank full width:
Depth at bank full:
Stream gradient:
Are there pools (circle one)? YES NO
If yes,
Size of stream pools:
Maximum depth of stream pools:
Characterize non-pool habitat: run, piffle, glide, other:
Vegetation: emergent, overhanging, dominant species:
Substrate:
Bank description:
/
rennial or Ephemeral (circle one). If ephemeral, date it goes dry:

Other aquatic habitat characteristics, species observations, drawings, or comments: - Excavated hole. May retain marginal rainwated runoff. - Recreational use. OHV park just north of feature. Tire tracks passing through feature. Appears to be used as a jump. - Feature contains several ground squirrel burrows. Significant upland grasses, Unlikely to hold water for more than a few days. Photo#'s : (0590

**Necessary Attachments:** 

- 1. All field notes and other supporting documents
- 2. Site photographs

Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet				
Site Assessment reviewed by	(FWS Field Office)	(date)	(biologist)	
Date of Site Assessment:	10/01/2009	_		
Site Assessment Biologists:	(mm/dd/yyyy) Amchein (Last name)	(first name)	Perkins (Last name)	(first name)
	(Last name)	(first name)	(Last name)	(first name)
Site Location: Merced C	o. TIOS	ROBE SE	. 33	
	eral location nam	e, UTM Coordinates o	r Lat./Long. or T-R-	·S ).
<b>**ATTACH A M</b>	[AP (include habi	tat types, important fea	ures, and species loca	tions)**
Proposed project name: <u>B</u>		Dam Correct	ive Action	Project
Brief description of proposed	action:			
			3	
			3	
		· · · · ·		
1) Is this site within the curr	ent or historic ra	ange of the CRF (ci	rcle one)? YE8	NO
2) Are there known records If yes, attach a list of all h				YES NO
$\begin{array}{rcrc} & & & \\ & & \\ & & \\ 35 \\ 35 \\ 35 \\ 35 \\$	<b>OUATIC HA</b> treams are within the	BITAT CHAR proposed action area, fill	ACTERIZATI out one data sheet for e	ON each)
Size: $\underline{y} = 100^{\text{POND}} \times 30^{\text{POND}}$	f4,	Max	imum depth:/	la
Vegetation: emergen	S. Domik	nont compar	sed of upl	
Substrate: <u>rock</u> sediment	aggregat	e (3-8inche	s) with r	ock
Perennial or Ephemeral (cit		meral, date it goes pendix D.	dry:	
<u>California Re</u>	· · · · · ·	Habitat Site Asses	<u>sment Data Shee</u>	t

:1-

7
STREAM:
Bank full width:
Depth at bank full:
Stream gradient:
Are there pools (circle one)? YES NO
If yes,
Size of stream pools:
Maximum depth of stream pools:
Characterize non-pool habitat: run, riffle, glide, other:
Vegetation: emergent, overhanging, dominant species:
Cubatrata
Substrate:
Bank description:
Bank description:
/
Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:
Other aquatic habitat characteristics species observations, drawings, or comments:
Other aquatic habitat characteristics, species observations, drawings, or comments:
- Features occur within guory Man-made depression (excavated /trailings,)
(ox rainated /trailings,)
concurrent. Unit in the state of the Elisabelli Elis
- substrate appears to drain water quickly, Features not expected to retain water for more than a
not expected to retain water for more than a
foundate find to restriction layer.

Y tew days. le watersource: rainwater Instural - No wildlife observed. No hydrophytic veg occurring in or around features Photos: 7094, 7024, 7025, 6974-76, 6983

- 1. All field notes and other supporting documents
- 2. Site photographs

# Appendix D. <u>California Red-legged Frog Habitat Site Assessment Data Sheet</u>

Date of Site Assessme Site Assessment Biolo	(mm/dd/yyyy)	Brandon (first name)	(Last name)	TPrra (first name)
Site Location: Mer(	(Last name) ed <u>(o.</u> T10 S ty, General location name		(Last name) Sec. 27 s or Lat./Long. or T-H	(first name) R-S ).
	A MAP (include habit		· _	
Proposed project name Brief description of pro		Dam Coire	ective Action	n Project
			3	
1) Is this site within th	e current or historic ra	ange of the CRF (	circle one)? YES	NO
2) Are there known re If yes, attach a list	cords of CRF within 1 of all known CRF records			YES NO
	L AQUATIC HA			ION each)
<b>POND</b> : Size: <u>70-f</u> f	x 44	. M	laximum depth:	4in.
Duckweed,	hergent, overhanging, Rabby's Fool gra Ses, stage	ss, Cattails, c	VERHANKA : U)	low.
Substrate: <u>Sor</u>				
Paranaial by Easterna	ral (circle one). If ephe	meral date it go	e dry:	

STREAM:	
Bank full width: Depth at bank full:	
Stream gradient:	
Are there pools (circle one)? YES NO	
If yes,	
Size of stream pools:	
Maximum depth of stream pools:	
Characterize non-pool habitat: run, fiffle, glide, other:	
Vegetation: emergent, overhanging, dominant species:	
Sub-trates	
Substrate:	
Bank description:	
Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:	
Other aquatic habitat characteristics, species observations, drawings, or comments:	
- Feature exists in a man-made road cut below natural	
- Feature exists in a man-made road cut below normal	
grade. Feature is enclosed a west by dirt road + hill slope a the e	ast.
grade. Feature is enclosed a west by dirt road + hill slope a the e Feature is open + exposed; some overhaging reg. @ N (willow Dense envergent reg within feature.	).
Dense envergent veg within teature.	Con Contra
-water source is natural run off/rain, (Spring/seep is upsid	pe tion realis
-wildlife: sparrows evidence of deer/elk prints+ scat). No uniprint	observed
- upland Hab: feature associated with every tunnel /mine entrance, Banks contain upland grasses w/bare soil. steep slopes may pro	buide some
- As feature fills it drains down slope towards lake.	shad
- As tears e the Photo #'s : 7035 - 7040	

All field notes and other supporting documents
 Site photographs
 Maps with important habitat features and species location

	California K	eu-leggeu Flog IIa	abitat Site Assessi	hent Data Sheet	
	Site Assessment reviewed by	(FWS Field Office)	(date)	(biologist)	
	Date of Site Assessment:	(mm/dd/yyyy) Amchein (Last name)	Brund on (first name)	Porkins (Last name)	(first name)
	Site Location: Merced	(Last name) ( $D$ , $T/D$ , $S$	(first name) ROBE	(Last name) Sec. 35	(first name)
	(County, Gen	eral location name, U			
	Proposed project name: <u>B</u> . Brief description of proposed		o Corrective	Action Proj	ect
	1) Is this site within the curre	ent or historic rang	e of the CRF (circl	le one)? YES No	С
	2) Are there known records of If yes, attach a list of all k				ES NO
Location	38 <u>GENERAL AC</u> (if multiple ponds or str	<b>DUATIC HABI</b> reams are within the prop			
10-	POND: Size: <u>5,000 Sq.</u> Vegetation: emergent	Ft. (Based on acria	ls) Maxin	num depth: <u>assu</u>	med 4ft
	Vegetation: emergent	t, overhanging, dor	ninant species: //	one visible	00
	Substrate: <u></u>	d soil			
	Perennial or Ephemeral (ciro <u>California Re</u>	· •	ndix D.		

Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

EAM:				A CONTRACT OF THE OWNER OF THE OWNER
Bank full v	vidth:			
Depth at ba	ınk full:			
Stream gra	dient:			
Are there p If y	ools (circle one)? YE	S NO		
-	Size of stream poo	ols:		
	Maximum depth o	f stream pools:		-
Characteriz	e non-pool habitat: ru	ın, riffle, glide, oth	er:	
	/			•
Vegetation:	emergent, overhangi	ng, dominant spec	ies:	
Substrate: _				
Bank descri	ption:			

Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:

Other aquatic habitat characteristics, species observations, drawings, or comments: Feature was assessed from aerial imagery because it was located on private property. Feature may be man-made and appears to be maintained for cattle. No visible regetation in or around the feature

#### **Necessary Attachments:**

- 1. All field notes and other supporting documents
- 2. Site photographs

	Site Assessment revi	iewed by (FWS Field Off	ice) (date)	(biologist)	
	Date of Site Asse Site Assessment I	ssment: <u>10-22-09</u> (mm/dd/yyyy) Biologists: <u>Amrhein</u> (Last name)	BIGAdon (first name)	Perkins (Last name)	(first name)
	Site Location: <u>Ma</u>	(Last name) erced Co, T/O County, General location r		(Last name) Sec. 34 s or Lat./Long. or T-R-S	(first name)
		CH A MAP (include)		-	
	Proposed project n Brief description o	name: <u>B, F. STSK</u> of proposed action:	Dam Corre	ective Actor	n Aquert
			·		
	1) Is this site with	in the current or histori	c range of the CRF (	circle one). YES 1	NO
		n records of CRF with a list of all known CRF reco			YES NO
ocation	39 <u>GENE</u> (if multiple	<b>CRAL AQUATIC I</b> le ponds or streams are within			
0 CA	Size: <u>52</u>	200 St. (Bueded a	<i>•</i>		
	Vegetation: <u>Here</u> <u>No</u> or er	emergent, overhangin <u>s</u> <u>little</u> to <u>hangin</u> <u>regetation</u>	ng, dominant species: <u>No vege tation</u> visible	present with	in the pone
	Substrate:	assumed soil			
$\langle$		meral (circle one). If ep	Appendix D.		

	Appendix D.	
California Red-legged	Frog Habitat Site Assessment Da	ata Sheet

STREAM:	
---------	--

Bank full width: Depth at bank full:
Depth at bank full:
Stream gradient:
Are there pools (circle one)? YES NO
If yes,
Size of stream pools:
Maximum depth of stream pools:
Characterize non-pool habitat: run, riffle, glide, other:
Vegetation: emergent, overhanging, dominant species:
/
Substrate:
Bank description:

Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:

Other aquatic habitat characteristics, species observations, drawings, or comments: Feature exists at base of surrounding hill slopes where rainwater would naturally collect. Feature was assessed from aerial imagery because feature is located on private property. Feature may be man-made and appears to be maintained for cattle. Feature has a main pond and a long "finger" channel that is approximately 220 feet long and up to 10 feet wide on its Necessary Attachments:

- 1. All field notes and other supporting documents
- 2. Site photographs

## Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

1 C

	Site Assessment reviewed by (FWS Field Office) (date) (biologist)
	Date of Site Assessment: 10/1/09
	Site Assessment Biologists: <u>Anchein Brandon</u> <u>Perkins Tring</u> (Last name) (first name) (Last name) (first name) (first name)
	(Last name) (first name) (Last name) (first name)
	Site Location: Merced Co. TTOS ROBE Sec. 26 and 35 (County, General location name, UTM Coordinates or Lat./Long. or T-R-S).
	**ATTACH A MAP (include habitat types, important features, and species locations)**
• .	Proposed project name: <u>B.F. Sisk Dam Corrective</u> Action Project Brief description of proposed action:
	1) Is this site within the current or historic range of the CRF (circle one)? YES NO
	<ol> <li>Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO If yes, attach a list of all known CRF records with a map showing all locations.</li> </ol>
	40,41,43 GENERAL AQUATIC HABITAT CHARACTERIZATION (if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)
Location	POND: Size: Maximum depth:
	Vegetation: emergent, overhanging, dominant species:
	Substrate:
	Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:
	California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM:

Bank full width:	
Depth at bank full: /8 in.	
Stream gradient: <u>7/</u> ,	
Are there pools (circle one)? YES (NO)	)

If yes,

Size of stream pools: \_\_\_\_\_ Maximum depth of stream pools: \_\_\_\_

Characterize non-pool habitat: run, riffle, glide, other: \_\_\_\_\_\_

Vegetation: emergent, overhanging, dominant species: OVERHANKO: Fig EMEREDICATION

upland: grasses (oat, thistle) Substrate: Soil

Bank description: <u>sleep w/upland grasses</u>; open + exposed w/low

Perennial of Ephemeral Dircle one). If ephemeral, date it goes dry: \_

Other aquatic habitat characteristics, species observations, drawings, or comments: - Feature occurs in a natural drainage, pead cattails indicate that moisture levels were greater in past. Feature is lacking live emergent veg @ time of assessment, Feature runs 1017. from #69. - Flatted depression near fig tree may retain some water watersource: natural runoff. - Upland habitat; dirt road boarders drainage. (30A. to the west - Feature more deeply insized upsteam from fig tree.

Photo #'s: 7064, 7066, 7067

### **Necessary Attachments:**

- 1. All field notes and other supporting documents
- 2. Site photographs

	California Red-legged Frog Habitat Site Assessment Data Sheet					
	Site As	ssessment reviewed by	(FWS Field Office)	(date)	(biologist)	
		of Site Assessment: Assessment Biologists:	10-22-09 (mm/dd/yyyy) <u>Amrhein</u> (Last name)	(first name)	Perkins (Last name)	Terra (first name
	Site L		eral location name	, UTM Coordinates	or Lat./Long. or T-R-S	
		**ATTACH A M sed project name: <u><u>B</u>. description of proposed</u>	E Sisk	· · · · · · · · · · · · · · · · · · ·		Project
					-	
			н. Т			
	1) Is t	his site within the curr	ent or historic ra	nge of the CRF (c	ircle one)? YES 1	10
	2) Ar	e there known records If yes, attach a list of all k				YES NO
	PONE	GENERAL A (if multiple ponds or st			ACTERIZATIC	
110	PONE	): Size: <u>25A x 8</u>	vft.	Ma	ximum depth:	,5-H.
		Vegetation: emergen	t, overhanging, c	lominant species:	d/boorded area	L
		Substrate: <u>concrete</u>	lined		1	

# Appendix D.

STREAM:
Bank full width:
Depth at bank full:
Stream gradient:
Are there pools (circle one)? YES NO
If yes,
Size of stream pools:
Maximum depth of stream pools:
Characterize non-pool habitat: rup, riffle, glide, other:
Vegetation: emergent, overhanging, dominant species:
Substrate:
Bank description
Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:
Other aquatic habitat characteristics, species observations, drawings, or comments:
- Feature is a treatment pond, Water of feature is covered by wooden boards /deck, Area is inclosed by fencing (5in × 5in) mon-mode.
- reative is a treatment para, waid of feature (E)
by wooden poards /deck, Area is inclosed by rencing (bin x Din)
- water appears stagmant + is likely toxic for amphibians
- Woter appears studitarity 15 linely loxic for amprilorary
- Wildlife: several dead animals observed whin feature (cotton tail ground so
Photo's #: 6595-6599
Necessary Attachments:

All field notes and other supporting documents
 Site photographs
 Maps with important habitat features and species location

Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

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1 1

Site Assessment reviewed by	(FWS Field Office)	(date)	(biologist)	
Date of Site Assessment:	10/01/2009 (mm/dd/yyyy) <u>Amrhein</u> (Last name)	Brankon (first name)	(Last name)	(first name)
	eral location name,	UTM Coordinates of	r Lat./Long. or T-R	
**ATTACH A M Proposed project name: Brief description of proposed	F. Sisk D.	in Lorrect		Project
<ol> <li>Is this site within the curr</li> <li>Are there known records on If yes, attach a list of all k</li> </ol>	of CRF within 1.6	km (1 mi) of the	site (circle one)?	NO YES NO
<b>GENERAL AC</b> ( <i>if multiple ponds or st</i> <b>POND</b> : D /00' × 3 Size: D (00' × 3) Vegetation: emergen	0`	oposed action area, fill Max	imum depth:	
Substrate: <u>aspha</u>	.t, rock/gra	uel		

STREAM:
Bank full width:
Depth at bank full:
Stream gradient:
Are there pools (circle one)? YES NO
If yes,
Size of stream pools:
Maximum depth of stream pools:
Characterize non-pool habitat: run, riffle, glide, other:
Vegetation: emergent, overhanging, dominant species:
Substrate:
Bank description:
Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:
Other aquatic habitat characteristics, species observations, drawings, or comments:

Of - Feature is mon-made (excavated + impound). Consists of two pools. No water or vegetation in pools @ time of assessment. - Banks + upland habitat consists of asphalt + rock surrounded by chain linked fence w/ barbed wire @ top Open + exposed. - watersource piped in. Not suitable CRLF habitat. - Wildlife: red tail + crows Photo: 7/17 - 7/18

- 1. All field notes and other supporting documents
- 2. Site photographs

## Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

Site Assessment	(mm/dd/yyyy) t Biologists: <u>Amchein</u> (Last name)	(first name)	(Last name)	Terra (first name)
•	(Last name)	(first name)	(Last name)	(first name)
Site Location: <u>/</u>	Nerced Co. In an . (County, General location na	msectioned pol me, UTM Coordinates	or Lat./Long. or T-R	Luis Conza
** <b>ATT</b>	ACH A MAP (include ha	bitat types, important fe	atures, and species loca	ations)**
	t name: <u>B. F. S. sk</u> 1 of proposed action:	s Dam Correc	the Action	Project
		•	i.	
- -				
1) Is this site wi	thin the current or historic	range of the CRF (c	ircle one)? YES	NO
	own records of CRF within ch a list of all known CRF recor			YES NO
5 (if mul	NERAL AQUATIC H Itiple ponds or streams are within the			
POND: Size: ~	12,250 Acres	Ma	ximum depth:	70'-300
Vegetatio	on: emergent, overhanging bur, Smart weed,	g, dominant species: SPXSE_GrASSES	EMERITENT : WI	11000,
	: sand / rocks			

STREAM: Bank full width: Depth at bank full: Stream gradient: Are there pools (circle one)? YES NO If yes, Size of stream pools: Maximum depth of stream pools: Characterize non-pool habitat: run, riffle, glide, other: Vegetation: emergent, overhanging, dominant species: Substrate: Bank description/ **Perennial or Ephemeral** (*circle one*). If ephemeral, date it goes dry: Other aquatic habitat characteristics, species observations, drawings, or comments: - Reserviar has sparse vegetation w/ willow, cocklebur + smartweed where water permeates sandy /rocky banks, (Banks gran + ) little to no overhanging veg. exposed.) - Feature is entrapped @ NE edge by dam. - Dried algae mats on bank Presence of bivalues - watersource : water levels have been low for past 3-4 yrs per DWR. Source is canal / forebay in addition to natural runoff. - Wildlife: fish (rec. use), deer, racoon, coyofe, various birds, gulls. Photo's: 7078 - 7094 upland hab - grassy hills, dirt voods surrounding lake **Necessary Attachments:** 

1. All field notes and other supporting documents

2. Site photographs

	Site Assessment reviewed by (FWS Field Office) (date) (biologist)
	Date of Site Assessment: 10-22-09 (mm/dd/yyyy) Site Assessment Biologists: Amrhein Brandon (Last name) (first name) (Last name) (first name) (first name)
	Image: Construction       Image: Construction<
	Proposed project name: <u>B.F. Sisk Dam Corrective Action</u> Reject Brief description of proposed action:
	<ol> <li>Is this site within the current or historic range of the CRF (circle one)? YES NO</li> <li>Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO If yes, attach a list of all known CRF records with a map showing all locations.</li> </ol>
00	$\begin{array}{c} \textbf{GENERAL AQUATIC HABITAT CHARACTERIZATION} \\ \textbf{(if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)} \\ \textbf{POND:} \\ \textbf{Size: } \underbrace{N \ 2,500 \ sq. ft} ( \underbrace{Based on \ aerisels} ) \\ \textbf{Maximum depth: } \underbrace{ASSLAREd \ 3 \ ft} \\ \textbf{Vegetation: emergent, overhanging, dominant species: } \underbrace{Alone \ visible on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } \underbrace{Alone \ visible \ on \ aerisel} \\ \textbf{Maximum depth: } Alone \ visible \ on \ aerisel \ on \ o$
	Substrate: <u>assumed</u> <u>soil</u> Perennial or Ephemeral (circle one). If ephemeral, date it goes dry: <u>March</u> <u>based</u> <u>on</u> <u>histor</u> Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM:
Bank full width:
Depth at bank full:
Stream gradient:
Are there pools (circle one)? YES NO
If yes,
Size of stream pools:
Maximum depth of stream pools:
Characterize non-pool habitat: run, riffle, glide, other:
Vegetation: emergent, overhanging, dominant species:
Substrate:
Bank description:

Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:

Other aquatic habitat characteristics, species observations, drawings, or comments: Feature was assessed from aerial imagery because it was located on private property. Feature appears to be man-made. Endence of artificial daming on aerials. No ursible regetation in or around the feature. Probably sed by cattle.

#### **Necessary Attachments:**

- 1. All field notes and other supporting documents
- 2. Site photographs

## Appendix D. California Red-legged Frog Habitat Site Assessment Data Sheet

	Site Assessment reviewed by (FWS Field Office) (date) (biologist)
	Date of Site Assessment: 10/1/09
	Site Assessment Biologists: <u>Amrhein</u> <u>Brandon</u> (Last name) (first name) <u>(Last name)</u> (first name) (first name) (first name)
	(Last name) (first name) (Last name) (first name) Site Location: Merced G. TIOS ROBE Sec. 32
	(County, General location name, UTM Coordinates or Lat./Long. or T-R-S ). **ATTACH A MAP (include habitat types, important features, and species locations)**
	Proposed project name: <u>BF. Sisk Dam Corrective</u> Action Project Brief description of proposed action:
	1) Is this site within the current or historic range of the CRF (circle one)? YES NO
	2) Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO If yes, attach a list of all known CRF records with a map showing all locations.
outren	H1       GENERAL AQUATIC HABITAT CHARACTERIZATION         (if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)         POND:
04	
	Vegetation: emergent, overhanging, dominant species: <u>Unidertified grasses</u> .
	Substrate: <u>soil/silf</u>
	Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:
	California Red-legged Frog Habitat Site Assessment Data Sheet

STRE	
SIKL	
	Bank full width:
	Depth at bank full:
	Stream gradient:
-	Are there pools (circle one)? YES NO If yes,
	Size of stream pools:
	Maximum depth of stream pools:
•	Characterize non-pool habitat: run, riffle, glide, other:
	Vegetation: emergent, overhanging, dominant species:
	Substrate:
	Bank description:
Perenr	nial or Ephemeral (circle one). If ephemeral, date it goes dry:
Other a	equatic habitat characteristics, species observations, drawings, or comments:
	Feature assessed from quary (from 1,500 st clevation), Feature occurs a natural depression typically covered by water when lake is fuller watersource natural water left from receeding lake levels.
· - /	Feature assessed from quary (from 1,500 ft clevation), teature occurs
in	a notical depression tupically reversed by water when lake is filled
	interesting the local from recording take lovels
	watersource rain water werks with how recounting mile were.
- 0	Treen vegetation mostly acassas arounds is a 40-4
603	for around pool = all the way to the feature edge.
-w	idlife tule elk observed foraging + drinking in feature
- La	t individuals several animal frains visible (tochall directions) of the pand Ke edge appears to be 3/4 mile from feature (a) time assessment (photos: 701 (0 - 7023)
of a	Photos: 7016-7023

### **Necessary Attachments:**

- 1. All field notes and other supporting documents
- 2. Site photographs

Appendix D. <u>California Red-legged Frog Habitat Site Assessment Data Sheet</u>

j.

	Site Assessment reviewed by
	Date of Site Assessment: 10/1/2009 (mm/dd/yyyy) Site Assessment Biologists: Amphein Brandon Perkins Terra
	Site Assessment Biologists: <u>Anchein Brandon</u> (Last name) (first name) (Last name) (first name) (first name) (first name)
	(Last name) (first name) (Last name) (first name) Site Location: Merced (o. TIIS ROBE Sec. 4
	(County, General location name, UTM Coordinates or Lat./Long. or T-R-S ). **ATTACH A MAP (include habitat types, important features, and species locations)**
	Proposed project name: <u>B.F. Sisk Dam Corrective Action</u> Project Brief description of proposed action:
	1) Is this site within the current or historic range of the CRF (circle one)? YES NO
	<ol> <li>Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO If yes, attach a list of all known CRF records with a map showing all locations.</li> </ol>
1 24	48 GENERAL AQUATIC HABITAT CHARACTERIZATION (if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)
Location	POND:Size: $20^{5} \times (5^{5})$ Maximum depth: $3.5 + 1$
	Vegetation: emergent, overhanging, dominant species: <u>no vegetation</u> <u>steep slopes w/animal trails entering from the</u> sides
	Substrate: <u>Sol</u>
(	Perennia) or Ephemeral (circle one). If ephemeral, date it goes dry:

REAM:
Bank full width:
Depth at bank full:
Stream gradient:
Are there pools (circle one)? YES NO
If yes,
Size of stream pools:
Maximum depth of stream pools:
Characterize non-pool habitat: run, riffle, glide, other:
Vegetation: emergent, overhanging, dominant species:
Substrate:
Bank description:
/;

Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:

Other aquatic habitat characteristics, species observations, drawings, or comments: - Feature assessed from quary - Man-made feature. Standing water in feature a time of assessment. Appears to be no more than 12" deep entraped @ west edge. - Watersource: run off (natural During wet conditions, feature feature appears to reach suff max depth. Water appears stagnar - Coyole seen leaving feature. Land contains dense a - Coyole seen leaving reacture. <u>Photois: 6978-6979</u> - upland habitat slopes mostly bare w/ <u>patches of upland grasses</u> <u>pirt road on burn. Sleep slopes about</u> <u>Animal tracks entering from the sides</u> Sleep slopes abonk w/

1. All field notes and other supporting documents

2. Site photographs

Appendix D.	
California Red-legged Frog Habitat Site Assessment Data She	et

-l. .

	Site Assessment reviewed by (FWS Field Office) (date) (biologist)
	Date of Site Assessment: 10/1/09 (mm/dd/yyyy) Site Assessment Biologists: Amhein Brandon Perking Terra (Last name) (first name) (Last name) (first name) (first name)
м , ,	(Last name)(first name)(Last name)(first name)Site Location: Merced (c. TIOS ROBE Sec. 26 and 35 (County, General location name, UTM Coordinates or Lat./Long. or T-R-S).**ATTACH A MAP (include habitat types, important features, and species locations)**
	Proposed project name: <u>B.F. Sisk Dam Corrective Action</u> Project Brief description of proposed action:
pocation	<ol> <li>Is this site within the current or historic range of the CRF (circle one)? YES NO</li> <li>Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO If yes, attach a list of all known CRF records with a map showing all locations.</li> <li><u>GENERAL AQUATIC HABITAT CHARACTERIZATION</u> (if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)</li> </ol>
hoe	POND:       Size:         Size:       Maximum depth:         Vegetation: emergent, overhanging, dominant species:
	Perennial or Ephemeral (circle one). If ephemeral, date it goes dry:

STREAM: Bank full width: Depth at bank full: < 1-Stream gradient:  $10^{1/2} - 3^{1/2}$ Are there pools (circle one)? YES (NO) If yes, Size of stream pools: Maximum depth of stream pools: Characterize non-pool habitat: run, riffle, glide, other: other (dry n/a Vegetation: emergent, overhanging, dominant species: 10 emergent veg in channel, UPLAND-grasses Substrate: dirt/soil Bank description: steep w/vpland grasses + exposed contains some burgows. Banks prone to erosion (erade easily) Open + exposed Perennial or (Ephemeral) (circle one). If ephemeral, date it goes dry: \_\_\_\_\_ Other aquatic habitat characteristics, species observations, drawings, or comments: - Natural drainage feature of yoland hills, soils appear to drain water guickly " lacks emergent / hydrophytic vegetation - Watersource natural /run off. - no wildlife observed. Several small mammal burrows on bonks - Feature does not appear to retain water long to support viable breeding habitat. enough Photo: 70(28-7071 **Necessary Attachments:** 

- 1. All field notes and other supporting documents
- 2. Site photographs

# **APPENDIX C**

Assessment Site Photographs



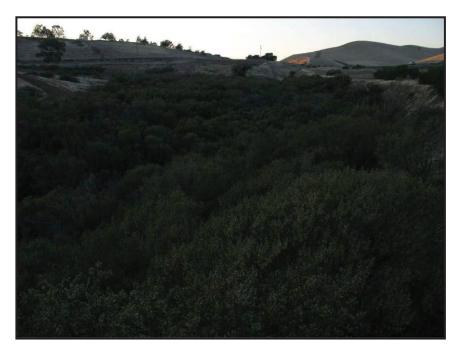
Location 1a. Looking north. CDFG road is visible beyond the feature..



Location 1b. Looking southeast. Highway toe of slope on right. Concrete drainage visible in background.



Location 2. Looking north. Constructed berm on right side of image.



Location 3. Looking northwest. Highway visible on right.



Locations 4 and 5. Looking north.



Location 6. Looking east.



Location 7. Looking northeast from highway shoulder.



Location 8. Looking west. Base of dam is in background.



Location. 9. Looking northeast.



Location 10. Looking east.



Location 10. Looking north.



Location 11. Looking northeast. Highway 152 in background.



Location 12. Looking southwest



Location 12. Looking west



Location 13. Looking northeast. Culvert exiting pond (Location 12) in foreground.



Location 14. Looking west.



Location 15. Looking northwest.



Location 16. Looking east.



Photograph Location 17. — Looking north.



*Location 18. — Looking north.* 



Location 1b. — Looking north. This image shows the inlet depression that connects O'Neil Forebay to the emergent wetland.



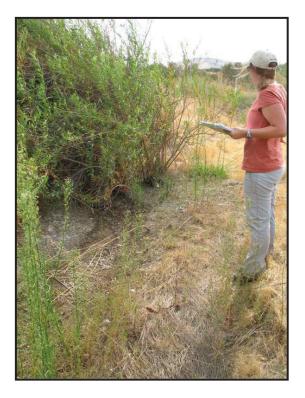
*Location 19. — Looking north.* 



Location 20. Looking south.



Location 21. Looking southeast.



Location 22. — Looking southwest.



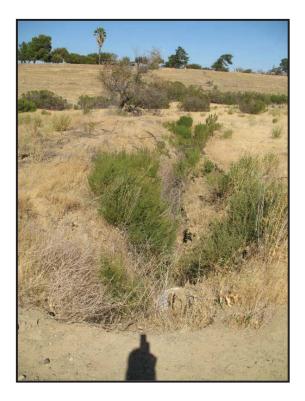
Locations 23 and 24. Looking northeast.



Location 25. Looking northeast.



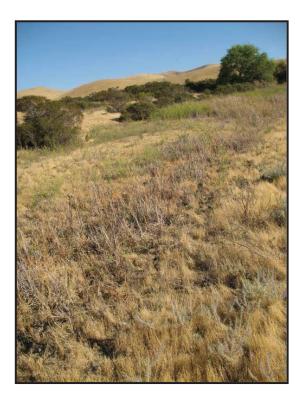
Locations 26 and 27. Looking northeast.



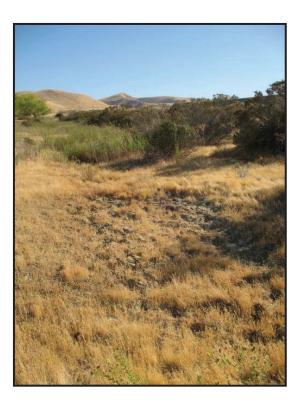
Location 28. Looking north.



Locations 29 and 30. Looking west.



Location 31. Looking north at larger feature.



Location 31. Looking north at smaller feature.



Location 32. Looking west.



Location 34. Looking west.



Location 33. No photo.



Location 35. Looking west.



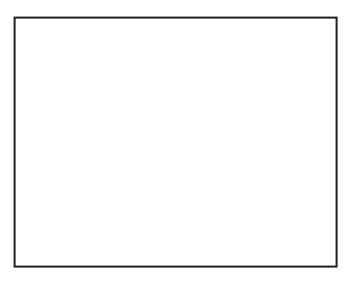
Location 36. Pool 2 on data sheet.



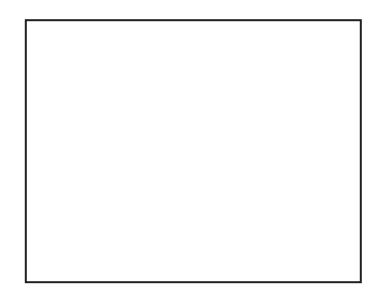
Location 36. Looking north. Pool 3 in foreground and pool 4 in background.



Location 37. Looking south.



Location 38. No photo.



Location 39. No photo.



Location 40. Looking southwest.



Location 41. Looking north.



Location 42. Looking east.



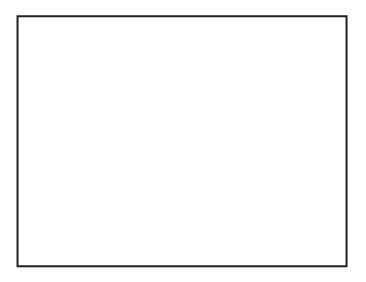
Location 43. Looking south.



Location 44. Looking northeast.



Location 45. Looking west.



Location 46. Aerial image.



Location 47. Looking west.



Location 48. Looking southwest.



Location 49. Looking northwest.



Location 50. Looking southeast.

## **B.F. Sisk Dam Corrective Action Project**

# California Tiger Salamander Site Assessment

B.F. Sisk Dam Central Valley Project, California



March 2010



U.S. Department of the Interior Bureau of Reclamation



State of California Department of Water Resources

### Mission of the Bureau of Reclamation

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.

### Department of Water Resources Mission Statement

To manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments.

**B.F. Sisk Dam Corrective Action Project** 

### California Tiger Salamander Site Assessment

B. F. Sisk Dam Central Valley Project, California

Prepared by:



North State Resources, Inc. 5000 Bechelli Lane, Suite 203 Redding, CA 96002

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### **B. F. Sisk Dam Corrective Action Project**

### California Tiger Salamander Site Assessment

### 1. Introduction

North State Resources, Inc. (NSR) conducted a site assessment of the B.F. Sisk Dam Corrective Action Project (project) to determine if the site could be utilized by the California tiger salamander (*Ambystoma californiense*). As required by the *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* (U.S. Fish and Wildlife Service 2003), the field survey and other information compiled address three elements relevant to the potential occurrence of the California tiger salamander on the site. These elements are (1) is the project site within the range of the California tiger salamander, (2) what are the known localities of CTS within the project site and within 3.1 miles of the project boundaries, and (3) what are the habitats within the project site and within 1.24 miles of the project boundaries.

This Site Assessment Report is organized into the following sections:

- I. Introduction
- II. General Project Description
- III. Methodology
- IV. Overview of California Tiger Salamander Biology
- V. Results of Site Assessment
- VI. Conclusions
- VII. References

### 2. General Project Description

The project site (Figure 1) is located on the west side of California's Central Valley, near the community of Santa Nella, approximately 12 miles west of Los Banos, California. It is located in the *San Luis Dam, California* 7.5-minute U.S. Geological Survey quadrangle.

Sisk Dam is part of the San Luis Joint-Use Complex, which was designed and constructed by the federal government and is operated and maintained by the California Department of Water Resources (DWR). The complex was constructed to provide supplemental irrigation water storage for the federal Central Valley Project (CVP) and storage of municipal and industrial water for the California State Water Project (SWP).

Figure 1. Project Location

The dam impounds San Luis Reservoir, which, with a total water storage capacity of more than 2 million acre-feet, is one of the largest off-channel storage facilities in the country and a key component of the water supply system in California. Water is lifted into the reservoir for storage by the Gianelli Pumping-Generating Plant from the California Aqueduct and is diverted from the Delta-Mendota Canal via O'Neill Forebay.

The dam and reservoir are located in an area of high potential for severe earthquake loading from active faults. A recent series of studies and analyses, including a probabilistic seismic analysis completed in 2006, determined that corrective actions were justified at Sisk Dam to reduce risk to the downstream public. The Bureau of Reclamation (Reclamation) and DWR seek to mitigate potential safety concerns identified in previous and ongoing studies by modifying water retention structures at Sisk Dam in order to reduce the seismic, static, and hydrologic risk.

The project will involve two main components: stability berms (buttresses) and a dam raise. Project construction will require a large amount (on the order of between 2 million and 20 million cubic yards) of earth material, all of which would be obtained from a number of borrow sites within the project boundary (Figure 2).

### 3. Methodology

### **Database Search and Literature Review**

The California Natural Diversity Database (CNDDB) (California Department of Fish and Game 2009) was reviewed for the project area. The intent of the database review was to determine the closest documented occurrences of California tiger salamander to the project site. Additionally, NSR biologists reviewed the best available data pertaining to California tiger salamander local occurrences, life requirements, and cause of decline, as well as the *Designation of Critical Habitat for the California Tiger Salamander, Central Population, Final Rule* (70 FR 49379), including current range maps and designated critical habitat units.

### **Field Surveys**

Mike Bumgardner, Principal Biologist of Bumgardner Biological Consulting and North State Resources biologists Brandon Amrhein, Terra Perkins, and Julian Colescott conducted a field survey in September 2009. The objective of the survey was to determine if suitable California tiger salamander upland and/or breeding habitat is present on the project site. Transects were walked to achieve 100 percent visual coverage of the project site and burrow locations were mapped. Representative photographs were taken of all upland and aquatic habitats on the site (Appendix A). Figure 2. Proposed Project Activity Areas

### 4. Overview of California Tiger Salamander Biology

The California tiger salamander is a large (adult males are about 8 inches long, females a little less than 7 inches (Barry and Shaffer 1994)), stocky, terrestrial salamander with a broad, rounded snout. It is an endemic member of the California grassland community, inhabiting the Central Valley and surrounding foothills and valleys, from Sonoma County to Santa Barbara County (Trenham et al. 2000). Historically, California tiger salamanders probably relied exclusively on shallow vernal pools for breeding habitat, but they now make extensive use of ponds constructed for cattle, particularly in foothill habitat (Shaffer and Trenham 2005). Ponds that contain populations of exotic fishes and bullfrogs (*Rana catesbeiana*) appear unsuitable as breeding habitat (Shaffer et al. 1993; Fisher and Shaffer 1996; Shaffer and Trenham 2005).

Ecologically, this species has an obligate biphasic life cycle. Although larvae develop in the pools and ponds in which they were born, they are otherwise terrestrial salamanders that spend most of their postmetamorphic lives in widely dispersed, underground retreats (Trenham 2001). Adult California tiger salamanders are rarely encountered, even where they are known to be abundant, spending most of the year in or near upland refugia (Storer 1925; Barry and Shaffer 1994; Shaffer and Trenham 2005). Seasonal migration of adults to pools and ponds occurs only for the purposes of breeding.

California tiger salamanders aestivate during the dry months of summer and autumn. They are poor burrowers, using burrows excavated by ground squirrels (*Spermophilus beecheyi*) and other burrowing mammals. California tiger salamanders emerge from aestivation only after autumn rains commence. Adults then engage in nocturnal migrations, congregating at breeding sites. Eggs are deposited singly or in small groups of 2–4, submerged in relatively shallow water (Storer 1925; Twitty 1941). Following breeding, adults move away from breeding ponds to upland refugia. Eggs hatch 2–4 weeks after deposition (Storer 1925; Twitty 1941). Larvae feed on algae and aquatic invertebrates, grow rapidly, and metamorphose as the pond water level recedes in late spring or summer (Storer 1925). A minimum of approximately 10 weeks is required to complete development through metamorphosis (Anderson 1968 and Feaver 1971, as cited in Jennings and Hayes 1994). Following metamorphosis, juveniles emigrate at night from the drying breeding site to upland refugia. Juveniles and adults emerge from refugia on cool, moist, or foggy nights to feed on a wide variety of invertebrate and small vertebrate prey (Shaffer et al. 1993).

### 5. Results of California Tiger Salamander Assessment

### Element 1. Is the project site within the range of the California tiger salamander?

The project site is located within the range of the Central Population of California tiger salamander (federally listed as threatened) but is not located within a designated critical habitat unit (70 FR 49379).

### Element 2. What are the known localities of California tiger salamander within the project site and within 3.1 miles of the project boundaries?

Protocol-level surveys for California tiger salamander have not been conducted on the project site and the CNDDB has no records within the project boundaries. As shown in Figure 3, the CNDDB contains one record of California tiger salamander within 3.1 miles of the project site (approximately 2 miles south of the project boundary). In addition, there are undocumented reports of adult salamanders from the Basalt Use Area approximately 0.5 mile south of the project boundary (Bureau of Reclamation and California Department of Parks and Recreation 2005).

### Element 3. What are the habitats within the project site and within 1.24 miles of the project boundaries?

### **PROJECT SITE BIOLOGICAL CHARACTERISTICS**

The topography of the 2,480-acre project site varies from relatively flat or gently rolling in the northeast, to steep and mountainous in the southwest. Elevation ranges between 230 feet above mean sea level (msl) near O'Neal Forebay to almost 1,600 feet above msl in the quarry near Basalt Hill. Fossorial mammals, including the American badger (*Taxidea taxus*) and California ground squirrel were observed within the project boundaries and burrows are present throughout the project site.

Many areas of the project site are open and undeveloped. However, there are several developed areas in and adjacent to project boundaries to support water and recreation operations. The operations and maintenance facilities for DWR and the Four Rivers Sector within the Central Valley District of the California Department of Parks and Recreation are at Gonzaga Road, off State Route (SR) 152 at the base of San Luis Reservoir dam. This area is developed with the Gianelli Pumping Plant (operated by DWR) administrative offices, maintenance garages, and work areas. Other developed areas include the Basalt Use Area to the south of the Gonzaga

Figure 3. California Tiger Salamander Occurrences in the Region

Road entrance, which contains camping, a picnic area, boat ramp, and parking. Nearby is the boat launching area for San Luis Reservoir. A quarry, used for gravel extraction during the construction of the dam, is located at the southeast corner of San Luis Reservoir. The quarry is used by DWR for any facilities (e.g., dam and canal) repairs on DWR's systems. The California Departemnt of Forestry and Fire Protection operates a fire protection station east of the State Recreation Area Administrative Offices, south of Gonzaga Road.

### **Terrestrial Habitats**

Terrestrial habitats were characterized based upon descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988). Annual grassland is the dominant upland habitat. In addition to annual grassland, the following upland habitat types were mapped within the project site: alkali desert scrub, barren, coastal scrub, mixed chaparral, and valley foothill riparian.

### Annual Grassland

Annual grassland habitat is the dominant terrestrial habitat occurring within the project boundaries (1,074.68 acres) and is dominated by non-native annual grasses and forbs. This habitat occurs on all the soil map units and the land types present on the site with minor differences in species composition based on location. The dominant non-native grasses include wild oats (*Avena barbata*), ripgut brome (*Bromus diandrus*), and soft chess (*Bromus hordeaceus*). The dominant non-native forbs include black mustard (*Brassica nigra*) and broadleaved pepperweed (*Lepidium latifolium*). These dominants are representative of nearly all of the areas mapped as annual grassland, except for areas adjacent to and within the intermittent drainages along the toe of Sisk Dam. On the steep hillsides to the south of the reservoir, the native forb, hayfield tarweed (*Hemizonia congesta*), is also relatively abundant.

The annual grassland within the intermittent drainages along the toe of Sisk Dam has the greatest diversity of native plants and the greatest concentration of broad-leaved pepperweed. Nonnatives present in these more mesic areas include Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), curly dock (*Rumex crispus*), horehound (*Marrubium vulgare*), and cocklebur (*Xanthium strumarium*). Native grasses and forbs are a minor component in the annual grassland as a whole, but are most abundant in the more mesic areas. Natives include vinegar weed (*Trichostema lanceolatum*), salt heliotrope (*Heliotropium curassavicum*), purple needle grass (*Nassella pulchra*), and gum plant (*Grindelia camporum*).

### Alkali Desert Scrub

Alkali desert scrub habitat occurs as scattered clusters and moderately dense linear stands along intermittent drainages and portions of the reservoir shorelines (3.60 acres). This habitat is distinguished by near monotypic stands of big saltbush (*Atriplex lentiformis*). The largest and densest stand adjacent to the project area occurs along the southern shoreline (bank full) of the San Luis Reservoir. This stand includes hundreds of individuals of big saltbush that are concentrated at the base of a drainage and extend along the reservoir shoreline for approximately a quarter mile. The large stand of big saltbush near the toe of Sisk Dam is associated with adjacent stands of coyote bush and the lone honey mesquite (*Prosopis glandulosa* ssp.

*torreyana*). Grasslands adjacent to alkali desert scrub stands have higher concentrations of salt heliotrope than the grasslands at large within the project site. Big saltbush, salt heliotrope, and honey mesquite are associated with the halophytic phase of the alkali scrub plant assemblage.

### Coastal Scrub

Coastal scrub habitat (46.00 acres) is distinguished by dense stands of coyote bush (*Baccharis pilularis*). Big saltbush is a minor component of the coastal scrub habitat and occurs at the upper and drier edges of the coastal scrub habitat.

### Valley Foothill Riparian

The valley foothill riparian habitat type (5.44 acres) is dominated by native trees, including Fremont cottonwood (*Populus fremontii* spp. *fremontii*), red willow (*Salix laevigata*), and black willow (*Salix gooddingii*). The dominant shrub in this habitat type is mule fat (*Baccharis salicifolia*), which forms dense stands surrounding the cottonwoods and willows.

### Mixed Chaparral

Mixed chaparral habitat (0.99 acres) is comprised of a single stand of dense shrubs on a steep slope northwest of Borrow Area 1. The dominant shrub in this stand is silver buffaloberry (*Shepherdia argentea*). Subdominant shrubs in this stand are blue elderberry (*Sambucus mexicana*) and wild rose (*Rosa* sp.).

### Barren

Barren habitat (357.96 acres) is comprised of the disturbed areas that have less than 2 percent total vegetative cover.

### Aquatic Habitats

The hydrology and floodplain of the watershed have been significantly altered by the development of the reservoir. The project area lies in the Panoche-San Luis Reservoir watershed, part of the San Joaquin River Basin, which drains into San Luis Creek. Historically, San Luis Creek flowed into the San Joaquin River, which then emptied into San Francisco Bay. Since completion of San Luis Dam, runoff from San Luis Creek has been captured in San Luis Reservoir and diverted for SWP and CVP purposes.

Aquatic habitats within the project boundaries include ephemeral drainages, seasonal wetlands, ephemeral wetlands, and the San Luis Reservoir. These features are described below.

### Ephemeral Drainages

Three ephemeral drainages occur within the project boundaries. These drainages are part of a network that was designed to channel lake seepage water to O'Neil Forebay. The drainages are regularly maintained and kept clear of vegetation, although a few overhanging willows and cottonwoods are present along the largest of the three drainages. All three features were dry at the time of the assessment. According to DWR representatives, the lake has been especially low for 3 to 4 years. Until lake levels increase dramatically, lake seepage will be minimal and this

feature will remain predominately dry. Because of the ephemeral nature of these features, they are unlikely to provide suitable California tiger salamander breeding habitat.

### Seasonal Wetland

One seasonal wetland is present within the project boundaries. It is comprised of two main depressions that contain remnant emergent vegetation, such as cattails (*Typha* sp.) and mule fat (*Baccharis salicifolia*). Overhanging vegetation is present and includes cottonwoods and willows with coyote bush (*Baccharis pilularis*) in the upland areas. One depression is approximately 15 feet x 30 feet in size and the other is larger, at approximately 150 feet x 25 feet. This wetland derives its water from dam seepage and has a maximum depth of approximately 1 foot. It was dry at the time of the assessment and appears to have been dry for some time. Until lake levels increase dramatically, lake seepage will be minimal and this feature will remain predominately dry and unsuitable as California tiger salamander breeding habitat.

### Ephemeral Wetlands

Two ephemeral wetlands are present within the project boundaries. The features occur on the toe of the slope at the southern end of the dam. They are areas that become saturated with dam seepage, facilitating the growth of wetland vegetation. The features do not appear to retain any surface water, instead excess water drains down slope via drainage ditches to a larger drainage network. Thus, the ephemeral wetlands within the project boundaries do not provide suitable California tiger salamander breeding habitat.

### **Quarry Depression**

A depression has been excavated within the boundary of proposed Borrow Site 1. It has a rock aggregate substrate similar to the surrounding quarry substrate. Upland grasses and forbs grow in and out of the feature (e.g., vinegar weed (*Trichostema lanceolatum*), tarweed (*Hemizonia congesta*), and wild oats (*Avena barbata*)). The pool is approximately 10 feet x 4 feet in size with a 3 foot depth. No water was present at the time of the assessment. Based on the presence of upland vegetation in the feature, the rock aggregate soil drains very effectively and no water is retained in the pool for any significant length of time. Thus, this feature does not provide suitable California tiger salamander breeding habitat.

### San Luis Reservoir

San Luis Reservoir has a water storage capacity of more than 2 million acre-feet and depths up to 300 feet. Habitat types and substrates vary along the lake's perimeter. This assessment location was selected based on the low gradient shoreline and the presence of significant amounts of emergent vegetation in the form of young willows and cocklebur (*Xanthium* sp.). The substrate at this location is primarily sand. No large overhanging vegetation occurs around the lake edge because water levels are significantly lower than in previous years. Currently, there are several hundred feet of barren shoreline. The reservoir contains many predatory fish (e.g., striped bass (*Morone saxatilis*), channel catfish (*Ictalurus punctatus*), largemouth bass, crappie (*Pomoxis* sp.), and bluegill) and is not suitable breeding habitat for the California tiger salamander.

### **BIOLOGICAL CHARACTERISTICS OF THE SURROUNDING AREA**

The project area is surrounded by a variety of land uses. Residential and commercial uses exist in nearby Santa Nella to the northeast of O'Neill Forebay. Lands to the southeast of the project area between San Luis Reservoir and Los Banos Reservoir include large, privately owned ranchlands, agricultural lands, an electrical substation, and scattered nonresidential uses. A national cemetery exists to the northeast of O'Neill Forebay, and immediately west of San Luis Reservoir is Pacheco State Park, owned by the California Department of Parks and Recreation. California Department of Fish and Game properties are located north of the San Luis Reservoir and east and west of the O'Neill Forebay.

The area surrounding the project site is characterized by sparse development and large expanses of undeveloped land. Similar to the project site, the surrounding area is characterized by rolling hills vegetated with annual grasses and abundant burrows. Given the presence of burrows on the project site, it is expected that burrows occur in the surrounding grasslands. Based on aerial photography, four stock ponds appear to be present within 1 mile of the project site. Given the use of the surrounding grasslands for cattle grazing, it is expected that additional stock ponds are present in the project vicinity.

The project site has a high-level of continuity with surrounding habitats given the limited extent of development and the large expanses of surrounding grasslands. Wildlife can currently move throughout the project site and without restriction to surrounding grassland habitats to the south and west. Interstate 5 (I-5), Highway 152, the California Aqueduct, and the Delta-Mendota Canal likely pose some hindrance to wildlife movement to the north and east.

### 6. Conclusions

The project site is within the range of the California tiger salamander and the nearest documented occurrence (CNDDB) of the species is approximately 2 miles to the south of the project site. However, there are undocumented reports of adult California tiger salamanders from the Basalt Use Area approximately 0.5 mile south of the project boundary (Bureau of Reclamation and California Department of Parks and Recreation 2005). The only permanent aquatic feature within the project boundary is San Luis Reservoir. Ephemeral and seasonal wetlands are present but do not currently appear to provide suitable California tiger salamander breeding habitat. The grasslands on the project site contain abundant mammal burrows suitable for California tiger salamander aestivation. In addition, grassland habitat that is expected to contain stock ponds and small mammal burrows surrounds the project area and provides dispersal opportunities for California tiger salamanders to or from the project site.

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### **APPENDIX A**

Representative Photographs of the Project Site



**Photograph 1** – The photograph shows Sisk Dam and O'Neill Forebay in the background, San Luis Reservoir in the middle ground, and annual grasslands in the foreground.



**Photograph 2** – The photograph shows the dense, annual grassland that is located in the low rolling hills north of the existing rock quarry. The photo also shows the steep, rocky slopes below the rock quarry.



**Photograph 3.** Looking southwest from the eastern edge of the project area, south of State Route 152 and Gonzaga Road. Visible in the photograph is the dam, the seep wetlands at the base of the dam, and Basalt Hill Road



**Photograph 4.** Seepage wetlands occur in the lands east of the foot of the dam. These wetland features are connected via a series of ditches that help to convey the waters to O'Neill Forebay.



**Photograph 5.** A number of seasonal wetlands, such as the one in this photograph, occur east of the dam.



**Photograph 6.** Several ephemeral drainages exit the hills surrounding the project area, including this 2-foot wide ephemeral drainage.



**Photograph 7.** This photograph shows the single "mixed chaparral" stand of silver buffaloberry.



**Photograph 8.** This photograph shows the San Luis Reservoir below the full pool elevation. The dam can be seen in the background, and a temporary road in the foreground.

### Appendix B Biological Survey Forms and Project Area Vegetation

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### **Biological Survey Forms**

The following forms are from reconnaissance-level field surveys by EDAW in September 2002 and June 2003.

	Weather				
Park: Pacheco SP SLR & LBC other:	Time: 1020				
Cumum Installant	Air Temp: 80°				
Survey location: Los Banos Reservoir	Wind Speed: Ø				
Eland Carver,	Cloud Cover: Ø				
Water feature type: stockpond intermittent drainage perennial stream lacustrine other: Artifical wetland (overflow/leakage from dam)	Water factors type:				
Map ID #:         LB-1         Photo #:         Ø					
Vegetation Adjacent to Water Feature					
Notes:mulefat	Anti-grade				
Site Quality           Degradation ?         Yes         No         Evidence of cattle?         Yes         No         Evidence of cattle?           Grazing?         Severe         Moderate         None         Weed infestation?         Yes         No					
Notes:					
Special-status Amphibians/Reptiles					
Foothill Yellow-legged Frog         Observed during survey?         □ Yes       No         If yes, number of individuals:					
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Date: 8 June 2003	Surveyors: Edson	Weather
Park: Pacheco SP 🛛 SL	R LBC other:	Time:
Survey location: Medeiros us Forebay	e area located on the south shore of the O'Neill	Air Temp: Wind Speed: Cloud Cover:
	oond  intermittent drainage  perennial stream rine  other:	n
Map ID #: SL-2	Photo #:	
	Vegetation Adjacent to Water Featur	re
	ent at several locations. The only large area of emer ossibly artificial, that is located adjacent to the fore	
Grazing? Severe Modera	Site Quality           Evidence of cattle?         ☐ Yes         No         Evidence           ate         △ None         Weed infestation?         ☐ Yes         △ Nor           roads and vegetation management activities.         ○         ○         ○         ○	of pigs?  Yes No Species:
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### **Project Area Vegetation**

The following describes the vegetation of San Luis Reservoir State Recreation Area and the DFG-managed wildlife areas. These areas include land around San Luis Reservoir, the O'Neill Forebay, Los Banos Reservoir and the San Luis and O'Neill Forebay Wildlife Areas. The vegetation of these areas consists of riparian woodland, blue oak woodland and savanna, coast live oak woodland, ornamental trees, California sagebrush scrub, grasslands, mesic herbaceous (wetland), iodine bush scrub (alkali sink scrub), and ruderal (non-native and weedy) plant communities, The grassland is the dominant vegetation of the park with the only woodland observed outside park boundaries on distant hills. The riparian woodland and mesic herbaceous types occur at the edge of the reservoirs and along watercourses, The iodine bush scrub occurs at Salt Spring, a tributary to Los Banos Reservoir. Where appropriate, the naming system used in *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995), was incorporated into the name of the vegetation types in this report.

### **Black Willow Riparian Woodland**

Black willow riparian woodland occurs at the edges of San Luis Reservoir, Los Banos Reservoir, and O'Neill Forebay; along watercourses but below the level of high water at San Luis Reservoir; and along Los Banos Creek as it flows into Los Banos Reservoir. It also occurs at O'Neill Forebay Wildlife Area. The black willow riparian woodland is particularly well developed along Los Banos Creek immediately upstream from Los Banos Reservoir. It consists of black willow trees *(Salix gooding11)* trees, which are 8 to 12 inches in diameter at breastheight (4.5 feet, dbh) and up to 40 feet tall. The trees grow from 6 to 10 feet apart with a canopy cover that varies from 60 to 100 percent.

The shrub understory consists of mulefat (*Baccharis sp.*) and a few salt cedar plants (*Tamarisksp.*). Herbaceous species in the understory are dominated by crabgrass (*Cynodon dactylon*), cocklebur (*Xantium strumarium*), and Italian thistle (*Carduus pycnocephalus*), Below the high water mark of San Luis Reservoir, black willow riparian scrub occurs in watercourses. The willow trees are able to survive inundation during years of normal rainfall and years of drought. These willows are able to persist from upstream runoff flowing in the watercourses for at least part of the spring and summer. The trees are typically 3 to 6 inches in diameter and 20 feet tall. During wet winters, the reservoir remains full for a long duration and the willow trees die because they cannot survive such prolonged inundation. This vegetation is generally thick, with 100 percent cover, but is narrow in width.

The riparian vegetation at the edge of the shore of the reservoirs includes a mixture of black willow, Fremont cottonwood (*Populus Fremont 11*), western sycamore (*Platanus racemosa*), sandbar willow (*Salix exigua*), and mulefat. These species grow mostly sparsely along the edge of the shore of the reservoirs, but occasionally they will grow in clumps. The understory of these areas consists of mesic herbaceous vegetation. In some areas, broad-leaf pepper-grass (*Lepidtum latifoltum*) occurs beneath or at the edge of the canopy of the riparian trees.

### California Sycamore Riparian Woodland

The California sycamore riparian woodland occurs in a limited area along one of the watercourses at San Luis Wildlife Area This woodland consists of mature western sycamore trees growing in a sparse array along the watercourse. Canopy cover approximates 70 percent. The sycamores grow to 40 feet tall and at least 24 inches in diameter at breastheight (4.5 feet, dbh). The understory consists of coyote brush *(Bacharis pilularis)* and poison oak *(Toxicodendron diversilobum)*.

### Blue Oak Woodland and Savanna

The blue oak woodland and savanna occurs in San Luis W ildlife Area. Blue oak *(Quercus douglas11)* is the dominant tree of this woodland. An occasional coast live oak *(Quercus agnfo/ia)* also occurs in the blue oak woodland. The blue oak woodland occurs on the tops and sides of the ridges in small clumps. This cover of the blue oak woodland ranges from 80 to approximately 20 percent. Nevertheless, the blue oak woodland also grades into the blue oak and savanna vegetation type, which consists of a sparse cover of trees growing within grassland.

The understory of the blue oak woodland mostly consists of various species of non-native grasses and occasional native species of forbs (non-grassy plants). The non-native species of grass include wild oats (*Avena fatua*) and ripgut brome (*Bromus diandrus*). Blue dicks (*Dichelostemma capitatum*) and clarkia (*Clarkia* sp.) also occur in the understory. Understory shrubs include California sagebrush (*Artemesia californica*), redberry (*Rhamnus crocea*), and eriophyllum (*Enophyllum confertiflorum*).

### Coast Live Oak Woodland

The coast live oak woodland occurs in San Luis Wildlife Area. It consists of both blue and coast live oak tree s with California bay *(Umbellularia californica)*, valley oak *(Quercus lobata)*, and California buckeye *(Aesculus californica)*. Stands of this woodland type are generally not very large and occur in the canyon bottoms and on the shadier slopes. This oak woodland is very similar to the blue oak woodland except that the blue oaks are much fewer.

The understory of the coast live oak woodland tends to support shrubs and forbs as opposed to grass. Species present in the understory include woodland sanicle (*Sanicula crassicaule*), blue wildrye (*Elymus g/aucus*), miner's lettuce (*Claytonia perfoliata*), fiesta flower (*Pholistoma auritum*), chickweed (*Stellaria media*), sweet pea (*Lathyrus* sp.), and bedstraw (*Ga/ium apairne*). Shrubs that occur in the understory are poison oak, toyon (*Heteromeles arbutifolia*), and redberry.

### **Ornamental Trees**

Ornamental trees have been planted at the Basalt Campground, on the Madeiros site, and the picnic areas of the San Luis Creek site. These trees include red ironbark gum (*Eucalyptus sidiroxylon*), allepo pine (*Pinus halpensis*), false pine (*Casurina* sp.), Chinese pistache (*Pistachia chlnensls*), eucalyptus (*Eucalyptus spp.*), and others. The trees at Madieros are planted in a rectangular array, while those in the other areas conform to picnic tables or campsites.

### **Iodine Bush Scrub**

Iodine bush scrub occurs at Salt Spring, a tributary to Los Banos Reservoir. This area is very distinctive because of the presence of water and the pronounced salt deposits along the banks of the watercourse. The vegetation occurs within the banks of the watercourse at Salt Spring. This vegetation is dominated by iodine bush (*Allenrolfea occidentalis*), quail bush (*Atriplex lentiforms*), alkali heath (*Frankenia salina*), and salt grass (*Distichlis spicata*). Other species present include bassia (*Bassia hyssopifolia*), Fitch's spikeweed (*Hemizonia fitch11*), and various species of saltbushes (*Atriplex* spp.).

### California Sagebrush Scrub

California sagebrush scrub occurs on the shallow soils of hillsides above Los Banos Reservoir and Los banos Creek in dry areas. It is dominated by California sagebrush *(Artemisia californica)* and California buckwheat *(Enogonum fasciculatum)*. The cover of the California sagebrush scrub varies between 25 and 50 percent and the height of the vegetation is generally less than 3 feet. The understory of the California sagebrush scrub mainly consists of grassland growing between the shrubs. The area beneath the shrubs is bare.

### **Mesic Herbaceous**

Mesic herbaceous vegetation occurs in seeps, within watercourses, and at the edges of the reservoirs. It consists of species adapted to seasonally, as well as permanently, wet conditions. This mesic herbaceous vegetation consists of tall vegetation such as cattails and tules to short vegetation such as crabgrass and knotgrass (*Paspalum distichum*). The cattails (*Typha latifolia* and unidentified species) and tules (*Scirpus acutus* spp. occidentalis) grow in extensive patches along the edges of the reservoirs within standing water. These stands can be small patches 10 by 20 feet in size to several hundred feet long and 30 feet wide. Often water parsley (*Oenanthe sarmentosa*) and water smartweed (*Polygonum pundatum*) occur with the cattails and tules.

Mexican rush *Juncus mexicanus*) commonly occurs at the edges of the reservoirs above the reservoir's edge. The iris-leaved rush (*Juncus xiphioides*) also occurs in watercourses, and seeps. The rushes often grow as dense mats of single species stands. Meadow barley (*Hordeum brachyantherum*) and creeping wildrye (*Leymus triticoides*) are adapted to drier conditions than the iris-leaved rush and grow at the edge of seeps and other wet areas.

Cocklebur often grows in dense aggregations at the areas where watercourses flow into stock ponds, and spiny clot-bur *(Xantium spinosum)* occurs in low-density aggregations within drawdown and disturbed areas.

Seeps and watercourses often support water cress (*Rorippa nasturtium-aquaticum*) growing in areas of ponded water. Rabbit's foot grass (*Polypogon monspeliense*) and curly dock (*Rumex crispus*) also grow in wet areas onsite.

### Grassland

The grassland vegetation type occurs extensively throughout the areas surrounding San Luis and Los Banos reservoirs and O'Neill Forebay. This grassland varies in height from a few inches and 25 to 50 percent cover in sites with shallow soils, to 1.5 feet and I00 percent cover in the sites with deeper soils.

Different species dominate the grassland in different areas. The occurrence of a particular species as a dominant may be the result of particular edaphic, climatic, and moisture conditions. Most of the dominants are non-native species but purple needlegrass (*Nasella pulehra*), a native species, occurs throughout the park in various densities. It occasionally grows as a dominant on the slopes of San Luis and Los Banos reservoirs. The other dominants include ripgut brome, hare barley (*Hordeum murinum* ssp. *leporinum*), wild oats (*Avena* sp.), and Italian ryegrass (*Loltum multif!orum*), Various species of tarweeds also occur in various densities ranging from low to high in the grassland. They also occur as dominant or subdominant species of small areas. The species of tarweeds are Fitch's spikeweed, common spikeweed (*Hemizonia pungens*), and San Joaquin tarweed (*Holoearpha obeoniea*). Big tarweed (*Blepharizonia plumosa* ssp, *viscida*) occasionally occurs in the grassland and vinegar weed (*Trichostemma lanceo/atum*) often occurs as a subdominant in the grassland.

Some portions of the grassland are dominated by native species of grass. Often these native areas are correlated with sloping areas and shallow soil. Natives such as pine bluegrass often grow beside the California sagebrush scrub on the slopes of Los Banos Reservoir. Creeping wildrye, a native species, can dominate moist areas.

### Ruderal

Ruderal vegetation consists of non-native species of plants. It is commonly associated with herbaceous species but the non-native salt cedar will also be discussed here. The ruderal vegetation occurs in disturbed areas such as campground and picnic areas, It also occurs at the edge of the reservoirs.

**Herbaceous Species.** The most common ruderal species are broad-leaved pepper-grass, cocklebur, spiny clot-bur, yellow star-thistle *(Centaurea solstitialis)*, Italian thistle *(Carduus pycnoeephalus)*, bristly ox-tongue *(Picris echiodes)*, and short-pod mustard *(Hirsehfeldia incana)*. The broad- leaved pepper-grass, cocklebur, spiny clot-bur, and bristly ox-tongue occur within or at the edge of wet lands, often at the edge of the reservoirs. Yellow star-thistle, Italian thistle, and short-pod mustard occur in drier areas.

**Woody Species.** Salt cedar grows abundantly at Los Banos Reservoir often in dense thickets at the edge of the reservoir and often adjacent to the riparian vegetation. It also occurs as an occasional plant in the black willow riparian woodland along Los Banos Creek Two individual salt cedar plants were observed along the shore of O'Neill Forebay.

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# **California Department of Fish and Wildlife**





Query Criteria:	criteria: Quad span style='color: Red'> IS (Pacheco Pass (3712112)  OR Three Sisters
	(3612183) <pre><pre>Span style='color:Red'&gt; OK San Luis Dam (3/1211)<span style="color:Red"> OK </span>Mariposa Peak (3612182)<span style="color:Red"> OK </span>Howard</pre></pre>
	Ranch (3712121)

				Elev.		Ш Ш	ment	000	Element Occ. Ranks	S	Population Status	n Status		Presence	
Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Range (ft.)	Total EO's	۷		ם د	×	D	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Agelaius tricolor tricolored blackbird	G2G3 S1S2	None Candidate Endangered	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	155 600	951 S:12	4	N	0	-	ນ	e	o	<del>۲</del>	~	0
Ambystoma californiense California tiger salamander	G2G3 S2S3	Threatened Threatened	CDFW_WL-Watch List IUCN_VU-Vulnerable	600 1,360	1156 S:6	0	0	0	0	9	Ω	-	9	0	0
Antrozous pallidus pallid bat	G5 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	360	409 S:1	0	0	0	0	-	<del>,</del>	0	~	0	0
<b>Athene cunicularia</b> burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	170 870	1942 S:10	N	4	8	0	5	ε	7	10	0	0
<b>Buteo regalis</b> ferruginous hawk	G4 S3S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	480 1,140	107 S:18	0	0	0	0	18	16	2	18	0	0
<b>Buteo swainsoni</b> Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	145 1,274	2431 S:11	0	ო	-	0	2	~	10	-	0	0



# **California Department of Fish and Wildlife**

## **California Natural Diversity Database**

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						Ц Ц	Element Occ Ranks		Janke		Ponulation Status	Statue		Precence	
Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Range (ft.)	Total EO's				×	>	Historic > 20 vr	Recent <= 20 vr	Extant	Poss. Extirp.	Extirp.
California macrophylla round-leaved filaree	G3? S3?		Rare Plant Rank - 18.2 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden	250	204 S :2		2		0	N		~	N		0
<b>Campanula exigua</b> chaparral harebell	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden	3,800 3,800	S. 32	0	0	0	0	-	-	0	-	0	0
<b>Caulanthus lemmonii</b> Lemmon's jewelflower	63 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden USFS_S-Sensitive	400	8 .: 8 .:	0	0	0	0	~	~	0	~	0	0
Circus cyaneus northern harrier	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	80 1,400	52 S:3	7	- 0	0	0	0	0	с С	m	0	0
Delphinium californicum ssp. interius Hospital Canyon larkspur	G3T3 S3	None None	Rare Plant Rank - 1B.2	750 750	28 S:1	0	0	0	0	0	-	0	~	0	0
Desmocerus californicus dimorphus valley elderberry longhorn beetle	G3T2 S2	Threatened None		420 420	271 S:1	0	0	0	0	-	-	0	-	0	0
<i>Emys marmorata</i> western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-sensitive	400 1,600	1249 S:16	0	10	0	0	N	N	14	16	0	0
<i>Eremophila alpestris actia</i> California horned lark	G5T4Q S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	165 440	93 S:5	0	2 0	0	0	S	7	S	Q	0	0
Eryngium spinosepalum spiny-sepaled button-celery	G2 S2	None None	Rare Plant Rank - 1B.2	545 545	90 S:1	0	0	0	0	~	0	-	~	0	0
Eumops perotis californicus western mastiff bat	G5T4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern WBWG_H-High Priority_	415 415	294 S:1	0	0	0	0	~	-	0	~	0	0
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# California Department of Fish and Wildlife

## **California Natural Diversity Database**



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				Elev.		Ē	emer	Element Occ.	. Ranks	ks	Populatic	Population Status		Presence	
Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Range (ft.)	Total EO's	۷	B	U	D X	n v	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Falco mexicanus</i> prairie falcon	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	400 3,300	458 S:12	~	0	0	0	0	11	<u>►</u>	12	0	0
<b>Gambelia sila</b> blunt-nosed leopard lizard	G1 S1	Endangered Endangered	CDFW_FP-Fully Protected IUCN_EN-Endangered	300 610	317 S:2	0	0	0	0	0	N	0	2	0	0
Great Valley Cottonwood Riparian Forest Great Valley Cottonwood Riparian Forest	G2 S2.1	None None			56 S:1	0	0	0	0	0	-	0	-	0	0
<i>Haliaeetus leucocephalus</i> bald eagle	G5 S3	Delisted Endangered	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	1,098 1,098	327 S:1	0	0	0	0	0	0	F	٢	0	0
<i>Malacothamnus hallii</i> Hall's bush-mallow	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	280 1,300	36 S:8	0	0	0	0	0	8	2	8	0	0
<b>Masticophis flagellum ruddocki</b> San Joaquin coachwhip	G5T2T3 S2?	None None	CDFW_SSC-Species of Special Concern	425 725	93 S:2	0	0	0	0	0	2	0	2	0	0
<b>Myotis yumanensis</b> Yuma myotis	G5 S4	None None	BLM_S-Sensitive IUCN_LC-Least Concern WBWG_LM-Low- Medium Priority	800 800	263 S:1	0	~	0	0	0	0	Ł	~	0	0
Navarretia gowenii Lime Ridge navarretia	G1 S1	None None	Rare Plant Rank - 1B.1	950 950	S.:1 3	0	0	0	0	0	1	0	4	0	0
Navarretia nigelliformis ssp. radians shining navarretia	G4T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	760 860	72 S:3	0	0	0	0	0	3	0	3	0	0
North Central Coast Drainage Sacramento Sucker/Roach River North Central Coast Drainage Sacramento Sucker/Roach River	GNR SNR	None None		450 450	4 C.S.	-	0	0	0	0	0 1	0	~	0	0
<b>Perognathus inornatus</b> San Joaquin Pocket Mouse	G2G3 S2S3	None None	BLM_S-Sensitive IUCN_LC-Least Concern	520 600	122 S:3	0	0	0	0	0	3	0	n	0	0

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# **California Department of Fish and Wildlife**

# **California Natural Diversity Database**



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				Elev.		Ξ	emei	Element Occ. Ranks	c. Ra	nks	đ	Population Status	n Status	F	Presence	
Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Range (ft.)	Total EO's	۲	۵	U	۵	×	<u>т</u>	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Phrynosoma blainvillii coast horned lizard	G3G4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	1,080 1,080	758 S:1	0	-	0	0	0	0	0	~	-	0	0
<i>Puccinellia simplex</i> California alkali grass	G3 S2	None None	Rare Plant Rank - 1B.2	600 600	71 S:1	0	0	0	0	0	<del>.</del>	-	0	-	0	0
Rana boylii foothill yellow-legged frog	8 B	None Candidate Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened USFS_S-Sensitive	400	1140 S:4	0	0	0	0	<del>~</del>	ю 1	4	0	m	-	0
<i>Rana draytonii</i> California red-legged frog	G2G3 S2S3	Threatened None	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	260 1,800	1408 S:49	~	28	ი	7	0	с С	-	48	49	0	0
<b>Spea hammondii</b> western spadefoot	G3 S3	None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	580 580	454 S:1	0	~	0	0	0	0	0	~	~	0	0
<b>Streptanthus insignis ssp. Iyonii</b> Arburua Ranch jewelflower	G3G4T2 S2	None None	Rare Plant Rank - 1B.2	1,100 1,700	18 S:7	0	-	0	0	0	9	2	0	2	0	0
<b>Sycamore Alluvial Woodland</b> Sycamore Alluvial Woodland	G1 S1.1	None None		320 500	17 S:2	0	0	0	0	0	2	2	0	5	0	0
<i>Taxidea taxus</i> American badger	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	320 1,350	542 S:11	-	9	0	0	0	4	0	11	11	0	0
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	G4T2 S2	Endangered Threatened		150 1,720	982 S:22	2	7	-	0	0	8	17	Ð	22	0	0



### Plant List

27 matches found. Click on scientific name for details

Found in Quads 3712122, 3712121, 3712028, 3712112, 3712111, 3712018, 3612182 3612181 and 3612088;	
	und in Quads 3712122, 3712121, 3712028, 3712112, 3712111, 3712018, 3612182 3612181 and 3612088;

					0		
Scientific Name	Common Name	F amily	Lifeform	Blooming Period CA Rare Plant	CA Rare Plant Rank	State Rank	G lobal Rank
<u>Acanthomintha lanceolata</u>	Santa Clara thorn-mint	Lamiaceae	annual herb	Mar-Jun	4.2	S4	G4
Amsinckia furcata	forked fiddleneck	Boraginaceae	annual herb	Feb-May	4.2	S4	64
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	Mar-Jun	4.2	S3S4	G5?T3T4
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	82	G3T2
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	Mar-Oct	4.2	83	G4T3
Atriplex coronata var. vallicola	Lost Hills crownscale	Chenopodiaceae	annual herb	Apr-Sep	18.2	82	G4T2
Campanula exigua	chaparral harebell	Campanulaceae	annual herb	May-Jun	18.2	<b>S</b> 2	62
<u>Caulanthus lemmonii</u>	Lemmon's jewelflower	Brassicaceae	annual herb	Feb-May	18.2	83	63
<u>Chloropyron molle ssp.</u> <u>hispidum</u>	hispid bird's beak	Orobanchaceae	annual herb (hemiparastic)	Jun-Sep	18.1	S.	G2T1
<u>Clarkia breweri</u>	Brewer's clarkia	Onagraceae	annual herb	Apr-Jun	4.2	S4	G4
<u>Convolvulus simulans</u>	small-flowered morning- glory	Corvolvulaceae	annual herb	Mar-Jul	4.2	S4	64
Cryptantha rattanii	Rattan's cryptantha	Boraginaceae	annual herb	Apr-Jul	4.3	S4	64
Delphinium californicum ssp. interius	Hospital Cany on larkspur	on larkspur Ranunculaceae	perennial herb	Apr-Jun	18.2	S	63T3
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	18.2	82?	62?
<u>Ervnqium spinosepalum</u>	spiny-sepaled button- celery	Apiaceae	annual / perennial herb	Apr-Jun	18.2	82	62
Entillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	4.2	S3	63
Iris Iongipetala	coast iris	Iridaceae	perennial rhizomatous herb	Mar-May	4.2	83	63

Asteraceae annual herb May-Jul 4.3 S4 G4	Malvaceae perennial evergreen shrub Apr-Sep 1B.2 S2 G2Q	Malvaceae perennial evergreen shrub (Apr)May- 1B.2 S2 G2 G2	Polemoniaceae annual herb May-Jun 1B.1 S1 G1	Polemoniaceae annual herb (Mar)Apr-Jul 1B.2 S2 G4T2	Orchidaceae perennial herb Apr-Aug 4.2 S3 G3	Poaceae annual herb Mar-May 1B.2 S2 G3	Asteraceae annual herb Jan-Apr(May) 2B.2 S2 G3	Brassicaceae annual herb Mar-May 1B.2 S2 G3G4T2	Potamogetonaceae perennial rhizomatous herb May-Jul 2B.2 S3 G5T5 (aquatic)
spring lessingia	arcuate bush-mallow N	Hall's bush-mallow	Lime Ridge navarretia F	shining navarretia	Michael's rein orchid	California alkali grass F	chaparral ragwort A		slender-leaved F
<u>Lessingia tenuis</u>	<u>Malacothamnus arcuatus</u>	Malacothamnus hallii	Navarretia gowenii	<u>Navarretia nigelliformis ssp.</u> radians	<u>Piperia michaelii</u>	Puccinellia simplex	Senecio aphanactis	Streptanthus insignis ssp. Iyonii jewelflower	Stuckenia filiformis ssp. alpina

### Suggested Citation

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The Consortium of California Herbaria

CalPhotos

California Natural Diversity Database The California Lichen Society

The Calflora Database Contributors

The Jepson Flora Project

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Questions and Comments

rareplants@cnps.org



### United States Department of the Interior

FISH AND WILDLIFE SERVICE Sacramento Fish And Wildlife Office Federal Building 2800 Cottage Way, Room W-2605 Sacramento, CA 95825-1846 Phone: (916) 414-6600 Fax: (916) 414-6713



In Reply Refer To: Consultation Code: 08ESMF00-2017-SLI-3393 Event Code: 08ESMF00-2017-E-09320 Project Name: San Luis Reservoir Dam Maintenance September 26, 2017

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected\_species/species\_list/species\_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to

utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan

(http://www.fws.gov/windenergy/eagle\_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

Official Species List

### **Official Species List**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office Federal Building 2800 Cottage Way, Room W-2605 Sacramento, CA 95825-1846 (916) 414-6600

### **Project Summary**

Consultation Code:	08ESMF00-2017-SLI-3393
Event Code:	08ESMF00-2017-E-09320
Project Name:	San Luis Reservoir Dam Maintenance
Project Type:	DAM
Project Description:	Dam maintenance for seismic safety

### Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/37.04911407544098N121.10566056028921W



Counties:

Merced, CA

### **Endangered Species Act Species**

There is a total of 13 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

### Mammals

NAME	STATUS
Fresno Kangaroo Rat <i>Dipodomys nitratoides exilis</i> There is <b>final designated</b> critical habitat for this species. Your location is outside the critical habitat.	Endangered
Species profile: https://ecos.fws.gov/ecp/species/5150	
Giant Kangaroo Rat <i>Dipodomys ingens</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/6051</u>	Endangered
San Joaquin Kit Fox <i>Vulpes macrotis mutica</i> No critical habitat has been designated for this species.	Endangered
Species profile: https://ecos.fws.gov/ecp/species/2873	
Birds	
NAME	STATUS
California Condor <i>Gymnogyps californianus</i> Population: U.S.A. only, except where listed as an experimental population There is <b>final designated</b> critical habitat for this species. Your location is outside the critical habitat.	Endangered

Species profile: https://ecos.fws.gov/ecp/species/8193

### Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard Gambelia silus No critical habitat has been designated for this species.	Endangered
Species profile: <u>https://ecos.fws.gov/ecp/species/625</u>	
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species.	Threatened
Species profile: <u>https://ecos.fws.gov/ecp/species/4482</u>	
Amphibians	
NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is <b>final designated</b> critical habitat for this species. Your location overlaps the critical habitat.	Threatened
Species profile: https://ecos.fws.gov/ecp/species/2891	
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is <b>final designated</b> critical habitat for this species. Your location is outside the critical habitat.	Threatened
Species profile: https://ecos.fws.gov/ecp/species/2076	
Fishes	
NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is <b>final designated</b> critical habitat for this species. Your location is outside the critical habitat.	Threatened
Species profile: <u>https://ecos.fws.gov/ecp/species/321</u>	
Steelhead Oncorhynchus (=Salmo) mykiss Population: Northern California DPS There is <b>final designated</b> critical habitat for this species. Your location is outside the critical habitat.	Threatened
Species profile: <u>https://ecos.fws.gov/ecp/species/1007</u>	

### Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is <b>final designated</b> critical habitat for this species. Your location is outside the critical habitat.	Threatened
Species profile: <u>https://ecos.fws.gov/ecp/species/7850</u> Habitat assessment guidelines: <u>https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf</u>	
Crustaceans	
NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is <b>final designated</b> critical habitat for this species. Your location is outside the critical habitat.	Threatened
Species profile: https://ecos.fws.gov/ecp/species/498	
Vernal Pool Tadpole Shrimp <i>Lepidurus packardi</i> There is <b>final designated</b> critical habitat for this species. Your location is outside the critical habitat.	Endangered
Species profile: <u>https://ecos.fws.gov/ecp/species/2246</u>	

### **Critical habitats**

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
California Red-legged Frog Rana draytonii https://ecos.fws.gov/ecp/species/2891#crithab	Final designated