Exhibit I

Verified Waters of U.S. Jurisdictional Determination and Verification Letter

DEPARTMENT OF THE ARMY
Corps of Engineers, Los Angeles District
Regulatory Division, Carlsbad Field Office
6010 Hidden Valley Road, Suite 105
Carlsbad, California 92011

November 23, 2011

REPLY TO
ATTENTION OF
Office of the Chief
Regulatory Division

Kim Erickson
Wildlands
3855 Atherton Road
Rocklin, California 95765

SUBJECT: Preliminary Jurisdictional Determination regarding presence of geographic jurisdiction

Dear Ms. Erickson:

Reference is made to your request (File No. SPL-2011-00694-SAS), dated August 9, 2011, for a preliminary Department of the Army (DA) jurisdictional determination (JD) from the United States (U.S.) Army Corps of Engineers (Corps) for the San Luis Rey Mitigation Bank project site, located in the City of Oceanside, San Diego County, California.

As you may know, the Corps' evaluation process for determining whether or not a DA permit is needed involves two tests. If both tests are met, then a permit is required. The first test determines whether or not the proposed project is located in a water of the U.S. (i.e., it is within the Corps' geographic jurisdiction). The second test determines whether or not the proposed project is a regulated activity under Section 10 of the River and Harbor Act or Section 404 of the Clean Water Act (CWA). As part of the evaluation process, pertaining to the first test only, we have made the jurisdictional determination below.

Based on available information, it appears waters of the U.S. may be present on the San Luis Rey Mitigation Bank project site in the approximate locations noted on the enclosed "Preliminary Jurisdictional Determination Form" and shown in the report entitled *Preliminary Wetland Delineation* for the project dated August 2011, incorporated here by reference. The basis for the preliminary JD can also be found on the enclosed "Preliminary Jurisdictional Determination Form." Please note preliminary JDs are non-binding ". . . written indications that there may be waters of the United States, including wetlands, on a parcel or indications of the approximate location(s) of waters of the United States or wetlands on a parcel. Preliminary JDs are advisory in nature and may not be appealed." (33 CFR 331.2). The permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to

request and obtain an approved JD for this site. If you chose to request and obtain an approved JD, the approved JD may be appealed through the Corps' administrative appeal process set out at 33 CFR Part 331. [See the enclosed Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form.] The option to obtain an approved JD in this instance and at this time has been declined. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a preliminary JD will treat all waters and wetlands that would be affected in any way by the permitted activity on the site as if they are jurisdictional waters of the U.S.

Please be reminded that preliminary JDs may not be appealed through the Corps' administrative appeal process set out at 33 CFR Part 331. Preliminary JDs are fully explained in the Regulatory Guidance Letter 08-02, dated June 26, 2008. Further, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 CFR Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 CFR 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

This determination has been conducted to identify the extent of the Corps' CWA jurisdiction on the San Luis Rey Mitigation Bank project site identified in your request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are U.S. Department of Agriculture (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.

If you have any questions, please contact me at 760-602-4834 or via e-mail at Shanti.A.Santulli@usace.army.mil.

Please be advised that you can now comment on your experience with Regulatory Division by accessing the Corps web-based customer survey form at: http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Shanti Abichandani Santulli
Project Manager, South Coast Branch

Enclosures

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office: Los Angeles District | File/ORM #: 2011-00094-SAS | PJD Date: 11-23-11

State: CA | City/County: Oceanside / San Diego

Nearest Waterbody: San Luis Rey River

Location: TRS, LatLong or UTM: 33.257384, -117.258504

Name/ Address of Person Requesting PJD: Wildlands
Bill Roper
3855 Atherton Road
Rocklin, CA 95765

Identify (Estimate) Amount of Waters in the Review Area:

Non-Wetland Waters: 338 linear ft | width 0.247 acres | Stream Flow:

Wetlands: 6.314 acre(s) | Cowardin Class: Palustrine, emergent

Name of Any Water Bodies on the Site Identified as Section 10 Waters: Tidal: | Non-Tidal:

☒ Office (Desk) Determination
☒ Field Determination: Date of Field Trip: 06-29-11

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☑ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Wildlands
- ☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps
- ☐ Corps navigable waters' study:
- ☑ U.S. Geological Survey Hydrologic Atlas:
  - ☐ USGS NHD data.
  - ☑ USGS 8 and 12 digit HUC maps.
- ☑ U.S. Geological Survey map(s). Cite quad name: Morro Hill 7.5-minute quad
- ☑ USDA Natural Resources Conservation Service Soil Survey. Citation: Soil Survey of San Diego Area
- ☐ National wetlands inventory map(s). Cite name:
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is:
- ☑ Photographs: ☑ Aerial (Name & Date): Google Earth, 2010
  ☑ Other (Name & Date): Wildlands, 2009 and 2010
- ☐ Previous determination(s). File no. and date of response letter:
- ☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

11/23/11
Signature and Date of Regulatory Project Manager (REQUIRED)

Bill Roper KCE 8/8/11
Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Appendix A - Sites

District Office: Los Angeles District | File/ORM #: 2011-00694-SAS | PJD Date: 11-23-11

State: CA | City/County: Oceanside / San Diego | Person Requestinq PJD: Bill Roper

Site Number	Latitude	Longitude	Cowardin Class	Est. Amount of Aquatic Resource in Review Area	Class of Aquatic Resource

Notes:

ID_No	ID	Latitude	Longitude	Cowardin Class	Est. Amount of Aquatic Resource in Review Area	Class of Aquatic Resource
1	FM1	33.25860258490	-117.25893880500	Palustrine, emergent	5.374	Non-Section 10 wetlands
2	RF2	33.25804328150	-117.25537718400	Palustrine, forested	0.934	Non-Section 10 wetlands
3	RF3	33.25886240450	-117.25356771200	Palustrine, forested	0.006	Non-Section 10 wetlands
5	AD5	33.25610767940	-117.25628596900	Riverine	0.013	Non-Section 10 non-wetlands
6	AD6	33.25589384650	-117.26048436700	Riverine	0.046	Non-Section 10 non-wetlands
7	AD7	33.25597171820	-117.25779602700	Riverine	0.018	Non-Section 10 non-wetlands
8	AD8	33.25641801390	-117.25584625400	Riverine	0.003	Non-Section 10 non-wetlands
9	AD9	33.25678485360	-117.26142772200	Riverine	0.063	Non-Section 10 non-wetlands
10	AD10	33.25688577090	-117.25789549700	Riverine	0.020	Non-Section 10 non-wetlands
11	AD11	33.25786180550	-117.25799849700	Riverine	0.038	Non-Section 10 non-wetlands
12	AD12	33.25886077080	-117.25361070900	Riverine	0.010	Non-Section 10 non-wetlands
13	AD13	33.25927215930	-117.25364656200	Riverine	0.036	Non-Section 10 non-wetlands

San Luis Rey Mitigation Bank
Preliminary Wetland Delineation

Delineator: *Roper*
Surveyor: *Roper*
Survey Dates: *June 27 - 30, July 21, 2011*
Survey Equipment: *Trimble Geo XT*
Delineation By: *Wildlands*
3855 Atherton Road
Rocklin, CA 95765
Map Prepared: *August 08, 2011*

Verification Date: *N/A*
Verified By: *N/A*
USACE Reference Number: *N/A*

Aerial Source: *Google Earth, August 24, 2010*

Wetlands of the U.S.

- Freshwater Marsh (FM) ---> 5.374 Acres
- Riparian Forest (RF) ---> 0.940 Acres

Total: 6.314 Acres

Other Waters of the U.S.

- Agricultural Drainage Ditch (AD) ---> 0.247 Acres

Total: 0.247 Acres

Non-Jurisdictional Areas

- Agricultural Field ---> 49.678 Acres
- Coastal Sage Scrub ---> 0.821 Acres
- Developed/Disturbed ---> 10.477 Acres
- Levee ---> 1.466 Acres

Total: 62.442 Acres

Other Features

- Data Point
- Preliminary Study Area

Scale/Orientation

0 75 150 300 Feet (1" = 150')

Data Table

ID #	ID	Type	Acreage
1	FM1	Freshwater Marsh	5.374
2	RF2	Riparian Forest	0.934
3	RF3	Riparian Forest	0.006
5	AD5	Agricultural Drainage Ditch	0.013
6	AD6	Agricultural Drainage Ditch	0.046
7	AD7	Agricultural Drainage Ditch	0.018
8	AD8	Agricultural Drainage Ditch	0.003
9	AD9	Agricultural Drainage Ditch	0.063
10	AD10	Agricultural Drainage Ditch	0.020
11	AD11	Agricultural Drainage Ditch	0.038
12	AD12	Agricultural Drainage Ditch	0.010
13	AD13	Agricultural Drainage Ditch	0.036

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Kim Ericksons Wildlands	File Number: 2011-00694-SAS	Date: 11/23/11
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	(E)

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/cecw/pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:	If you only have questions regarding the appeal process you may also contact: Thomas J. Cavanaugh Administrative Appeal Review Officer, U.S. Army Corps of Engineers South Pacific Division 1455 Market Street, 2052B San Francisco, California 94103-1399 Phone: (415) 503-6574 Fax: (415) 503-6646 Email: thomas.j.cavanaugh@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

WILDLANDS

August 9, 2011

Ms. Therese Bradford
Chief, South Coast Branch
Corps of Engineers, Los Angeles District
Regulatory Division
6010 Hidden Valley Road, Suite 105
Carlsbad, CA 92011

SUBJECT: San Luis Rey Mitigation Bank: Preliminary Wetland Delineation and Request for Preliminary Jurisdictional Determination

Dear Ms. Bradford:

Wildlands is pleased to submit the enclosed Preliminary Wetland Delineation to you for your review.

As you know, Wildlands is currently evaluating the feasibility of this site as a wetlands mitigation bank. We are requesting a Preliminary Jurisdictional Determination.

Please do not hesitate to contact Bill Roper or myself if you have any questions or require additional information. Bill can be reached at broper@wildlandsinc.com (916) 435-3555 (office), or (916) 826-6588 (mobile). I can be reached at kerickson@wildlandsinc.com (916) 435-3555 (office), or (916) 960-9738 (mobile).

Sincerely,

Kim C. Erickson

Kim C. Erickson
Senior Project Manager

Enclosures

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office: Los Angeles District | File/ORM #: | PJD Date:

State: CA | City/County: Oceanside / San Diego

Nearest Waterbody: San Luis Rey River

Location: TRS, LatLong or UTM: 33.257384, -117.258504

Name/ Address of Person Requesting PJD: Wildlands
Bill Roper
3855 Atherton Road
Rocklin, CA 95765

Identify (Estimate) Amount of Waters in the Review Area:

Non-Wetland Waters: 338 linear ft | width 0.247 acres | Stream Flow:

Wetlands: 6.314 acre(s) | Cowardin Class: Palustrine, emergent

Name of Any Water Bodies on the Site Identified as Section 10 Waters: Tidal: | Non-Tidal:

☐ Office (Desk) Determination
☐ Field Determination | Date of Field Trip:

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☑ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Wildlands
- ☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps
- ☐ Corps navigable waters' study:
- ☑ U.S. Geological Survey Hydrologic Atlas:
  - ☐ USGS NHD data.
  - ☑ USGS 8 and 12 digit HUC maps.
- ☑ U.S. Geological Survey map(s). Cite quad name: Morro Hill 7.5-minute quad
- ☑ USDA Natural Resources Conservation Service Soil Survey. Citation: Soil Survey of San Diego Area
- ☐ National wetlands inventory map(s). Cite name:
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is:
- ☑ Photographs: ☑ Aerial (Name & Date): Google Earth, 2010
  ☑ Other (Name & Date): Wildlands, 2009 and 2010
- ☐ Previous determination(s). File no. and date of response letter:
- ☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and Date of Regulatory Project Manager (REQUIRED)

Bill Roper KCE 8/8/11
Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

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Appendix A - Sites

District Office: Los Angeles District | File/ORM #: | PJD Date:

State: CA | City/County: Oceanside / San Diego | Person Requesting PJD: Bill Roper

Site Number	Latitude	Longitude	Cowardin Class	Est. Amount of Aquatic Resource in Review Area	Class of Aquatic Resource

Notes:

ID_No	*ID*	*Latitude*	*Longitude*	*Cowardin Class*	*Est. Amount of Aquatic Resource in Review Area*	*Class of Aquatic Resource*
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5	AD5	33.25610767940	-117.25628596900	Riverine	0.013	Non-Section 10 non-wetlands
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10	AD10	33.25688577090	-117.25789549700	Riverine	0.020	Non-Section 10 non-wetlands
11	AD11	33.25786180550	-117.25799849700	Riverine	0.038	Non-Section 10 non-wetlands
12	AD12	33.25886077080	-117.25361070900	Riverine	0.010	Non-Section 10 non-wetlands
13	AD13	33.25927215930	-117.25364656200	Riverine	0.036	Non-Section 10 non-wetlands

SAN LUIS REY MITIGATION BANK

SAN DIEGO COUNTY, CALIFORNIA

PRELIMINARY WETLAND DELINEATION

Prepared by:

Wildlands
3855 Atherton Road
Rocklin, CA 95765
Contact: Bill Roper
Email: broper@wildlandsinc.com
(916) 435-3555 (office)
(916) 826-6588 (mobile)

August 2011

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Figure 2. Project Area

Figure 3. Soils

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Appendix A. Wetland Delineation Data Sheets

Appendix B. Plant Species Observed within the Study Area (2011)

Appendix C. Representative Photographs

Exhibits

Exhibit A. Preliminary Delineation

Exhibit B. Morro Hill 7.5-minute U.S. Geological Survey Quadrangle

List of Acronyms

Corps	U.S. Army Corps of Engineers
GPS	global positioning system
msl	mean sea level
OHWM	ordinary high water mark
Study Area	the area covered by the Preliminary Wetland Delineation; this is a larger area than the anticipated Bank

INTRODUCTION

This report describes the results of a preliminary delineation of waters of the United States, including wetlands, potentially occurring at the San Luis Rey Mitigation Bank Property in northwestern San Diego County, California, in the City of Oceanside. The preliminary delineation of waters is based on a "Study Area" that is larger than the anticipated Bank property.

The San Luis Rey Mitigation Bank encompasses a total of approximately 64 acres of land located south of North River Road, north of Highway 76/Mission Road, and west of the old Bonsall bridge (on Highway 76) in the City of Oceanside, San Diego County, California (Figure 1; all figures are located at the end of the report). The wetland delineation Study Area encompasses a total of approximately 69 acres.

The northern portion of the property is located in Section 36 of Township 10 South, Range 4 West on the Morro Hill 7.5-minute U.S. Geological Survey quadrangle and the southern portion of the property is location in Section 1, Township 11 South, Range 4 West of the same quadrangle map (Figure 2).

"Waters of the United States" is the encompassing term for areas that qualify for federal regulation under Section 404 of the Clean Water Act. Waters of the United States includes "wetlands" and "other waters of the United States". The boundaries of waters of the United States on the Study Area were mapped using a global positioning system (GPS) with sub-meter accuracy. The completed routine wetland determination data sheets are attached as Appendix A.

Wetlands

For regulatory purposes, wetlands are defined as:

> *Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR 328.3, CFR 230.3).*

The U.S. Army Corps of Engineers (Corps) Wetland Delineation Manual (Environmental Laboratory 1987) and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Environmental Laboratory 2006) provides technical guidelines and methods for the three-parameter approach to determining the location and boundaries of Corps jurisdictional wetlands. In order to be classified as a Corps jurisdictional wetland, an area generally must exhibit the following three parameters:

- **a prevalence of hydrophytic vegetation** (i.e., "water loving" species with "obligate," "facultative wetland," or "facultative" wetland indicator status as defined in Reed [1988]);
- **hydric soils** (i.e., hydric soils listed by Natural Resource Conservation Service [formally Soil Conservation Service] [1991] and unclassified soils that are saturated or flooded during the growing season long enough to develop hydric soil indicators caused by soil morphogenesis); and

- **wetland hydrology** (i.e., permanent or periodic inundation, or soil saturation to the surface for greater than 14 consecutive days during the growing season).

Other Waters of the United States

"Other waters of the United States," as used in this report, refer to unvegetated waterways and other water-bodies with a defined bed and bank, such as drainages, creeks, rivers, and lakes. This approximately translates to the bank-to-bank portion of water bodies, up to the ordinary high water mark (OHWM). "Other waters of the United States" typically lack hydrophytic vegetation and may also lack hydric soils.

METHODS

Prior to conducting the wetland delineation field investigation, a Wildlands senior biologist/wetland ecologist reviewed aerial photographs, the San Diego County soil survey, and the Morro Hill 7.5-minute U.S. Geological Survey quadrangle (Exhibit B) to identify potential wetland and/or drainage areas.

The routine onsite determination method, based on mandatory technical criteria and field indicators of the 1987 Wetlands Delineation Manual (Environmental Laboratory 1987) and Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Environmental Laboratory 2006) was used as a basis for identifying potentially jurisdictional wetlands. The wetland indicator status of plants was determined based on Reed (1988). Non-wetland areas potentially subject to Corps jurisdiction under Section 404 of the Clean Water Act (i.e., other waters of the United States) were evaluated and mapped according to regulatory guidance letters issued by the Corps.

The entire Study Area was visually surveyed to evaluate the extent and types of potential wetlands and other waters present and to determine appropriate locations for sample data points. The completed routine wetland determination data sheets are attached as Appendix A. Waters of the United States were mapped on color copies of color aerial photographs at a scale of 1 inch = 200 feet and displayed using Arcview 3.3/ARCGIS 9.0.

Wetlands

Potential wetlands were initially identified by assessing whether hydrophytic vegetation was prevalent or would be expected to be prevalent under circumstances and normal conditions (as defined in Environmental Laboratory [1987]; [2006]). Sites with a prevalence of hydrophytic vegetation were further evaluated for wetland hydrology and hydric soils. Wetland boundaries were mapped using a GPS with sub-meter accuracy. Wetland boundaries were determined in the field for each wetland. The last point on the gradient where evidence of all three parameters was present determined the upper limits of the wetland boundaries.

Other Waters of the United States

The boundaries of jurisdiction within other waters of the United States were determined based on the presence and location of the OHWM. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Engineering Laboratory 2008) was used to determine the OHWM. Typical indicators of the OHWM include drift lines, scour lines, shelving, changes in soil, destruction of terrestrial vegetation, and presence of litter and debris. Other waters of the United States were mapped to portray their bank-to-bank width at the OHWM.

RESULTS

Wildlands' wetland specialist conducted initial surveys to investigate and map potential jurisdictional areas on June 27 through June 30, 2011, and July 21, 2011.

Study Area Description

The Study Area is located in northwestern San Diego County. The majority of the Study Area consists of agricultural fields. These fields have been under intensive agriculture production for the past 40 years.

The Study Area is located in the Peninsular Range geomorphic province of Southern California, which is a northwest-southeast trending of igneous and metamorphic rocks that includes the Southern California batholith. This geomorphic province encompasses an area that extends 125 miles from the Transverse Ranges and the Los Angeles Basin south to the Mexican Border and beyond for another 775 miles to the tip of Baja, California. In general, the province consists of rugged mountains underlain by Mesozoic igneous and metamorphic rocks to the east, and a dissected coastal plain underlain by Cenozoic sediments to the west. The province varies in width from approximately 30 to 100 miles.

The Study Area is underlain by surficial deposits consisting of artificial fill, Quaternary alluvium/ colluvium, and Cretaceous-age granitic rock (Bonsall Tonalite). The artificial fill thickness is estimated to be 1 to 10 feet. The alluvium/colluvium consists of an unconsolidated sandy, silty, or clay-bearing unit. Underlying the alluvium/colluvium is the Bonsall Tonalite, which consists of mostly massive, coarse-grained, light-gray hornblende-biotite tonalite.

Soils

The Soil Survey of San Diego Area, California (Natural Resource Conservation Service) was accessed via http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm to determine the soils on the Study Area. As shown in Figure 3, there are nine soil series and 12 soil mapping units found in the Study Area; however, the site is predominantly characterized by three soil map units: Tujunga sand, 0 to 5 percent slopes; Bonsall sandy loam, 2 to 9 percent slopes; and Riverwash. Each of the soil series and soil mapping units are described below. Due to the nature of NRCS soil mapping methods, past fill/land manipulation, and

the relatively shallow onsite soil test pits, soil series and mapping units were not verified in the field as part of this wetland delineation.

Bonsall Series

The Bonsall series consists of moderately well drained, shallow to moderately deep sandy loams that have a heavy clay loam subsoil. Slopes are concave and range from 2 to 15 percent. The vegetation is mainly filaree, mustard, wild oats, and annual grasses and forbs. A few scattered oaks grow along the drainages.

In a representative profile, the surface layer is brown, slightly acid sandy loam about 10 inches thick. The subsoil is brown, yellowish-brown, and light yellowish-brown, slightly acid to moderately alkaline clay loam and sandy loam about 50 inches thick. The substratum is light-brown, mildly alkaline sandy clay loam. At a depth of about 89 inches is deeply weathered granitic rock.

Bonsall sandy loam, 2 to 9 percent slopes, eroded (B1C2). This soil is cut by shallow gullies. The rooting depth is 24 to 33 inches. The available water holding capacity is 4 to 5 inches. The erosion hazard is moderate. This soil is used for range and dryfarmed grain and for flowers.

Bonsall sandy loam, 9 to 15 percent slopes, eroded (B1D2). This soil is strongly sloping and is cut by shallow gullies. The rooting depth is 24 to 33 inches. The available water holding capacity is 4 to 5 inches. Runoff is medium, and the erosion hazard moderate. This soil is used for range and dryland farmed barley and for flowers.

Bosanko Series

The Bosanko series consists of well-drained, moderately deep clays that formed in material derived from acid igneous rock. These soils are on uplands and are undulating to hilly. Slopes range from 2 to 30 percent. The vegetation is chiefly annual grasses and scattered shrubs.

In a representative profile the surface layer is gray, slightly acid to moderately alkaline clay 23 inches thick. The next layer is brown, moderately alkaline sandy clay loam that contains numerous soft lime concretions. At a depth of about 30 inches is pale-brown, decomposed acid igneous rock. In some areas these soils have a stony surface layer. Bosanko soils are used for range, citrus, tomatoes, grain and grain hay.

Bosanko clay, 9 to 15 percent slopes (BsD). This soil is strongly sloping and is 20 to 28 inches deep over decomposed rock. The available water holding capacity is 3.5 to 4.5 inches. Runoff is medium, and the erosion hazard moderate. This soil is used for range, small grain, pasture, citrus and tomatoes.

Bosanko clay, 15 to 30 percent slopes (BsE). This soil is moderately steep and is 16 to 28 inches deep over decomposed rock. The available water holding capacity is 2.5 to 4.5 inches. Runoff is medium to rapid, and the erosion hazard moderate to high. This soil is used for range and tomatoes.

Cieneba Series

The Cieneba series consists of excessively drained, very shallow to shallow coarse sandy loams. These soils formed in material weathered in place from granitic rock. They are on rolling to mountainous uplands and have slopes of 5 to 75 percent. The vegetation is chiefly flat-top buckwheat, chamise, California sagebrush, and annual grasses and forbs.

In a representative profile the soil is brown, medium acid coarse sandy loam about 10 inches thick. Below this is weathered granodiorite. Cieneba soils are used mainly for avocados, range, wildlife habitat, recreational areas and watershed.

Cieneba coarse sandy loam, 15 to 30 percent slopes, eroded (C1E2). This is a hilly soil on uplands. Slopes are dominantly 30 percent. Fertility is low. Permeability is rapid. The available water holding capacity is 1 to 2 inches. Runoff is medium to rapid, and the erosion hazard moderate to high. The rooting depth is 10 to 20 inches. Sheet and gully erosion are evident. This soil is used mainly for range, wildlife habitat, recreational areas, and watershed.

Fallbrook Series

The Fallbrook series consists of well-drained, moderately deep to deep sandy loams that formed in material weathered in place from granodiorite. These soils are on uplands and have slopes of 2 to 30 percent. The vegetation is chiefly annual grasses, oak or broadleaf chaparral, and intermittent areas of chamise.

In a representative profile, the surface layer is brown, slightly acid sandy loam about 6 inches thick. The subsoil is reddish-brown and light reddish-brown, slightly acid and neutral sandy clay loam and loam about 41 inches thick. Below this is decomposed granodiorite.

Fallbrook sandy loam, 9 to 15 percent slopes, eroded (FaD2). This soil is strongly sloping and is 27 to 57 inches deep over rock. Sheet and gully erosion have been moderate. The available water holding capacity is 4.5 to 7.5 inches. Runoff is medium, and the erosion hazard moderate. This soil is used mainly for avocados, citrus, tomatoes, flowers, dryfarmed grain, and range.

Huerhuero Series

The Huerhuero series consists of moderately well drained loams that have a clay subsoil. These soils developed in sandy marine sediments. They have slopes of 2 to 30 percent. The vegetation in uncultivated areas is mainly tarweed, wild oats, star-thistle, red brome, Russian-thistle, and annual grasses and forbs.

In a representative profile the surface layer is brown and pale-brown, strongly acid and medium acid loam about 12 inches thick. The upper part of the subsoil is brown, moderately alkaline clay. It extends to a depth of about 41 inches. Below this, and extending to a depth of more than 60 inches, is brown, mildly alkaline clay loam and sandy loam. Huerhuero soils are used mainly for range, truck crops, tomatoes, and flowers.

Huerhuero loam, 9 to 15 percent slopes, eroded (HrD2). This soil is strongly sloping and, because of moderate sheet erosion, has an effective rooting depth of 20 to 40 inches. The available water holding capacity is 3.5 to 5 inches. Runoff is medium, and the erosion hazard moderate. This soil is used for tomatoes, flowers, range, and housing developments.

Placentia Series

The Placentia series consists of moderately well drained sandy loams that have a sandy clay subsoil. These soils formed in granitic alluvium. They are on old alluvial fans and have slopes of 0 to 15 percent. The vegetation consists of a few scattered oaks, soft chess, wild oats, filaree, chamise and vinegarweed.

In a representative profile the surface layer is brown, medium acid and slightly acid sandy loam about 13 inches thick. The subsoil is brown, moderately alkaline sandy clay and sandy clay loam about 40 inches thick. This layer is calcareous in the lowermost part. It is underlain by yellowish-brown, moderately alkaline sandy clay loam. Placentia soils are used mainly for dryfarmed crops, range, tomatoes, and flowers.

Placentia sandy loam, 5 to 9 percent slopes, eroded (PeC2). This soil is moderately sloping and has an effective rooting depth of 9 to 17 inches. Runoff is slow to medium, and the erosion hazard slight to moderate. In other features, this soil is similar to Placentia sandy loam, 2 to 9 percent. This Placentia soil is used mainly for tomatoes, flowers, dryfarmed crops, and range.

Placentia sandy loam, 9 to 15 percent slopes, eroded (PeD2). This soil is strongly sloping and has an effective rooting depth of 9 to 15 inches. Runoff is medium, and the erosion hazard moderate. This soil is used for tomatoes, flowers, dryfarmed crops and range.

Riverwash

Riverwash (Rm) occurs in intermittent stream channels. The material is typically sandy, gravelly, or cobbly. It is excessively drained and rapidly permeable. Many areas are barren. Scattered sycamores and coast live oaks grow along the banks. Sparse shrubs and forbs occur in patches.

Steep Gullied Land

Steep gullied land (StG) consists of strongly sloping to steep areas that are actively eroding into old alluvium or decomposed rock. It occurs as large individual gullies or as a network of many gullies in areas where the vegetative cover is sparse or has been severely depleted by grazing or fires. The vegetation is a sparse cover of shrubs and annual grasses and forbs. Runoff is very rapid, and the erosion hazard very high.

Tujunga Series

The Tujunga series consists of very deep, excessively drained sands derived from granitic alluvium. These soils are on alluvial fans and flood plains and have slopes of 0 to 5 percent. The vegetation in uncultivated areas is chiefly annual grasses and forbs and a few scattered oaks.

In a representative profile the surface layer is brown, neutral sand about 14 inches thick. The next layers are pale-brown, neutral sand and coarse sand. This material extends to a depth of more than 60 inches. Tujunga soils are used mainly for range and golf courses. A few small areas are used for avocados, flowers, and truck crops.

Tujunga sand, 0 to 5 percent slopes (TuB). This soil is on alluvial fans and floodplains. Slopes are dominantly 2 percent. Fertility is low. Permeability is very rapid. The available water holding capacity is 3 to 4 inches. Runoff is very slow to slow, and the erosion hazard is slight. Roots easily penetrate to a depth of 60 inches. Short periods of flooding are probable. This soil is used mainly for range and golf courses.

Non-Wetlands (Uplands)

Non-wetland, or upland, areas encompass the majority of the Study Area. The vegetation, hydrology, and soils of the uplands are characteristic of San Diego County agricultural areas and are described below.

Agricultural Field

The Study Area has been in continuous agricultural production for at least the last 40 years. These fields are primarily used for tomato production. Occasional rotational/cover crops such as wheat are grown or fields are rested to maintain long term productivity. These fields were observed in tomato production during the 2010 season and being rested during the 2011 season (Appendix A [DP 4, 8, 10, 11, 13, 16]).

Vegetation

Agricultural fields within the Study Area were not planted in 2011 and are mostly unvegetated. The only vegetation observed within the fields were scattered tomato (*Lycopersicon esculentum*) (UPL) and wheat (*Triticum aestivum*) (UPL).

Hydrology

No primary or secondary indicators of wetland hydrology were observed within the agricultural fields. Data from shallow groundwater monitoring wells within these fields indicated that groundwater is typically remains several feet below the surface.

Soils

The agricultural field areas exhibited no indicators of hydric soils.

Levee

Levees are found along the north and south banks of the San Luis Rey River and extend the length of the Study Area. These levees are assumed to have been constructed as part of the historic agricultural management activities to limit any natural movement of the river channel and flooding of the adjacent agricultural fields. These levees are relatively steep and are armored with large granite rock. This rock ranges in size from 1 foot to 6 feet in diameter (Appendix A [DP 2, 3, 6]).

Vegetation

Levees within the Study Area are primarily dominated by giant reed (*Arundo donax*) (FACW), common ragweed (*Ambrosia artemisiifolia*) (FACU), and red brome (*Bromus madritensis ssp. rubens*) (UPL). Other species on the levees include white sweetclover (*Melilotus alba*) (FACU), spurge (*Chamaesyce sp*) (UPL), Bermuda grass (*Cynodon dactylon*) (FAC), and tomato.

Hydrology

No primary or secondary indicators of wetland hydrology were observed on levees. The construction of steep levee slopes and the placement of large rock armor have resulted in an abrupt boundary between freshwater marsh/riparian forest and non-wetland levee.

Soils

The levees exhibited no indicators of hydric soils.

Developed/Disturbed

Developed/disturbed areas are primarily comprised of areas maintained for farm equipment storage, staging of agricultural materials/rock, and roads that are maintained for year round use and not part of annual field maintenance activities. (Appendix A [DP 15]).

Vegetation

Developed/disturbed areas are mostly unvegetated due to ongoing use and maintenance.

Hydrology

No primary or secondary indicators of wetland hydrology were observed within developed/disturbed areas

Soils

Developed/disturbed areas exhibited no indicators of hydric soils.

Coastal Sage Scrub

A small coastal sage scrub area is located in the southwest corner of the Study Area. The coastal sage scrub is positioned on the face of a nearly sheer granite cutbank. Corps data forms were not completed for this feature.

Vegetation

The coastal sage scrub area is primarily vegetated with California sage (*Artemisia californica*) (UPL) and California buckwheat (*Eriogonum fasciculatum*) (UPL).

Hydrology

No primary or secondary indicators of wetland hydrology were observed within the coastal sage scrub area.

Soils

The coastal sage scrub area is primarily granite bedrock.

Areas Meeting the Definition of "Wetlands"

Two types of wetland features (freshwater marsh and riparian forest) comprise 6.314 acres of the Study Area. These two wetland features are described below.

Freshwater Marsh

Freshwater marsh comprises 5.374 acres of the Study Area. Freshwater marsh is found entirely within the channelized reach of the San Luis Rey River that transects the Study Area (Exhibit A) (Appendix A [DP 1, 5]).

Vegetation

The freshwater marsh habitat is dominated by three-square bulrush (*Scirpus americanus*) (OBL) and broadleaf cattail (*Typha latifolia*) (OBL) with isolated areas of surface water expression. The edges of the emergent marsh (abutting the levees) are lined with giant reed.

Hydrology

The freshwater marsh areas exhibited primary indicators of wetland hydrology (e.g., surface water, saturation, high water table, and hydrogen sulfide odor).

Soil

The freshwater marsh areas exhibited indicators of hydric soils (e.g., hydrogen sulfide odor).

Riparian Forest

Riparian forest comprises 0.94 acre of the Study Area. Riparian forest is located outside the proposed bank boundary (some canopy overhang) but has been included in the Study Area due to the extremely close proximity to the eastern and southeastern proposed bank boundary. This feature is similar in species composition to other riparian wetlands such as riparian scrub and riparian woodland. It is being considered riparian forest because the majority of canopy cover is comprised of trees (dbh > 3") and absolute canopy cover is greater than 50% (Exhibit A) (Appendix A [DP 7]).

Vegetation

Riparian forest is dominated by arroyo willow (*Salix lasiolepis*) (FACW) and Fremont cottonwood (*Populus fremontii*) (FACW). Other plant species within the riparian forest include black willow (*Salix gooddingii*) (OBL), sandbar willow (*Salix exigua*) (FACW) and mulefat (*Baccharis salicifolia*) (FACW). There is very little midstory and understory vegetation with the riparian forest.

Hydrology

Riparian forest exhibited primary and secondary indicators of wetland hydrology (e.g. high water table, saturation, hydrogen sulfide odor, and water marks).

Soil

Riparian forest exhibited primary indicators of hydric soils (e.g. hydrogen sulfide odor).

Areas Meeting the Definition of "Other Waters" of the United States

"Other Waters" consists of agricultural drainage ditches comprising a total of 0.247 acre of the Study Area. This Other Waters are described below.

Agricultural Drainage Ditch

Agricultural drainage ditches comprise 0.247 acres of the Study Area. Agricultural ditches are found within and along the edges of agricultural fields throughout the Study Area. These ditches convey irrigation, and precipitation runoff to the San Luis Rey River from areas within and outside the Study Area. These ditches are regularly maintained in conjunction with ongoing agricultural production and field maintenance (Exhibit A) (Appendix A [DP 9, 12, 14]).

Vegetation

The agricultural drainage ditches are mostly unvegetated.

Hydrology

Agricultural drainage ditches had some evidence of scour (defined bed and bank) but lack primary and secondary indicators of wetland hydrology. Surface flow within these ditches is likely infrequent and relatively short duration.

Soil

Agricultural drainage ditches exhibited no indicators of hydric soils.

Isolation from "Other Waters of the United States"

The wetland and "other waters" within the Study Area are all connected to the floodway of the San Luis Rey River. The San Luis Rey River is part of the San Luis Rey Watershed, the largest watershed in San Diego County. It originates in the Cleveland National Forest near Palomar Mountain and discharges directly into the Pacific Ocean in Oceanside, California.

Interstate or Foreign Commerce

There is no apparent connection between the wetland features (i.e., freshwater marsh complex and mixed riparian scrub) within the Study Area and foreign or interstate commerce, other than potential use by migratory waterfowl.

CONCLUSIONS

The freshwater marsh complex (5.374 acres) and riparian forest (0.94 acres) located within the Study Area meet the mandatory technical criteria and field indicators for wetlands outlined in the 1987 Wetlands Delineation Manual (Environmental Laboratory 1987) and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Environmental Laboratory 2006). Based upon these areas meeting the mandatory technical criteria and field indicators for wetlands outlined in the 1987 Wetlands Delineation Manual and 2006 Supplement, these areas may be considered jurisdictional wetlands by the Corps. The agricultural drainage ditches within the Study Area fail to meet the mandatory technical criteria and field indicators for wetlands. These features convey runoff directly into the San Luis Rey River and may be considered "Other Waters" of the US. However, the Corps determines the jurisdictional status of wetlands on a case-by-case basis and may or may not take jurisdiction on some or all of these wetland features.

REFERENCES

Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. (Technical Report YL-87-1.) U.S. Army Corps of Engineers, Waterways Experiment Station. Vicksburg, MS.

Environmental Laboratory. 2006. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. (ERDC/EL TR-06-16) U.S. Army Corps of Engineers, U.S. Army Engineer Research and Development Center. Vicksburg, MS.

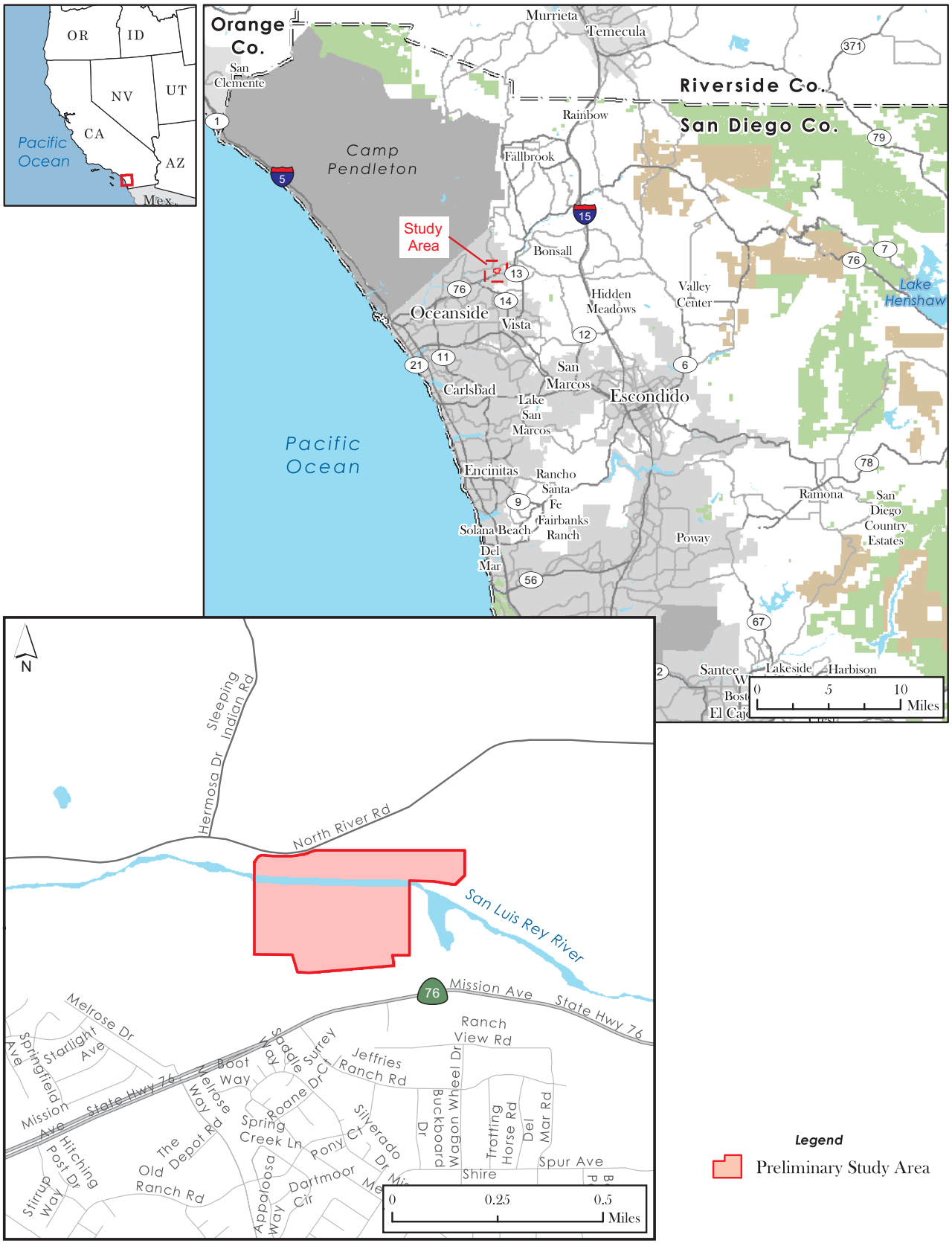
Engineering Laboratory. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (ERDC/CRREL TR-08-12) U.S. Army Corps of Engineers, U.S. Army Engineer Research and Development Center. Hanover, NH.

Hickman, J.C., ed. 1993. The Jepson Manual: higher plants of California. University of California Press. Berkeley, CA. 1,400 pp.

Reed, P. B., Jr. 1988. National List of Plant Species that Occur in Wetlands: California (Region 0). (Biological Report 88[26.10]). U.S. Fish and Wildlife Service. Fort Collins, Colorado.

Soil Conservation Service and Forest Service. 1973. Soil Survey San Diego Area, California. U.S. Department of Agriculture.

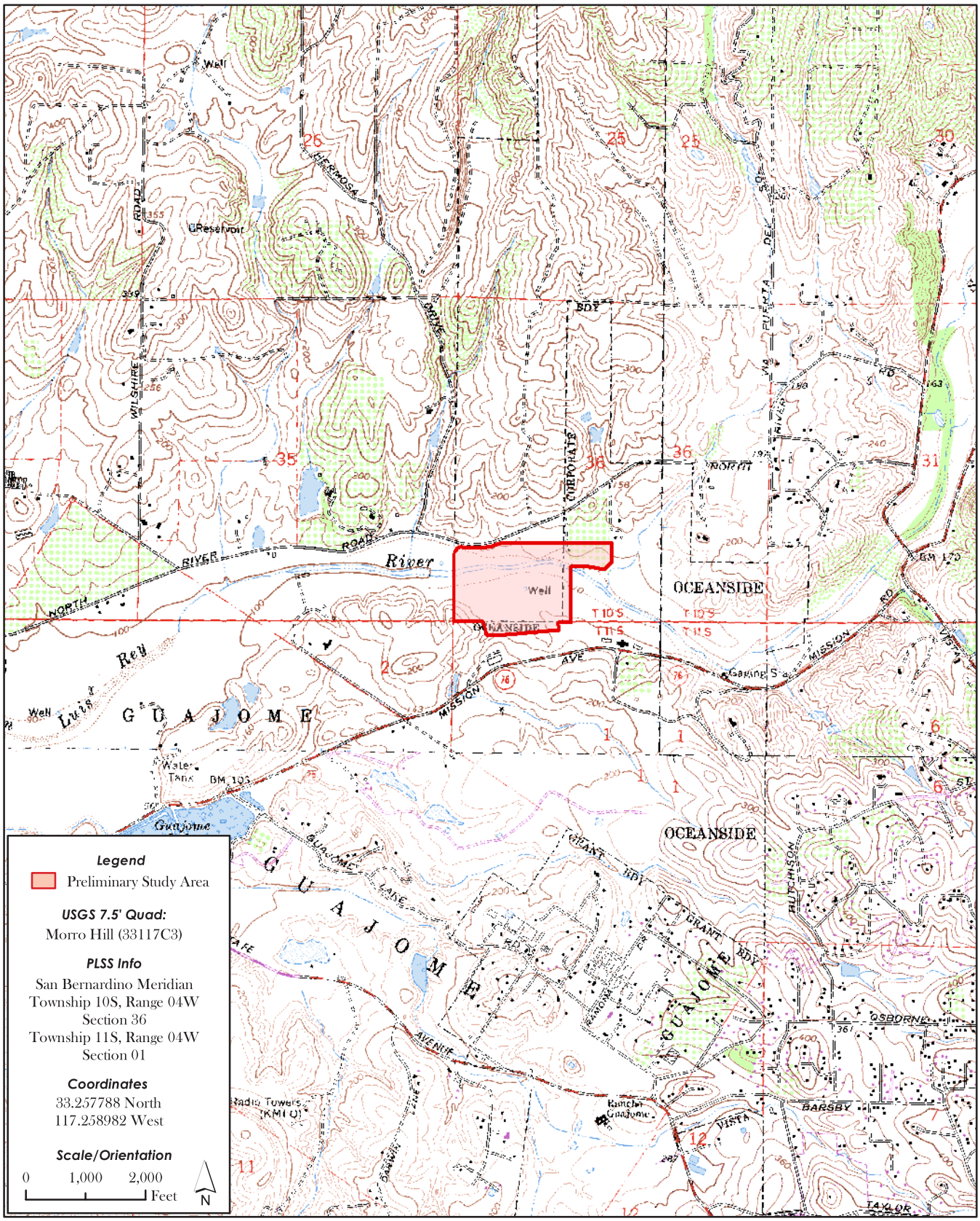
Figures



WILDLANDS

San Luis Rey Mitigation Bank
Preliminary Wetland Delineation

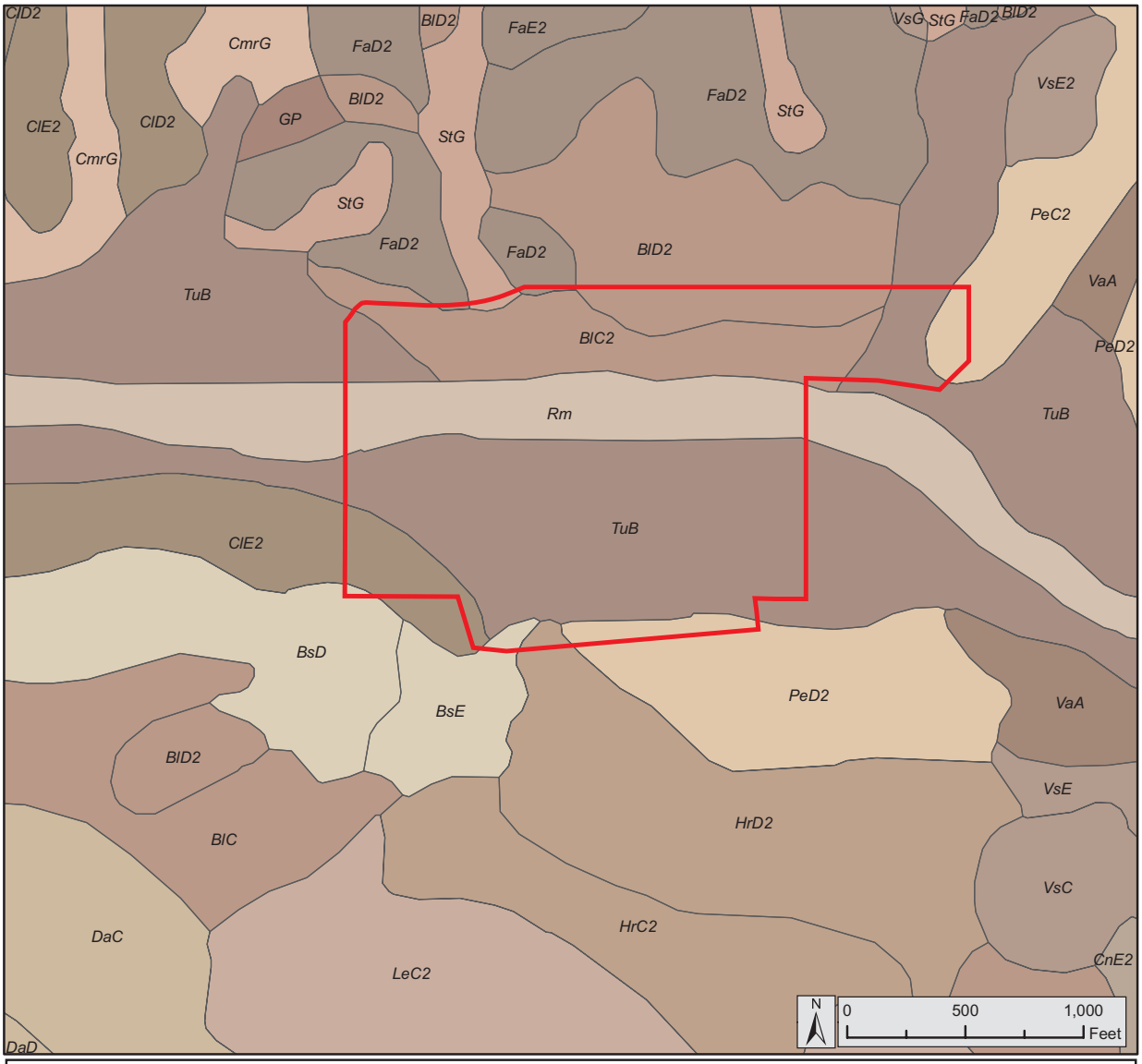
Figure 1
General Vicinity Map



WILDLANDS

San Luis Rey Mitigation Bank
Preliminary Wetland Delineation

Figure 2
Project Area



Legend

Preliminary Study Area

Soils within Property

- BlC2 - Bonsall sandy loam, 2 to 9 percent slopes, eroded
  BlD2 - Bonsall sandy loam, 9 to 15 percent slopes, eroded
- BsD - Bosanko clay, 9 to 15 percent slopes
  BsE - Bosanko clay, 15 to 30 percent slopes
- ClE2 - Cieneba coarse sandy loam, 15 to 30 percent slopes, eroded
- FaD2 - Fallbrook sandy loam, 9 to 15 percent slopes, eroded
- HrD2 - Huerhuero loam, 9 to 15 percent slopes, eroded
- PeC2 - Placentia sandy loam, 5 to 9 percent slopes, eroded
  PeD2 - Placentia sandy loam, 9 to 15 percent slopes, eroded
- Rm - Riverwash
- StG - Steep gullied land
- TuB - Tujunga sand, 0 to 5 percent slopes

Other Soils

- BlC - Bonsall sandy loam, 2 to 9 percent slopes
- ClD2 - Cieneba coarse sandy loam, 5 to 15 percent slopes, eroded
- CmrG - Cieneba very rocky coarse sandy loam, 30 to 75 percent slopes
- CnE2 - Cieneba-Fallbrook rocky sandy loams, 9 to 30 percent slopes, eroded
- DaC - Diablo clay, 2 to 9 percent slopes
  DaD - Diablo clay, 9 to 15 percent slopes
- FaE2 - Fallbrook sandy loam, 15 to 30 percent slopes, eroded
- GP - Gravel pits
- HrC2 - Huerhuero loam, 5 to 9 percent slopes, eroded
- LeC2 - Las Flores loamy fine sand, 5 to 9 percent slopes, eroded
- VaA - Visalia sandy loam, 0 to 2 percent slopes
- VsC - Vista coarse sandy loam, 5 to 9 percent slopes
  VsE - Vista coarse sandy loam, 15 to 30 percent slopes
  VsG - Vista coarse sandy loam, 30 to 65 percent slopes
  VsE2 - Vista coarse sandy loam, 15 to 30 percent slopes, eroded

Appendices and Exhibits

Appendix A

Wetland Delineation Data Sheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Freshwater Marsh

Project/Site: **San Luis Rey Mitigation Bank** City/County: **Oceanside/San Diego** Sampling Date: **6-30-11**

Applicant/Owner: **Wildlands** State: **CA** Sampling Point: **1**

Investigator(s): **Roper** Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): **Concave** Slope (%): **--**

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: **Bonsall Sandy Loam, 2-9 percent slopes, eroded** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. *Scirpus americana*	70	Y	OBL
2. *Typha latifolia*	15	N	OBL
3. *Arundo donax*	10	N	FACW
4.			
5.			
6.			
7.			
8.			
Total Cover:	95		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

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: **100** (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = **0**
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: **0** (A)	**0** (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ✓ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

Data point was inundated/saturated, dominated by OBL plant species. Wetland boundary is abrupt (transition against a steep levee slope). Soils are assumed to be hydric.

HYDROLOGY

Wetland Hydrology 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**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No _____ Depth (inches): **0-1**

Water Table Present? Yes _____ No _____ Depth (inches): **---**

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): **surface**

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Levee Slope

Project/Site: San Luis Rey Mitigation Bank City/County: Oceanside/San Diego Sampling Date: 6-30-11

Applicant/Owner: Wildlands State: CA Sampling Point: 2

Investigator(s): Roper Section, Township, Range: _____

Landform (hillslope, terrace, etc.): steep slope Local relief (concave, convex, none): _____ Slope (%): 60-100+

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Bonsall Sandy Loam, 2-9 percent slopes, eroded NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. *Arundo donax*	85	Y	FACW
2. *Chamaesyce sp.*	2	N	UPL
3. *Bromus madritensis*	3	N	NI
4.			
5.			
6.			
7.			
8.			
Total Cover:	90		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

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: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = 0
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

While rated as FACW (Reed 1988), Arundo donax is more prevalent on this property in areas outside of wetland boundary (averaging 3-4' vertically above the OHWM) than within the wetland boundary. It is the dominate plant on steep levee slopes within the study area, rooted within the large rock armor. This species is known to have an extensive root system that likely extends into the freshwater marsh. Associated herbaceous species are primarily FACU-UPL.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	**7.5yr 4/3**		**--**					**Sandy loam/loamy sand**

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Substrate in this data point is primarily large rock armor on a steep, inside levee slope. This area is at an elevation well above indicators of wetland hydrology. No indicators of hydric soils or hydric soil forming processes were observed.

HYDROLOGY

Wetland Hydrology 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**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

This data point is located at an elevation (3+ feet) well above indicators of wetland hydrology. The slope between DP1 and DP2 is extremely steep, making the wetland boundary/transitional zone fairly abrupt.

WETLAND DETERMINATION DATA FORM – Arid West Region

Levee Top

Project/Site: San Luis Rey Mitigation Bank City/County: Oceanside/San Diego Sampling Date: 6-30-11

Applicant/Owner: Wildlands State: CA Sampling Point: 3

Investigator(s): Roper Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Convex Slope (%): --

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Bonsall Sandy Loam, 2-9 percent slopes, eroded NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. *Ambrosia artemisiifolia*	10	Y	FACU
2. *Chamaesyce sp.*	3	N	UPL
3. *Bromus madritensis*	7	Y	NI
4. *Conyza sp.*	5	N	FAC
5.			
6.			
7.			
8.			
Total Cover:	25		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = 0
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10yr 3/4		--				Sandy loam	Compacted

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology 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**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

This data point is located on the top of the levee at an elevation (8-10 feet) above indicators of wetland hydrology (DP1) and 3 feet above the ag field to the north (see DP4).

WETLAND DETERMINATION DATA FORM – Arid West Region

AG Field

Project/Site: San Luis Rey Mitigation Bank City/County: Oceanside/San Diego Sampling Date: 6-30-11

Applicant/Owner: Wildlands State: CA Sampling Point: 4

Investigator(s): Roper Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): +/- flat

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Bonsall Sandy Loam, 2-9 percent slopes, eroded NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	0
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Field is out of production for this season. Mostly unvegetated with sparse/scattered volunteer tomato and wheat. This field was planted in tomato during in 2010.

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	**10yr 3/3**		**--**					**Loamy Sand**

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology 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**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Arid West Region

Freshwater Marsh

Project/Site: **San Luis Rey Mitigation Bank** City/County: **Oceanside/San Diego** Sampling Date: **6-30-11**

Applicant/Owner: **Wildlands** State: **CA** Sampling Point: **5**

Investigator(s): **Roper** Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): **Concave** Slope (%): **--**

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: **Riverwash** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. *Typha latifolia*	70	Y	OBL
2. *Arundo donax*	10	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	80		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

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: **100** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Arundo donax is extending in the freshwater marsh but is primarily rooting above the OHWM on the levee slope.

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 3/2		--					sand
6-10	10yr 4/3							coarse sand
10-13	10yr 3/1							silty loam/muck mix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ✓ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

HYDROLOGY

Wetland Hydrology 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**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ✓ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No _____ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 8

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

This data point is located adjacent to the levee slope wetland boundary is abrupt.

WETLAND DETERMINATION DATA FORM – Arid West Region

Levee

Project/Site: San Luis Rey Mitigation Bank City/County: Oceanside/San Diego Sampling Date: 6-30-11

Applicant/Owner: Wildlands State: CA Sampling Point: 6

Investigator(s): Roper Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Convex Slope (%): --

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Bonsall Sandy Loam, 2-9 percent slopes, eroded NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. *Ambrosia artemisiifolia*	20	Y	FACU
2. *Arundo donax*	30	Y	FACW
3. *Cynodon dactylon*	5	N	FAC
4. *Melilotus alba*	2	N	FACU
5. *Lycopersicon esculentum (tomato)*	2	N	UPL
6. *Triticum aestivum (wheat)*	2	N	UPL
7.			
8.			
Total Cover:	61		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 = 0
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10yr 4/3		--					Loamy sand (primarily rock armor)

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology 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**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

This data point is located 2-3' above the OHWM. The wetland/upland transition is abrupt due to the steep, rocked levee slope. The area between DP5 and DP6 is a monoculture of Arundo donax.

WETLAND DETERMINATION DATA FORM – Arid West Region

Riparian Forest

Project/Site: **San Luis Rey Mitigation Bank** City/County: **Oceanside/San Diego** Sampling Date: **6-30-11**

Applicant/Owner: **Wildlands** State: **CA** Sampling Point: **7**

Investigator(s): **Roper** Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): **Concave** Slope (%): **--**

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: **Tujunga Sand, 0-5 percent slopes** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. ***Salix lasiolepis***	50	Y	FACW
2. ***Populus fremontii***	10	N	FACW
3.			
4.			
Total Cover:	60		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1.			OB
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

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: **100** (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = **0**
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: **0** (A)	**0** (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

This data point is located along the western edge of a wetland mitigation area located immediately to the east of the property. Trees in the vicinity of this data point were in excess of 3" DBH. Midstory and understory vegetation is minimal. All trees were rooted within the wetland boundary. The slope/field edge immediately to the west is shaded by tree canopy but mostly unvegetated.

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10yr 3/1		--					very fine sandy loam (high organi
3-21	10yr 4/2							sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

HYDROLOGY

Wetland Hydrology 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**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ✓ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No _____ Depth (inches): 20

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 15

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The data point exhibited multiple primary and secondary indicators of wetland hydrology. The wetland boundary is abrupt due to the relatively steep slope to the west (toward ag field edge, DP8).

WETLAND DETERMINATION DATA FORM – Arid West Region

AG Field (edge)

Project/Site: San Luis Rey Mitigation Bank City/County: Oceanside/San Diego Sampling Date: 6-30-11

Applicant/Owner: Wildlands State: CA Sampling Point: 8

Investigator(s): Roper Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): 60-100

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Tujunga Sand, 0-5 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	0
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Mostly unvegetated field edge/slope above the riparian forest. Over hanging canopy of Arroyo willow and Cottonwood (not rooted in data point). Very sparse (< 3% cover) Brassica sp., Melilotus, and Ambrosia artemisiifolia.

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	**10yr 4/3**		**--**					**Loamy Sand (mostly large rock)**

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology 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**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

This data point is located on a steep side slope on the eastern edge of the ag field, 3-4 feet above DP7.

WETLAND DETERMINATION DATA FORM – Arid West Region

AG Drainage Ditch

Project/Site: **San Luis Rey Mitigation Bank** City/County: **Oceanside/San Diego** Sampling Date: **7-21-11**

Applicant/Owner: **Wildlands** State: **CA** Sampling Point: **9**

Investigator(s): **Roper** Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): **Concave** Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: **Tujunga Sand, 0-5 percent slopes** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

This feature does not meet the mandatory technical criteria for wetlands. However, this ditch conveys runoff to the floodplain of San Luis Rey River and may and be considered "other waters" of the US.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	0
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

This ditch is mostly unvegetated (<2% cover).

SOIL

Sampling Point: 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	**10yr 4/3**		**--**					**Loamy Sand**

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) (**LRR C**)
___ 1 cm Muck (A9) (**LRR D**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology 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**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Plowed Soils (C6)
___ 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)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

This ditch has evidence of water convaence (slight bed-bank scour). This data point is located within a regularly maintained AG drainage ditch that conveys irrigation runoff and some roadside drainage (outside study area) to the San Luis Rey River. This feature does not meet the mandatory wetland criteria but may be considered "Other Waters" because of the connection to the San Luis Rey floodplain.

WETLAND DETERMINATION DATA FORM – Arid West Region

AG Field

Project/Site: San Luis Rey Mitigation Bank City/County: Oceanside/San Diego Sampling Date: 7-21-11

Applicant/Owner: Wildlands State: CA Sampling Point: 10

Investigator(s): Roper Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): +/- flat

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Tujunga Sand, 0-5 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	0
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Field is out of production for this season. Mostly unvegetated with sparse/scattered volunteer tomato plants. This field was planted in tomato during in 2010.

SOIL

Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10yr 4/3		--					Loamy Sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology 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**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Arid West Region

AG Field

Project/Site: San Luis Rey Mitigation Bank City/County: Oceanside/San Diego Sampling Date: 7-21-11

Applicant/Owner: Wildlands State: CA Sampling Point: 11

Investigator(s): Roper Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): +/- flat

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Tujunga Sand, 0-5 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	0
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Field is out of production for this season. Mostly unvegetated with sparse/scattered volunteer tomato plants. This field was planted in tomato during in 2010.

SOIL

Sampling Point: 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	**10yr 4/3**		**--**					**Loamy Sand**

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology 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**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Arid West Region

AG Drainage Ditch

Project/Site: **San Luis Rey Mitigation Bank** City/County: **Oceanside/San Diego** Sampling Date: **7-21-11**

Applicant/Owner: **Wildlands** State: **CA** Sampling Point: **12**

Investigator(s): **Roper** Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): **Concave** Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: **Tujunga Sand, 0-5 percent slopes** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

This feature does not meet the mandatory technical criteria for wetlands. However, this ditch conveys field runoff to the San Luis Rey River and may and be considered "other waters" of the US.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = **0**
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: **0** (A)	**0** (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

This ditch is mostly unvegetated.

SOIL

Sampling Point: 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10yr 4/3		--					Sand/Loamy Sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology 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**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

This ditch has evidence of water conveyance (slight bed-bank scour). This data point is located within a regularly maintained AG drainage ditch that conveys AG field runoff the San Luis Rey River. This feature does not meet the mandatory wetland criteria but may be considered "Other Waters" because of the connection to the San Luis Rey River.

WETLAND DETERMINATION DATA FORM – Arid West Region

AG Field

Project/Site: San Luis Rey Mitigation Bank City/County: Oceanside/San Diego Sampling Date: 7-21-11

Applicant/Owner: Wildlands State: CA Sampling Point: 13

Investigator(s): Roper Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): +/- flat

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Tujunga Sand, 0-5 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	0
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Field is out of production for this season. Mostly unvegetated with sparse/scattered volunteer tomato and wheat plants. This field was planted in tomato during in 2010.

SOIL

Sampling Point: 13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	**10yr 4/3**		**--**					**Loamy Sand**

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology 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**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Arid West Region

AG Drainage Ditch

Project/Site: San Luis Rey Mitigation Bank City/County: Oceanside/San Diego Sampling Date: 7-21-11

Applicant/Owner: Wildlands State: CA Sampling Point: 14

Investigator(s): Roper Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Cieneba Coarse Sandy Loam 15-30 percent slopes, eroded NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

This feature does not meet the mandatory technical criteria for wetlands. However, this ditch conveys runoff to the floodplain of San Luis Rey River and may and be considered "other waters" of the US.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 = 0
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

This ditch is mostly unvegetated.

SOIL

Sampling Point: 14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
			--					

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Primarily bedrock with some loose cobble and sand deposits

HYDROLOGY

Wetland Hydrology 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**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

This data point is located within a regularly maintained AG drainage ditch that conveys Field runoff and runoff from an ephemeral drainage outside the study area. This feature does not meet the mandatory wetland criteria but may be considered "Other Waters" because of the connection to the San Luis Rey River.

WETLAND DETERMINATION DATA FORM – Arid West Region

Developed/Disturbed

Project/Site: **San Luis Rey Mitigation Bank** City/County: **Oceanside/San Diego** Sampling Date: **7-21-11**

Applicant/Owner: **Wildlands** State: **CA** Sampling Point: **15**

Investigator(s): **Roper** Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): **None** Slope (%): **+/- flat**

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: **Cieneba Coarse Sandy Loam 15-30 percent slopes, eroded** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = **0**
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: **0** (A)	**0** (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

No vegetation

SOIL

Sampling Point: 15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
			--					

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Hard packed soil with decomposed granite. No soil data collected

HYDROLOGY

Wetland Hydrology 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**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology. Maintained for year-round use.

WETLAND DETERMINATION DATA FORM – Arid West Region

AG Field

Project/Site: San Luis Rey Mitigation Bank City/County: Oceanside/San Diego Sampling Date: 7-21-11

Applicant/Owner: Wildlands State: CA Sampling Point: 16

Investigator(s): Roper Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): +/- flat

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Cieneba Coarse Sandy Loam 15-30 percent slopes, eroded NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	0
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Field is out of production for this season. Mostly unvegetated. This field was planted in tomato during in 2010.

SOIL

Sampling Point: 16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	**10yr 4/3**		**--**					**Loamy Sand**

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology 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**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology.

Appendix B

Plant Species Observed within the Study Area (2011)

Scientific Name	Common Name	Growth Habit	Wetland Indicator Status	Family
Ambrosia artemisiifolia	Common ragweed	AH	FACU	Asteraceae
Anagallis arvensis	Scarlet pimpernel	AH	FAC	Primulaceae
Anthemis cotula	Mayweed	AH	FACU	Asteraceae
Artemisia californica	California sagebrush	S	UPL	Asteraceae
Arundo donax	Giant reed	PG	FACW	Poaceae
Baccharis salicifolia	Mule fat, seep-willow	S	FACW	Asteraceae
Brassica sp.	Mustard	AH	UPL	Brassicaceae
Bromus diandrus	Ripgut grass	AG	UPL	Poaceae
Bromus hordeaceus	Soft chess	AG	FACU-	Poaceae
Bromus madritensis ssp. Rubens	Red brome	AG	NI	Poaceae
Cerastium glomeratum	Mouse-ear chickweed	AH	FACU	Caryophyllaceae
Chamaesyce sp.	Spurge	AH	UPL	Euphorbiaceae
Chenopodium album	Lambsquarter	AH	FAC	Chenopodiaceae
Chenopodium ambrosioides	Mexican tea	PH	FAC	Chenopodiaceae
Convolvulus arvensis	Bind weed	PV	UPL	Convolvulaceae
Conyza sp.	Horseweed	AH	FAC	Asteraceae
Cotula coronopifolia	Brass-buttons	AH	FACW+	Asteraceae
Cynodon dactylon	Bermuda grass	PG	FAC	Poaceae
Cyperus sp	flatsedge/nutgrass	PH	FACW/OBL	Cyperaceae
Datura stramonium	Jimson weed	AH	UPL	Solanaceae
Digitaria sanguinalis	Hairy crabgrass	PG	FACU	Poaceae
Eleocharis sp.	Spike-rush	PH	OBL	Cyperaceae
Epilobium pygmaeum	Smooth spike-primrose	AH	FACW	Onagraceae
Epilobium sp.	Willow-herb		UPL/OBL	Onagraceae
Eragrostis pilosa	Lovegrass	AG	FACU	Poaceae
Eriogonum fasciculatum	California buckwheat	S	UPL	Polygonaceae
Erodium cicutarium	Redstem filaree	AH	UPL	Geraniaceae
Eucalyptus sp.	Eucalyptus	T	UPL	Myrtaceae
Foeniculum vulgare	Sweet fennel	PH	FACU	Apiaceae
Gnaphalium luteo-album	Cudweed everlasting	AH	FACW-	Asteraceae
Heliotropium curassavicum	Alkali heliotrope	PH	OBL	Hydrophyllaceae
Hirschfeldia incana	Summer mustard	PH	UPL	Brassicaceae
Hordeum murinum ssp. Leporinum	Hare barley	AG	NI	Poaceae
Lactuca serriola	Prickly wild lettuce	AH	FAC	Asteraceae
Lepidium latifolium	Broadleaf peppergrass	PH	FACW	Brassicaceae
Lepidium sp.	Peppergrass	AH		Brassicaceae
Lolium multiflorum	Italian ryegrass	AG	FAC	Poaceae
Lupinus sp.	lupine	PH	UPL	Fabaceae
Lycopersicon esculentum	Tomato	AH	UPL	Solanaceae
Lythrum hyssopifolia	Hyssop loosestrife, wallow poly	AH/PH	FACW	Lythraceae
Malosma laurina	Laurelleaf sumac	S	UPL	Anacardiaceae
Malva parviflora	Cheeseweed	AH	UPL	Malvaceae
Medicago polymorpha	Bur-clover	AH	UPL	Fabaceae
Melilotus alba	White sweetclover	AH	FACU+	Fabaceae
Melilotus indica	Sourclover	AH	FAC	Fabaceae

Scientific Name	Common Name	Growth Habit	Wetland Indicator Status	Family
Melilotus officinalis	Yellow sweetclover	AH	FACU	Fabaceae
Oenothera elata	Great marsh evening primrose	BH	FACW	Onagraceae
Opuntia sp.	Prickly pear	S	UPL	Cactaceae
Paspalum distichum	Joint Dallis grass	PG	OBL	Poaceae
Picris echioides	Bristly ox-tongue	AH	FAC	Asteraceae
Plantago lanceolata	Narrowleaf plantain	PH	FAC-	Plantaginaceae
Plantago major	Broadleaf plantain	PH	FACW-	Plantaginaceae
Platanus racemosa	Western sycamore	T	FACW	Platanaceae
Poa annua	Annual bluegrass	AG	FACW-	Poaceae
Polygonum aviculare	Prostrate knotweed	AH	FAC	Polygonaceae
Polypogon monspeliensis	Rabbitsfoot grass	AG	FACW+	Poaceae
Populus fremontii	Fremont cottonwood	T	FACW	Salicaceae
Portulaca oleracea	Common purslane	AH	FAC	Portulaceae
Quercus agrifolia	Coast live oak	T	UPL	Fagaceae
Ricinus communis	Castor bean	S	FACU	Euphorbiaceae
Rorippa nasturtium-aquaticum	Water-cress	PH	OBL	Brassicaceae
Rosa californica	California wild rose	S	FAC+	Rosaceae
Rumex crispus	Curly dock	PH	FACW-	Polygonaceae
Salix exigua	Sandbar willow	S	FACW	Salicaceae
Salix gooddingii	Black willow	T	OBL	Salicaceae
Salix lasiolepis	Arroyo willow	T	FACW	Salicaceae
Salsola tragus	Russian thistle		FACU	Chenopodiaceae
Sambucus mexicana	Blue elderberry	S	FAC	Caprifoliaceae
Schinus molle	Peruvian pepper tree	T		Anacardiaceae
Scirpus americanus	Three-square bulrush, Olney's bulrush	PH	OBL	Cyperaceae
Scirpus californicus	California bulrush	PH	OBL	Cyperaceae
Scirpus fluviatilis	River bulrush	PH	OBL	Cyperaceae
Sonchus oleraceus	Common sow-thistle	AH	NI	Asteraceae
Spergularia marina	Saltmarsh sandspurry	AH	OBL	Caryophyllaceae
Tamarix sp.	Salt-cedar, (tamarisk)		FAC/FACW	Tamaricaceae
Tribulus terrestris	Puncture weed, land caltrop	AH	UPL	Zygophyllaceae
Triticum aestivum	Cultivated wheat	AG	UPL	Poaceae
Typha latifolia	Broad-leaved cattail, soft flag	PH	OBL	Typhaceae
Urtica dioica	Giant creek or hoary nettle	PH	FACW	Urticaceae
Veronica anagallis-aquatica	Common speedwell	PH	OBL	Scrophulariaceae
Vulpia bromoides	Slender fescue	AG	FACU	Poaceae
Vulpia sp.	Fescue	AG		Poaceae
Washingtonia sp	fan palm	T	FACW	Arecaceae
Xanthium strumarium	Cocklebur	AH	FAC+	Asteraceae

Growth habit definitions:

AF = annual fern or fern ally.
AG = annual grass.
AH = annual herb.
AV = annual vine.
BH = biennial herb.
PF = perennial fern or fern ally.
PG = perennial grass.
PH = perennial herb.
PV = perennial vine.
S = shrub.
T = tree.

Appendix C

Representative Photographs

Study Area overview. Southwest of the Study Area boundary looking slightly east of north. Permanent field road in foreground, ag field midphoto, Arundo lined levee in background. Photo date: 7/21/11.

Looking northwest near Data Points 14, 15, and 16. Area developed for equipment storage on the far left, maintained ag drainage ditch and road in center, ag field on far left of photo. Photo date: 7/21/11.

South ag field. Looking north. Sparsely vegetated with volunteer tomato plants. Photo date: 6/30/11.

Coastal Sage Scrub. Facing south, camera pointed upslope. Edge of developed area in foreground, coastal sage scrub midphoto, and edge of school property in the extreme upper right (note the chain link fence). Photo date: 6/30/11.

Western portion of developed/disturbed area in the northeast portion of the Study Area. Facing north. Maintained road in foreground and large rock staging midphoto. Photo date: 6/30/11.

Eastern portion of developed/disturbed area in the northeast portion of the Study Area. Facing north. Graded storage area in foreground. Tomato trellis post storage in the background. Photo date: 6/30/11.

Freshwater marsh near data point 1. Standing on levee, Facing south. Note the Arundo growing in the foreground and background (north bank and south bank). Photo date: 6/30/11.

Small clearing along north levee. Facing west. This clearing in the Arundo reveals the steep levee slope and rock armor. Note the abrupt wetland boundary. Freshwater marsh on the left, levee/rock and Arundo mid photo, and ag field on the extreme left. Photo date: 6/30/11.

Riparian forest near data point 7. Photo date: 6/30/11.

Data point 7 soil pit. Note soil saturation and standing water. Photo date: 6/30/11.

Eastern field edge, just west of data point 8. Facing south. Steep slope to riparian on the far left. Photo date: 6/30/11.

Exhibit A

Jurisdictional Delineation

San Luis Rey Mitigation Bank
Preliminary Wetland Delineation

Delineator: *Roper*
Surveyor: *Roper*
Survey Dates: *June 27 - 30, July 21, 2011*
Survey Equipment: *Trimble Geo XT*
Delineation By: *Wildlands*
3855 Atherton Road
Rocklin, CA 95765
Map Prepared: *August 08, 2011*

Verification Date: *N/A*
Verified By: *N/A*
USACE Reference Number: *N/A*

Aerial Source: *Google Earth, August 24, 2010*

Wetlands of the U.S.

- Freshwater Marsh (FM) ----------> 5.374 Acres
- Riparian Forest (RF) ----------> 0.940 Acres

Total: ***6.314 acres***

Other Waters of the U.S.

- Agricultural Drainage Ditch (AD) -----> 0.247 Acres

Total: ***0.247 acres***

Non-Jurisdictional Areas

- Agricultural Field ----------> 49.678 Acres
- Coastal Sage Scrub ----------> 0.821 Acres
- Developed/Disturbed ----------> 10.477 Acres
- Levee ----------> 1.466 Acres

Total: ***62.442 acres***

Other Features

- Data Point
- Preliminary Study Area

Scale/Orientation

0 75 150 300 Feet *(1" = 150')*

Data Table

ID #	*ID*	*Type*	*Acreage*
1	FM1	Freshwater Marsh	5.374
2	RF2	Riparian Forest	0.934
3	RF3	Riparian Forest	0.006
5	AD5	Agricultural Drainage Ditch	0.013
6	AD6	Agricultural Drainage Ditch	0.046
7	AD7	Agricultural Drainage Ditch	0.018
8	AD8	Agricultural Drainage Ditch	0.003
9	AD9	Agricultural Drainage Ditch	0.063
10	AD10	Agricultural Drainage Ditch	0.020
11	AD11	Agricultural Drainage Ditch	0.038
12	AD12	Agricultural Drainage Ditch	0.010
13	AD13	Agricultural Drainage Ditch	0.036

Exhibit B

Morro Hill 7½-minute U.S. Geological Survey Quadrangle

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MORRO HILL QUADRANGLE
CALIFORNIA–SAN DIEGO CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

2550 IV NW
(MARGARITA PEAK)

2550 I NW
(TEMECULA)

2550 IV NE
(FALLBROOK)

(OCEANSIDE)
2550 II NW

(SAN MARCOS)
2550 II NW

2550 IV SW
(LAS PULGAS CANYON)

(BONSALL)
2550 I SW

117°22'30"
33°22'30"
117°15'
33°15'
17'30"
20'
1 690 000 FEET
1 660 000 FEET
400 000 FEET
440 000 FEET
R. 5 W.
R. 4 W.
T. 9 S.
T. 10 S.
T 10 S
T 11 S

SAN CLEMENTE 17 MI.
SAN ONOFRE INTERSTATE 5 14 MI.

TEMECULA 14 MI.
BONSALL (CALIF. 76) 6 MI.

SAN LUIS REY 4.2 MI.
7 MI. TO INTERSTATE 5

OCEANSIDE 4.5 MI.
3 MI. TO INTERSTATE 5

SAN LUIS REY 2.4 MI.

Produced by the United States Geological Survey in cooperation with California Department of Water Resources

Control by USGS, NOS/NOAA, and USCE

Compiled from aerial photographs taken 1946. Field checked 1948
Revised from aerial photographs taken 1967 and other sources.
Field checked 1968

North American Datum of 1927 (NAD 27). Projection and 10 000-foot ticks: California Coordinate System, zone 6 (Lambert Conformal Conic)
Blue 1000-meter Universal Transverse Mercator ticks, zone 11

North American Datum of 1983 (NAD 83) is shown by dashed corner ticks. The values of the shift between NAD 27 and NAD 83 for 7.5-minute intersections are obtainable from National Geodetic Survey NADCON software

There may be private inholdings within the boundaries of the National or State reservations shown on this map

Red tint indicates area in which only landmark buildings are shown

GN MN
0°10'
3 MILS
15°
267 MILS

UTM GRID AND 1968 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

Fine red dashed lines indicate selected fence lines
Dotted land lines established by private survey

SCALE 1:24 000

1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET
SUPPLEMENTARY CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

CALIF
QUADRANGLE LOCATION

ROAD CLASSIFICATION
Medium-duty ——— Light-duty .....
Unimproved dirt - - - - -
State Route

MORRO HILL, CA
33117-C3-024
1968
DMA 2550 IV SE-SERIES V895

ISBN 0-7837-0-024-5
9 780607 052813

INTERIOR-GEOLOGICAL SURVEY, RESTON, VIRGINIA—1968

San Luis Rey Mitigaion Bank Study Area