Delineation of Potential Jurisdictional Wetlands and Waters

for

San Luis Ranch

San Luis Obispo County

Prepared for

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List of Acronyms and Abbreviations

APN:	Assessor's Parcel Number
CCR:	California Code of Regulations
CDFG:	California Department of Fish and Game, now California Department of Fish and Wildlife
CDFW:	California Department of Fish and Wildlife, formerly California Department of Fish and Game
CFR:	Code of Federal Regulations
CIMIS	California Irrigation Management Information System
COOP:	National Weather Service Cooperative Station
Corps:	U.S. Army Corps of Engineers
CWA:	Clean Water Act
EPA:	Environmental Protection Agency
FEMA-FIRM:	Federal Emergency Management Agency Flood Insurance Rate Map
GIS:	Geographic Information System
GPS:	Global Positioning System
NRCS:	Natural Resource Conservation Service
NTCHS:	National Technical Committee for Hydric Soils
NWS:	National Weather Service
OHWM:	Ordinary High Water Mark
RAWS	Remote Area Weather Station
RWQCB:	Regional Water Quality Control Board
SSURGO:	Soil Survey Geographic Database
SWRCB:	State Water Resources Control Board
TNW:	Traditional Navigable Water
U.S.:	United States
USACE:	U.S. Army Corps of Engineers
USDA:	U.S. Department of Agriculture
USFWS:	U.S. Fish and Wildlife Service
USGS:	U.S. Geological Survey
WETS:	Climate Analysis Tables for Wetlands

1.0 Introduction

1.1 Purpose

This report provides a delineation of potential jurisdictional wetlands and waters according to federal and state standards on San Luis Ranch, San Luis Obispo, California.

The principal purpose of this delineation is to describe jurisdictional waters and wetlands of the United States and the State of California according to the standards of each jurisdiction. This document presents a comprehensive inventory and mapping effort of wetland and aquatic resources within the Study Area. This wetland delineation provides information for owners and agencies with jurisdiction including the United States Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW; formerly California Department of Fish and Game, CDFG), the California Regional Water Quality Control Board (RWQCB), and the CEQA Lead Agency in decisions regarding proposed activities in the Study Area.

The report delineates wetlands and waters potentially under jurisdiction of the County of San Luis Obispo, State of California, and/or United States. Section 2.0 provides more detail on the regulatory framework and scope of this jurisdictional delineation.

1.2 Responsible Parties

TABLE 1. RESPONSIBLE PARTIES.

Owner/Applicant	Project Engineer
MI San Luis Ranch, LLC PO Box 13 Pismo Beach, CA 93448-0013	**Cannon** 1050 Southwood Drive San Luis Obispo, CA 93401 (805) 544-7407
Biological Consultant	
Althouse and Meade, Inc. 1602 Spring Street Paso Robles, CA 93446 (805) 237-9626 Contact: Patrick Mock, Ph.D.	

1.3 Study Area Location and Extent

The Study Area is located at 1035 Madonna Road, in the City of San Luis Obispo, San Luis Obispo County, California, near the intersection of Madonna Road and Dalidio Drive (Figure 1). The property is approximately 131 acres. The Madonna Road branch of the San Luis Obispo Post Office is adjacent to the northern corner of the property. The property is bounded on the northeast by Dalidio Drive, on the northwest by Madonna Road, on the east by Highway 101, on the south by City Farm - San Luis Obispo and on the west by Lower Prefumo Creek. Approximate coordinates for the center of the Study Area (APN 067-121-022) are N35° 15’ 23” / W120° 40’ 46” (WGS84) in the San Luis Obispo United State Geological Survey

(USGS) 7.5' topographic quad. Elevation ranges from approximately 120 to 140 feet above sea level.

1.4 Land Use History and Current Conditions

The Study Area has been an active agricultural area for many decades and is currently leased for agricultural production.

1.4.1 Vegetation and habitats

The Study Area is located south of the intersection of Madonna Road and Dalidio Drive in San Luis Obispo. It is comprised of 133 acres including the property, approximately 110 acres of which are continuously planted and plowed farmland, and the residential area along Prefumo Creek that is immediately adjacent to the property that may have been inaccessible (Figure 2). The 20-acre City Farm – San Luis Obispo is adjacent to the Study Area on the south, creating a contiguous 151 acre agricultural area.

Several dozen large blue gum eucalyptus (*Eucalyptus globulus*) and a handful of Monterey cypress (*Hesperocyparis macrocarpa*) border the northwest edge of the property along Madonna Road. The west portion of the property consists of three residences, barns, and outbuildings situated on approximately 6 acres of disturbed habitat. South of the farm buildings is an approximately 6-acre blue gum eucalyptus grove. Southwest of the post office is an approximately 2-acre non-native annual grassland dominated by slender wild oat (*Avena barbata*), and an approximately 1.5-acre stand of blue gum eucalyptus. Scattered coyote brush (*Baccharis pilularis*) and non-native ruderal species are present in this area.

Laguna Lake and Laguna Lake Park are situated northwest of the Study Area across Madonna Road. Prefumo Creek flows out of Laguna Lake, under Madonna Road, down along the western edge of the property, and drains into San Luis Obispo Creek approximately half a mile to the south. The creek flows primarily during the winter months, with water going subsurface in the summer. The riparian corridor is dominated by a mixture of arroyo willow (*Salix lasiolepis*) and non-native vegetation. There is a broken concrete slab and dysfunctional control structure in the creek bed by a foot trail extending from Froom Ranch Way on the west to the eastern bank of the creek. Blue gum eucalyptus trees line the eastern creek bank from Madonna Road south to near the creek crossing.

There is also an ephemeral drainage a few feet deep running southwest across the property into Prefumo Creek. The drainage is fairly degraded, and there are chunks of asphalt in the drainage from an old road. The eastern portion of the drainage, which runs along the east side of the Post Office, is dominated by mature arroyo willow and red ironbark (*Eucalyptus sideroxylon).* The western portion of the drainage lacks any large shrubs and is mainly dominated by annual grass and ruderal forbs.

A list of plants observed during delineation efforts is included in Section 4.0, Technical Findings.

1.4.2 Soils

The United States Department of Agriculture (USDA) SSURGO data (2007) and Soil Survey of San Luis Obispo County, California, Coastal Part (1984) and USDA SSURGO Data (Tabular

data version 4, Spatial data version 1, 2008) delineate three soil map units that intersect the Study Area boundaries (Figure 3). The Study Area is mapped as Cropley clay (127 and 128) and Salinas silty clay loam (197).

The soil survey was not meant to be applied at the acre-scale, but does indicate the soil map units in the vicinity of small properties. Below we discuss the details and properties of the soil types found in the Study Area (in order of area delineated in the Study Area).

Soil map units typically encompass one or two dominant soils that cover more than 50 percent of the mapped area, and one to several soils that occur in small patches not differentiated in mapping at the 1 to 24,000 scale used for Natural Resource Conservation Service (NRCS) soil maps. Due to the procedures followed in making a soil survey, users of soil survey data are cautioned that not all areas included within a soil survey are closely sampled using soil pits and site descriptions, and a specific site may not have been sampled at all. Therefore, care must be taken in drawing conclusions regarding site-specific soil resources based solely on NRCS soil survey work. Digitized spatial data from the Coastal Part Soil Survey are shown as an overlay of soil map units on an aerial photo of the region with the following caution from NRCS regarding maps: "Enlargement of these maps could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale."

Cropley clay on zero to two percent slopes (127) is the dominant soil type in the Study Area and underlies approximately two-thirds of the irrigated cropland in the center of the property. This soil type is very deep and moderately well-drained. It occurs on alluvial fans and plains, having been formed in alluvium weathered from sedimentary rocks. The permeability is slow, the available water capacity high, and the erosion hazard is low. Included in this map unit are small areas of Concepcion loam, Diablo clay, and Salinas silty clay loam. This soil is in capability units IIs-5 (14), irrigated and IIIs-5 (14), non-irrigated.

Cropley clay, 2 to 9 percent slopes (128) is another soil type found in the northeast section of the Study Area. It consists of very deep and moderately well-drained soils on alluvial fans and plains, having been formed in alluvium weathered from sedimentary rocks. The permeability is slow, the available water capacity high, and the erosion hazard is low. Included in these map units are small areas of Los Osos loam and Salinas silty clay loam. This soil is in capability units IIs-5 (14), irrigated and IIIs-5 (14), non-irrigated. This soil type underlies the homestead, farm buildings, annual grassland, and the majority of the eucalyptus trees.

Salinas silty clay loam, with zero to two percent slopes (197) underlies the southeastern third of the irrigated cropland as well as a small section along the western edge of the Study Area next to Prefumo Creek. It formed in alluvium weathered from sedimentary rocks, and occurs on alluvial fans and plains. This soil is also very deep and well drained, with a moderately slow permeability and high or very high available water capacity. Included in this map unit are small areas of Cropley clay, Marimel silty clay loam, and Mocho loam. This soil is in capability units IIe-1 irrigated and III3-1 non-irrigated.

Soil map units according to the NRCS soil survey data are presented graphically as Figure 3, Section 7.0.

1.4.3 Climate

San Luis Obispo's rainfall averaged 22.40 inches between February 1893 and January 20, 2015 (measured at California Polytechnic State University by Western Regional Climate Center at 35° 15' 23" N, 120° 40' 46" W (WGS84; elevation 310 feet). The NRCS WETS Station data in Table 2 averaged 24.62 inches of rain between 1971 and 2000. Average minimum temperature was 46.7 °F, average maximum temperature was 69.8 °F, and the average temperature was 59.6 °F (NRCS 1995). California Irrigation Management Information System (CIMIS) data between 1986 and 2014 at the same location as the Western Regional Climate Center station showed average rainfall of 20.8 inches. Average minimum temperature was 48.4 °F, average maximum temperature was 71 °F, and average temperature was 58.3 °F.

The delineation occurred during drought conditions (Table 2) with approximately 30 percent of average rainfall. The average minimum temperature in 2014-15 was 45 °F, the average maximum temperature approximately 73 °F, and the mean temperature 59.4 °F (Weather Warehouse 2015 [1]).

TABLE 2. AVERAGE PRECIPITATION BY MONTH (INCHES). Rainfall year begins in July and ends in June the following year. Data sources NRCS WETS data from San Luis Obispo Polytechnic State University, CA are from 1971 to 2000, a standard 20-year interval, compared with 2014-15 data obtain from the San Luis Obispo Airport via Weather Underground (2015).

	Average Monthly Rainfall (inches)	
	WETS Data [2]	2014-15 Rain Year [3]
July	0.03	0.0
August	0.09	0.0
September	0.49	0.0
October	1.04	1.01
November	2.14	0.38
December	3.61	2.77
January	5.36	0.07
February	5.54	2.05
March	4.39	0.23
April	1.34	0.90
May	0.49	0.08
June	0.09	not available
Annual Average	**24.62**	**7.49**

[1] https://weather-warehouse.com/

[2] http://agacis.rcc-acis.org/06079/wets/results

[3] San Luis Obispo Airport: http://www.wunderground.com/history/airport/KSBP/2015/05/28/DailyHistory.html

1.4.4 Hydrology

The Study Area is in the San Luis Obispo Creek Watershed, with an unnamed drainage that carries water from San Luis Obispo peak, through shopping centers, to a culvert under Dalidio Road. The drainage feature daylights east of the post office, on the west side of an active farm field. The drainage has been maintained as a farm-field drainage, and routinely maintained for many years. It flows southwest toward Prefumo Creek, a named tributary to San Luis Obispo Creek. Prefumo Creek carries water from the Irish Hills and farm fields, to Laguna Lake, part of a city park, to a large box culvert under Madonna Road to the Study Area. Prefumo Creek has been managed by adjacent farmers and homeowners with evidence of concrete structures to prevent scour and occasional wooden structures installed by homeowners on southwest of the Study Area.

Floodwaters in San Luis Obispo Creek occasionally overtop U.S. Highway 101 east of the Study Area and join overflow water carried across the shopping center parking lots. Floodwater moves south across the farm field until it combines with Prefumo Creek.

Classification of wetlands and waters according to jurisdictional definitions is discussed in Sections 2.0 and 3.0.

2.0 Regulatory Framework

2.1 Federal Jurisdiction

Section 404 of the Clean Water Act (CWA) authorizes the U.S. Army Corps of Engineers (USACE or Corps) to regulate activities that discharge dredged or fill material to wetlands and other waters of the United States. As described by the Environmental Protection Agency (EPA) and the Corps regulations, 40 CFR § 230.3(s) and 33 CFR § 328.3(a), the term "waters of the United States" encompasses the following resources:

> (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
>
> (2) All interstate waters including interstate wetlands;
>
> (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
>
> (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
>
> (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
>
> (iii) Which are used or could be used for industrial purpose by industries in interstate commerce.
>
> (4) All impoundments of waters otherwise defined as waters of the United States under the definition;
>
> (5) Tributaries of waters identified in paragraphs (a) (1) through (4) of this section;

(6) The territorial seas;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1) through (6) of this section.

2.1.1 Limits of federal jurisdiction

The following provides the regulatory definitions and criteria followed for this Report in determining the geographic extent of potential Section 404 jurisdiction.

The geographic limits of relevant federal jurisdiction for non-tidal waters of the U.S. are defined as follows at 33 CFR § 328.4(c):

> Non-Tidal Waters of the United States: The limits of jurisdiction in non-tidal waters:
>
> (1) In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or
>
> (2) When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands, or
>
> (3) When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

The terms "adjacent" and "ordinary high water mark," used in the above definition, are defined at 33 CFR § 328.3:

> The term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are "adjacent wetlands" (33 CFR § 328.3(c)).
>
> The term "ordinary high water mark" means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR § 328.3(e)).

2.1.2 Federal wetlands: definitions

The USACE 1987 Wetlands Delineation Manual (hereafter "1987 Manual"; USACE 1987) uses the following broad definition of wetlands (EPA regulations at 40 CFR § 230.3(t); Corps regulations at 33 CFR § 328.3(b)):

> Those areas that are inundated or saturated by surface or ground water 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.

Wetlands are considered "special aquatic sites" under the USACE definition. Special aquatic sites are afforded protection under the Clean Water Act (Sections 401 and 404). Wetlands may occur within the channel of a jurisdictional drainage (federal wetland waters) or adjacent to jurisdictional features (adjacent wetlands). In both cases, the wetland in question must meet Corps criteria for wetlands.

To be classified as a wetland under USACE jurisdiction, a site must meet certain water, soil, and vegetation criteria. The Corps' 1987 Manual and various regional supplements describe the

criteria that must be met to determine the presence of a wetland, the methods used to determine whether they are met, and the geographic extent of wetland areas identified in the field.

Key diagnostic criteria for determining the presence of wetlands include:

(1) Wetland Hydrology: Inundation or saturation to the surface during the growing season.

(2) Hydric Soils: Soils classified as hydric or that possess characteristics associated with reducing soil conditions.

(3) Predominance of Wetland Vegetation: Vegetation classified as facultative, facultative wet, or obligate according to its tolerance of saturated (i.e., anaerobic) soil conditions.

The 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0 (hereafter "2008 Arid West Supplement") provides region-specific standards for wetland indicators and delineations in the Arid West Region, which includes all of San Luis Obispo County, California (USACE 2008). The 2008 Arid West Supplement does not change the definition of wetlands; rather, it clarifies the standards by which the three parameters, hydric soils, hydrophytic vegetation, and hydrology, are measured under the specific conditions of arid portions of the western United States.

Specific criteria used to determine the presence or absence of wetland hydrology, soil, and vegetation conditions are described in the subsections below.

2.1.2.1 Hydrophytic vegetation

Plant Indicator Status

Hydrophytic vegetation is categorized based on the probability of a taxon to occur in a wetland. The 1988 National List of Plant Species that Occur in Wetlands (Reed 1988) has been superseded by the 2012 List as the current approved plant list for determining probability of a plant to occur in a wetland (http://rsgisias.crrel.usace.army.mil/NWPL/).

Some of the taxonomy used in the National Wetland Plant List differs from current accepted taxonomy used in the Jepson Manual Second Edition, the authority for plant taxonomy in California. Plant names were checked against the NWPL and where taxonomy differs, both the NWPL and current Jepson names are provided.

Wetland indicator status (e.g., tolerance of anaerobic soil conditions) is determined by consulting the National Wetland Plant List (Lichvar 2012) relevant regional list. A National Panel of representatives from four agencies provided input and voted on indicator status for each species included on the NWPL. Additionally, public input was considered. Final indicator status was assigned according to algorithms described on the NWPL website.

The resulting NWPL includes plants that grow in a range of soil conditions from permanently wet to dry. Species are divided into the following "indicator categories":

1. **"Obligate wetland" (OBL)** species almost always occur in wetlands. With few exceptions, these plants are found in standing water or soils seasonally saturated near the surface (14 or more consecutive days).

2. **"Facultative wetland" (FACW)** species usually occur in wetlands, but may occur in non-wetlands. These plants predominately occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.
3. **"Facultative" (FAC)** species occur in wetlands and non-wetlands. These plants can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH, and elevation, and they have a wide tolerance of soil moisture conditions.
4. **"Facultative upland" (FACU)** species usually occur in non-wetlands, but may occur in wetlands. These plants predominately occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface seasonally.
5. **"Obligate upland" (UPL)** species almost never occur in wetlands. These plants occupy mesic to xeric non-wetland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.

Several important differences exist between previous and current lists of wetland plant indicator status (Lichvar et al. 2012a):

1. Wetland plant species were rated using five categories, based on percentages representing the frequency that a species occurs in a wetland. The updated list uses the same five categories but they are now defined based on qualitative ecological descriptions. Quantitative frequency categories are now used only for field-based studies designed to challenge a species' wetland rating.
2. Plants are rated only at the species level. Intra-specific taxa are not treated separately.
3. The NA (no agreement), NO (no occurrence), and NI (no indicator) ratings are no longer used because the update has resolved questions surrounding taxa and distribution previously rated this way.

Species for which a wetland indicator status has not been assigned in the National Wetland Plant List must be designated upland (UPL) according to the Arid West Supplement (USACE 2008), unless there is evidence that the unlisted species are functioning as hydrophytes on a particular site. Justification for treating unlisted species as FAC must be provided.

Species that have an indicator status of OBL, FACW, and FAC are typically considered to be adapted for life in anaerobic soil conditions and are used as evidence of hydrophytic vegetation when they dominate plant community composition or cover (USACE 1987). Despite widespread use of the lists for wetland delineations, it is important to note that wetland indicator species assignments are not based on the results of a statistical analysis of species occurrence. The indicator assignments are approximations of wetland affinity based on a synthesis of submitted review comments, published botanical literature, and the field experience of the members of the National and Regional Panels, with consideration of input from the public.

Individual plants of OBL, FACW, FAC, and FACU species on the NWPL have been observed at least occasionally growing as hydrophytes, and the wetland indicator status reflects the likelihood that a given individual of a species is a hydrophyte or a certain population of these

plants is hydrophytic. While OBL and FACW species are the most reliable plant indicators of wetlands, FAC and FACU species may also contain populations of hydrophytes (Tiner 2006).

The 1987 Corps Manual does not solely rely on the presence of hydrophytic vegetation to make wetland determinations.

Hydrophytic Vegetation Determination

The Corps' 1987 Manual states that hydrophytic vegetation conditions are met when the prevalent vegetation (i.e., more than 50 percent of vegetation cover or tree basal area) consists of macrophytes (plants observable without magnification) that are typically adapted to sites having wetland hydrologic and soil conditions (e.g., periodic or continuous inundation or soil saturation). The 1987 Manual notes, "When the dominant species in a plant community are typically adapted for life in anaerobic soil conditions, hydrophytic vegetation is present." Hydrophytic vegetation is defined as "plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content" (Cowardin et al. 1979). Hydrophytic vegetative species, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions. Because many plant species can occur in a range of habitats, including wetlands and non-wetlands, the presence of a wetland indicator species alone does not necessarily indicate wetland. An assemblage of plants can only be considered "hydrophytes" when they are growing in water or partly drained hydric soils (not effectively drained hydric soils) (USACE 1987). Positive indicators of the presence of hydrophytic vegetation include:

1. More than 50 percent of the dominant species are rated as Obligate ("OBL"), Facultative Wet ("FACW"), or Facultative ("FAC") on lists of plant species that occur in wetlands (Reed 1988);
2. Visual observations of plant species growing in sites of prolonged inundation or soil saturation; and
3. Reports in the technical literature indicating the prevalent vegetation is commonly found in saturated soils.

Hydrophytic vegetation indicators have been further defined and described in the 2008 Arid West Supplement. These indicators include:

1. Dominance Test: more than 50 percent of the dominant plant species across all strata are rated OBL, FACW, or FAC. When the dominance test does not clearly indicate hydrophytic vegetation, prevalence index is checked.
2. Prevalence Index: the prevalence index is 3.0 or less with indicators of hydric soils and wetland hydrology being present. Prevalence index is a weighted average for all plant species in a sampling plot by indicator status. Weighting is by abundance. Prevalence index provides a more complete analysis of species composition than dominance test, particularly for sites with only one or two dominants, highly diverse communities, and where strata vary substantially in percent cover.

Morphological adaptations are used to re-assign indicator status to FACU plants that exhibit adaptations atypical for that species when growing in an upland situation. To re-assign a FACU species to FAC indicator status, at least 50 percent of individuals of that species must exhibit

adaptations for growth in wetland conditions. The plant community passes either the dominance test or the prevalence index after reconsideration of the indicator status of certain plant species that exhibit morphological adaptations for life in wetlands.

2.1.2.2 Hydric soils

The 1987 Manual states that the diagnostic environmental characteristics indicative of wetland soil conditions are met when "soils are present and have been classified as hydric, or they possess characteristics that are associated with reducing soil conditions."

The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Soils that are sufficiently wet because of artificial measures are included in the concept of hydric soils. Also, soils in which the hydrology has been artificially modified are hydric if the soil in an unaltered state was hydric.

A February 20, 1992, Corps memorandum entitled Regional Interpretation of the 1987 Manual states that the most recent version of National Technical Committee for Hydric Soils (NTCHS) hydric soil criteria will be used (to make hydric soil determinations) (USACE 1992a). These soil criteria specify at least 15 consecutive days of saturation or 7 days of inundation (flooding or ponding) during the growing season in most years.

The NTCHS has developed criteria for identifying and mapping hydric soils throughout the United States and defines a hydric soil as "a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part [of the soil profile]". The most recent (2012) version of the NTCHS hydric soils criteria identifies those soils that are likely to meet this definition. These criteria, which are accepted by most state and federal agencies, are as follows (USDA, NRCS 2012):

1. All Histels except Folistels and Histosols except Folists, or
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, or Andic, Cumulic, Pachic or Vitrandic subgroups that are:
    a. Somewhat poorly drained with a water table equal to 0.0 foot (ft.) from the surface during the growing season, or
    b. poorly drained or very poorly drained and have either:
        (i.) water table equal to 0.0 ft. during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches (in),

    or for other soils

        (ii.) water table at less than or equal to 0.5 ft. from the surface during the growing season if permeability is equal to or greater than 6.0 in/hour (h) in all layers within 20 in, or

        (iii.) water table at less than or equal to 1.0 ft. from the surface during the growing season if permeability is less than 6.0 in/h in any layer within 20 in, or

3. Soils that are frequently ponded for long duration or very long duration[4] during the growing season, or
4. Soils that are frequently flooded for long duration or very long duration during the growing season.

Field indicators of hydric soils are morphological properties known to be associated with soils that meet the definition of a hydric soil. Presence of one or more field indicators suggests that processes associated with hydric soil formation have taken place on the site being observed. The field indicators are essential for hydric soil identification because once formed, they persist in the soil during both wet and dry seasonal periods. However, not all hydric soil indicators indicate a site is currently hydric because some indicators persist during dry periods and may remain for decades and even centuries after changes in site conditions occur that inhibit subsequent wetland development, such as the elimination of wetland hydrology (NRC 1995). These indicators are useful in determining if soils at a site were historically formed under hydric soil conditions because the indicators persist. Some indicators, including aquic or peraquic moisture regime, reducing soil conditions, and sulfidic odor, indicate current hydric soil conditions.

Hydric soil indicators have also been further defined and described in the 2008 Arid West Supplement. It should also be noted for problematic areas that the Supplement specifies 14 days continuous ponding as an acceptable indicator of problematic hydric soils (USACE 2008, p. 101). The Regional Supplement also states that "*if indicators of hydrophytic vegetation and wetland hydrology are present, then hydric soil indicators can be assumed to be contemporary*." Therefore, oxidized rhizospheres indicate hydric soil conditions when this feature is combined with hydrophytic vegetation and wetland hydrology.

2.1.2.3 Wetland hydrology

The 1987 Corps Manual states that wetland hydrology conditions occur when a "site is inundated either permanently or periodically at mean water depths less than or equal to 6.6 feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation." Whether a site meets either of these criteria is determined by the presence of diagnostic indicators of wetland hydrology, which are presented on pages 28 through 34 of the 1987 Manual.

A March 8, 1992 Corps memorandum entitled *Clarification and Interpretation of the 1987 Manual* provides further clarification (USACE 1992b):

> Areas which are seasonally inundated and/or saturated to the surface for a consecutive number of days for more than 12.5 percent of the growing season are wetlands, provided the soil and vegetation parameters are met. Areas wet between 5 percent and 12.5 percent of the growing season in most years may or may not be wetlands. Sites saturated to the surface for less than 5 percent of the growing season are non-wetlands.

Wetland hydrology indicators have also been further defined and described in the 2008 Arid West Supplement. These indicators are listed on page 63 of the Supplement. In the Arid West region, wetland hydrology may be indicated when soils are inundated or saturated within 12 inches of the surface for at least two weeks during the growing season. Hydrology indicators

[4] *long duration*: a duration class in which inundation for a single event ranges from 7 days to 1 month.
very long duration: a duration class in which inundation for a single event is greater than 1 month.

included high water table, site topography, drift lines, drainage patterns, sediment deposits, inundation, and saturation of soils. However, extended dry seasons and drought years are part of normal variation in climate patterns of the arid west, and "lack of an indicator is not evidence for the absence of wetland hydrology" (USACE 2008). According to the 2008 Arid West Supplement, wetland hydrology is best indicated by presence of wetland plant communities, hydric soil morphology, and observation of wet conditions during the wet season. Thus in drought years, plant community and soil morphology are considered carefully when determining if wetland hydrology may be present under normal conditions.

2.1.3 Federal jurisdictional other waters

Many aquatic habitats do not meet criteria for federal wetlands but are jurisdictional "Other Waters of the U.S" (OWUS). Federal jurisdiction over these waters is limited to the area within the OHWM. The Corps definition of OHWM provides the criterion by which the OHWM boundaries can be identified, which consists of "that line on the shore established by fluctuations of water and indirect physical characteristics" (33 CFR § 328.3(e)).

Where relevant OHWM is identified and noted according to guidance provided in 2005 Regulatory Guidance Letter 05-05: *Ordinary High Water Mark Identification* (USACE 2005) and the 2008 Corps Publication, *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM)* in the Arid West Region of the Western United States, A Delineation Manual (Lichvar and McColley 2008).

Presence of OHWM is used to distinguish federal jurisdictional areas from non-jurisdictional features, including swales, gullies, and other erosion features that do not regularly transport water during normal storm events.

The 2005 Guidance states that Corps jurisdiction under CWA Section 404, federal jurisdiction in non-tidal waters where no wetland is present is limited to the extent of the OHWM, as defined at 33 CFR 328.3 (see above, Section 2.1.1). The 2005 Guidance notes that physical evidence, gage data, historic records of flow, and statistical evidence can be used to establish OHWM and that more than one physical indicator can indicate OHWM. Guidance specifically lists the following physical indicators of OHWM:

- Natural line impressed on the bank
- Shelving
- Changes in the character of soil
- Destruction of terrestrial vegetation
- Presence of litter and debris
- Wracking
- Vegetation matted down, bent, or absent
- Sediment sorting
- Leaf litter disturbed or washed away
- Scour
- Deposition
- Multiple observed flow events
- Bed and banks
- Water staining
- Change in plant community

Guidance notes that this is not an exhaustive list and other characteristics may indicate OHWM. Guidance recommends that two or more characteristics be identified to ensure accurate

identification of OHWM. Where discernible, these characteristics are used to determine the location of OHWM.

The 2008 OHWM Manual notes it is intended for use in low-gradient, alluvial ephemeral/intermittent channel forms in the Arid West. The Manual lists and describes indicators associated with areas that become flooded or ponded, but are not dominated by wetland vegetation and the duration of flooding, ponding and/or near-surface soil saturation (≤12 inches) is not sufficient to cause hydric soils to form or wetland hydrology conditions to occur. Water marks, drift lines, formation of benches and terraces, recent transport and deposition of sediment, differences in type and density of vegetative cover, and observation of water levels during the wet season are some indications of standing or flowing water under normal conditions. Indicators are summarized on pages 21 through 28 of the OHWM Manual (Lichvar and McColley 2008).

2.1.4 Federal legal summary

Recent Supreme Court cases, particularly the SWANCC and Rapanos cases, have resulted in changes to interpretation of USACE jurisdiction over wetlands and waters that are not Traditional Navigable Waters (TNWs) in the strictest sense. The 2001 SWANCC decision vacated USACE authority to take jurisdiction over non-Traditional Navigable Water wetlands and waters solely on the presence of migratory birds. The 2006 Rapanos decision addressed USACE authority to take jurisdiction over wetlands and waters that are non-Traditional Navigable Waters under the Clean Water Act (EPA/USACE 2008, 2007a). Supreme Court decisions on these cases allow USACE jurisdiction over non-Traditional Navigable Water wetlands and waters if:

1. The feature in question is a Relatively Permanent Water body (RPW) or a wetland that directly abuts a Relatively Permanent Water, or
2. The feature in question, in combination with all wetlands adjacent to it, has a significant nexus with a Traditional Navigable Water.

The first criterion allows USACE jurisdiction over non-navigable but relatively permanent tributaries to a navigable water. The second criterion allows USACE jurisdiction over non-RPW, tributaries to and wetlands that abut RPW when a "significant nexus" can be established. A "significant nexus" exists if it can be demonstrated that the feature in question, "in combination with all its adjacent wetlands, has more than a speculative or an insubstantial effect on the chemical, physical, and/or biological integrity of a Traditional Navigable Water. …volume, duration, and frequency of flow of water in the tributary and the proximity of the tributary to a Traditional Navigable Water, plus the hydrologic, ecologic, and other functions performed by the tributary and all its adjacent wetlands" should be considered for evaluation of a significant nexus (EPA and USACE 2007b).

The USACE and EPA periodically issue guidance to clarify how the agencies identify wetlands and other waters within their jurisdiction. The most recent approved guidance was issued in 2008; however, new draft guidance was issued in 2011. New regulations implementing the

portions of the draft 2011 guidance were finalized on May 26, 2015 [5]. This regulatory rule is scheduled to take effect 60 days after publication in the Federal Register.

2.2 State Jurisdiction

The State of California receives regulatory authority over wetlands and waters within the State as specified in Section 401 of the Clean Water Act; the Porter-Cologne Water Quality Act (State Water Code); the California Coastal Act; and Fish and Game Code Section 1600. Limits of jurisdiction defined in these regulations are summarized below.

2.2.1 State jurisdictional wetlands definitions

The State of California uses a broader definition of wetlands. In conjunction with adopting a wetlands policy on March 9, 1987 the California Fish and Game Commission assigned the California Department of Fish and Game (CDFG; now California Department of Fish and Wildlife) the task of recommending a wetlands definition [6]. The CDFG found the U.S. Fish and Wildlife Service (USFWS) wetland definition and classification system based on the Cowardin definition to be the most biologically valid. California Department of Fish and Wildlife (CDFW) staff uses this definition as a guide in identifying wetlands while conducting on-site inspections for the implementation of its Commission's wetlands policy. Like the USACE definition, the USFWS definition of a wetland incorporates the three key parameters of hydrophytic vegetation, hydric soils, and hydrology (Cowardin et al. 1979):

> *Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For the purpose of this classification, wetlands must have one or more of the following attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; (3) the substrate is non-soil and is saturated or covered with shallow water at some time during the growing season of each year.*

The key difference in the federal and state definitions is that under most circumstances, only one of the three criteria must be present to define state wetlands. For methodology used in this delineation, see Section 3.0 below.

[5] http://www2.epa.gov/sites/production/files/2015-05/documents/rule_preamble_web_version.pdf

[6] http://resources.ca.gov/wetlands/introduction/defining_wetlands.html

3.0 Delineation Methods

3.1 Federal Jurisdiction

3.1.1 Overview of sampling methodology

Potential jurisdictional wetlands and other waters were identified using techniques described in the 1987 Manual and the 2008 Arid West Supplement. The USACE routine onsite method of wetland delineation was used. This includes locating data points within different topographic zones and habitat types that are associated with wetlands and uplands, with the majority of the data points located within the potential wetland boundary.

Soil pits were dug by hand at three detailed data points, and field indicators for the three USACE parameters (hydrophytic vegetation, hydric soils, and wetland hydrology) were investigated and described in full. Data points were selected where presence of hydrophytic vegetation, wetland hydrology, or low relief indicated potential wetland, with informal, investigative adjacent pits in upland locations described to compare soil features in upland locations and upland vegetation with soil conditions in suspected wetlands. Locations of all three formal soil sample sites are recorded on the Jurisdictional Delineation Map (Figure 8). Approximately one dozen informal pits were dug within the drainage and in adjacent upland areas to confirm wetland boundaries. The Routine Wetland Determination Data Forms for the Arid West Region was filled out for each formal soil sample site, which are included as Exhibit A. Photos of representative sites are included as part of Photographs in Section 8.0.

Sufficient pits were dug to verify that specific assemblages of plant species associated with specific landforms and hydrology were also associated with wetland soil conditions. Several pits were excavated in a historically disturbed low area near a water line easement to assess soil conditions. Each formal site evaluation was recorded on a 2008 USACE Routine Wetland Determination Data Form—Arid West Region. Field work was focused on determining extent of wetland conditions adjacent to a coastal salt marsh with tidal channels that connect to the Pacific Ocean.

Site visits were made on five days. Table 3 summarizes dates of field work and personnel attending each site visit. Plant material was identifiable to species during delineation work.

TABLE 3. FIELD WORK LOG. Wetland delineation survey dates, actions taken, and field personnel are provided.

Survey Date	Activities	Personnel
March 23, 2015	Mark OWHM in Prefumo Creek and Drainage A	LynneDee Althouse
April 14, 2015	Sample sites including soil pits in Drainage A	LynneDee Althouse David Gallagher
April 21, 2015	Soil pit along Drainage A and reconnaissance surveys in Prefumo Creek	Jacqueline Tilligkeit
April 30, 2015	Sample sites along Prefumo Creek	Jacqueline Tilligkeit Jeremy Pohlman
May 5, 2015	Vegetation descriptions along Prefumo Creek	Jeremy Pohlman
May 6, 2015	Vegetation descriptions along Prefumo Creek	Jeremy Pohlman

3.1.2 Wetlands

Wetlands are described based on the presence of three factors: hydrology, hydric soils, and wetland vegetation.

3.1.2.1 Wetland hydrology

The presence or absence of wetland hydrology field indicators was assessed following methodology presented in the 1987 Manual and the 2008 Supplement. Wetland scientists looked for indicators as described in those documents, including but not limited to high water table, site topography, drift lines, drainage patterns, sediment deposits, inundation, observation of wet conditions during the growing season, and saturation of soils. Indicators observed in the Study Area include drainage patterns and topography, muck, reduced iron, inundation visible on aerial photos, hydrogen sulfide odor, and high water table.

3.1.2.2 Wetland soils

Soils were examined according to methodology presented in the 2008 Arid West Supplement and 1987 Manual. Hydric soil indicators were recognized on the basis of soil characteristics verified in the USDA-NRCS publication, *Field Indicators of Hydric Soils in the United States* (version 7.0, USDA-NRCS 2010) and the NTCHS definition of hydric soils. Soil sampling points were located as described above in Section 3.1.1, Overview of Sampling Methodology.

Soil profiles were described for selected soil morphological characteristics such as texture, Munsell color, moisture, horizonation, and presence/absence of redoximorphic features. Soil samples were examined in the field with a hand lens where appropriate. Testing for hydric soils was performed by looking for one or more of the field indicators, which include low chroma, mottling, gleying, concretions, iron masses, depletions, and sulfidic odor. Soil series and map units were noted from United States Department of Agriculture (USDA) soils maps; however, due to coarse scale and general nature of soil survey maps, these data were used only to understand the general character of soils on site. Observations and test pits were used to investigate site-specific soil conditions.

3.1.2.3 Wetland vegetation

Vegetation in each stratum was identified to species and recorded. The indicator status of plants was confirmed by referring to the *National List of Plant Species that Occur in Wetlands: 1988 National Summary* (Reed). Indicator status is discussed in detail in Section 2.1.

Species dominance was noted for each stratum using the "50/20 Rule". Percent absolute cover was estimated by species for each stratum, and species were ranked in decreasing order of coverage. Dominant species were selected from the ranked list in descending order until their cumulative cover exceeded 50 percent of total cover for each stratum. Any species that alone formed 20 percent or more of the total cover for one stratum was also considered dominant. Dominance was determined for all samples; prevalence index was calculated for selected samples.

3.1.2.4 Wetland connectivity/adjacency

In response to decisions on SWANCC, Rapanos, and other recent Supreme Court cases, the EPA and USACE issued a joint Memorandum regarding *Clean Water Act Jurisdiction Following Rapanos v. United States* that requires additional documentation and new standards in determining jurisdiction (EPA/USACE 2008). This wetland delineation report contains information sufficient to assist Corps project managers in performing jurisdictional determinations consistent with new guidance. Connectivity to Traditional Navigable Waters and their tributaries is established via field work where accessible, as well through analysis of aerial photographs, United States Geographic Service (USGS) topographic map, USGS National Hydrography Dataset, and site-specific topographic survey. Features in the Study Area share ground and/or surface connection with tidal waters of the Pacific Ocean.

3.1.3 Other Waters

Other Waters are described based on features that are evidence of an OWHM, but lack wetlands and are typically dominated by upland (non-hydrophytic) vegetation.

3.1.3.1 Hydrology

For features that do not contain vegetation suggestive of wetlands, evidence of OHWM was used to determine extent of Corps jurisdiction over other waters of the U.S. Where relevant, Ordinary High Water Mark is identified and noted according to guidance provided in 2005 Regulatory Guidance Letter 05-05: Ordinary High Water Mark Identification and the 2008 Corps Publication, A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States, as described above in Section 2.1.3.

The OHWM Manual lists and describes indicators associated with areas that become flooded or ponded, but are not dominated by wetland vegetation and the duration of flooding, ponding and/or near-surface soil saturation (less than or equal to12 inches) is not sufficient to cause hydric soils to form or wetland hydrology conditions to occur. Water marks, drift lines, formation of benches and terraces, recent transport and deposition of sediment, differences in type and density of vegetative cover, and observation of water levels during the wet season are some indications of standing or flowing water under normal conditions. Where discernible these characteristics are used to determine location of OHWM. Indicators are summarized on pages 21 through 28 of the OHWM Manual.

3.1.3.2 Waters connectivity/adjacency

As described above in Section 3.1.1.4, connectivity of features to adjacent Traditional Navigable Waters (TNWs) was assessed via site work and investigation of aerial photos and USGS topographic maps. Evidence of physical, chemical, and/or biological influence, size of watershed, and connectivity to TNWs was considered.

3.2 State and County Jurisdiction

3.2.1 Overview

For federal wetlands and waters that are also under jurisdiction of the State and County, jurisdictional wetlands and waters followed procedures outlined above in Section 2.2, because wetlands and waters that meet federal jurisdictional criteria also fall within State and County definitions of wetlands and waters. We considered the following guidance to determine if areas not under Federal jurisdiction are potentially under the jurisdiction of the State and the County of San Luis Obispo.

3.2.2 Wetlands

As mentioned in Section 2.2.1 above, sometimes only one indicator is necessary to indicate presence of wetlands under the jurisdiction of the State and County of San Luis Obispo. Care must be taken when using only one factor to delineate wetlands because annual variations in site conditions can temporarily create circumstances that promote one wetland indicator where a true wetland habitat is not present. For instance:

- Unusually high annual rainfall or unusually intense storms can result in misleading indication of hydrology (events that are not "ordinary", such as floods that are greater than 2- to 5-year events).
- Soils high in shrinking/swelling clays can seal under prolonged wet conditions and form weak hydric indicators, such as occasional iron concentrations along pores, due to slow diffusion rates of air into soil.
- Deep-rooted hydrophytic species such as willows can become established in unusually wet years and persist when conditions return to normal.
- Furthermore, species rated FAC or FACW still have a probability of 33 to 66 percent of occurring in uplands rather than wetlands.

Therefore, to classify a site as wetland on the basis of only one wetland indicator, all site characteristics are carefully considered. For instance, in a wet year, presence of an annual facultative species is unlikely to indicate wetland, while presence of the same facultative species in a dry year is much more compelling.

3.3 Mapping Methodology

Mapping efforts utilized surveyed topographic mapping with 1-foot contour intervals provided by Cannon Corp, San Luis Obispo. Our results vary somewhat from these existing publications due to the finer scale and on-the-ground data collection techniques used in our work. GPS data collected with Samsung Galaxy Tab 4 tablets with Garmin GLO GPS Receivers, digital notes, and photos were imported into ESRI ArcGIS, a Geographic Information Systems software suite, and interpreted into topographic maps and aerial photography with data point and polygon locations.

4.0 Technical Findings

4.1 Federal Jurisdictional Areas

A discussion of typical findings for each wetland type is provided below.

4.1.1 Federal wetlands

Wetlands are considered "special aquatic sites" under the USACE definition. Special aquatic sites are afforded protection under the Clean Water Act Sections 401 and 404. All wetlands delineated within the study area met the federal wetlands criteria.

4.1.1.1 Wetland vegetation

Vegetation observed on the subject site was used to identify location and extent of wetlands on the subject site. A list of species observed during delineation work and used to determine boundaries of wetlands versus uplands is provided Table 4.

*4.1.1.2 Federal and State vegetated wetlands are present within the 1,805 linear feet of Prefumo Creek, with arroyo willow (*Salix lasiolepis*) being the dominant canopy cover in the drainage and along the western banks. Dense patches of hydrophytic vegetation are present in the understory of the willows and in open areas without dense canopy cover. Water smartweed (*Persicaria amphibia) *and common tule (*Schoenoplectus acutus) *are abundant throughout the upstream (northern) portion of the drainage with several ruderal and facultative species such as kikuyu grass (*Pennisetum clandestinum*) present further downstream. The arroyo willow canopy is dense downstream, closer to the southeastern boundary of the Study Area. Approximately 65 percent of Prefumo Creek channel contains hydrophytic vegetation. A large concrete basin is present at the southeastern edge of the Study Area, and a concrete box culvert and apron is present at the upper, Madonna Road, end of the Study Area. Blue gum eucalyptus (*Eucalyptus globulus) *is the dominant canopy cover on the northern bank of the drainage, with patchy ruderal vegetation present in the understory of the canopy and along the eastern bank. Wetland hydrology*

The state and federal hydrology indicators were limited to within the channel of the two drainages.

4.1.1.3 Wetland soils

Three sample sites were identified and evaluated using the 2008 Arid West Supplement Determination form. Three soil sampling pits were distributed throughout Prefumo Creek and Drainage A, which is tributary to Prefumo Creek. Investigative informal pits were dug throughout both drainages and in upland areas to confirm presence of hydric soil boundaries.

Pits were dug to 12 inches in various vegetation types throughout the drainages (between top of banks). Moist matrix and redoximorphic feature colors were described using Munsell Soil Color Charts. Based on color information and horizonation, hydric soil indicators were determined.

TABLE 4. PLANT LIST. Vegetative indicators recorded on site during wetland delineation work. Plant species not included in the 2014 NWPL are noted "NL" (not listed) and considered upland (UPL) for purposes of wetland delineation per the USACE manual and supplement. Jepson Manual Second Edition names are provided in brackets where they differ from current NWPL names and for species not included in NWPL.

NWPL Scientific Name (JM2 name)	Common Name	Origin	Wetland Indicator Status (2014 NWPL)
Herbs - 39			
Acmispon [=Lotus] strigosus	Bishop lotus	Native	UPL
Anagallis arvensis	Scarlet pimpernel	Introduced	UPL
Berula erecta	Cutleaf water-parsnip	Native	OBL
Carduus pycnocephalus	Italian thistle	Introduced	UPL
Chenopodium album	Lamb's-quarters	Introduced	FACU
Conium maculatum	Poison hemlock	Introduced	FACW
Convolvulus arvensis	Bindweed	Introduced	UPL
Cyperus eragrostis	Umbrella sedge	Native	FACW
Delairea odorata [=Senecio mikanioides]	German ivy	Introduced	UPL
Dipsacus sativus	Fuller's teasel	Introduced	UPL
Equisetum telmateia	Giant horsetail	Native	FACW
Erodium cicutarium	Redstem filaree	Introduced	UPL
Eschscholzia californica	California poppy	Native	UPL
Foeniculum vulgare	Fennel	Introduced	UPL
Galium aparine	Goose grass	Native	FACU
Geranium dissectum	Geranium	Introduced	UPL
Helminthotheca [=Picris] echioides	Bristly ox-tongue	Introduced	FACU
Juncus effusus	Pacific rush	Native	FACW
Lactuca serriola	Prickly lettuce	Introduced	FACU
Malva parviflora	Cheeseweed	Introduced	UPL
Oxalis pes-caprae	Bermuda buttercup	Introduced	UPL
Persicaria [=Polygonum] amphibia	Water smartweed	Native	OBL
Phalaris aquatica	Harding grass	Introduced	FACU
Plantago coronupus	Buckhorn plantain	Native	FACW
Plantago lanceolata	English plantain	Introduced	FAC
Plantago major	Broad-leaved plantain	Introduced	FAC
Pseudognaphalium luteoalbum [=Gnaphalium luto-album]	Jersey cudweed	Introduced	FAC
Raphanus sativus	Wild radish	Introduced	UPL

NWPL Scientific Name (JM2 name)	Common Name	Origin	Wetland Indicator Status (2014 NWPL)
Rubus ursinus	California blackberry	Native	FAC
Rumex crispus	Curly dock	Introduced	FAC
Rumex salicifolius	Willow dock	Native	FACW
Schoenoplectus [=Scirpus]acutus	Common tule	Native	OBL
Sonchus asper ssp. *asper*	Prickly sow-thistle	Introduced	FAC
Symphoricarpos albus	Common snowberry	Native	FACU
Typha sp.	Cattail	Native	OBL
Verbena lasiostachys	Verbena	Native	FAC
Vicia sativa	Common vetch	Introduced	FACU
Vinca major	Periwinkle	Introduced	UPL.
Xanthium spinosum	Spiny cocklebur	Native	FACU
Grasses – 7			
Avena fatua	Wild oat	Introduced	UPL
Bromus diandrus	Ripgut brome	Introduced	UPL
Festuca perennis [=Lolium multiflorum]	Italian rye grass	Introduced	UPL
Hordeum murinum	Foxtail barley	Introduced	FACU
Melica californica	California melicgrass	Native	UPL
Pennisetum clandestinum	Kikuyu grass	Introduced	FACU
Polypogon monspeliensis	Annual beardgrass	Introduced	FACW
Shrubs – 3			
Baccharis pilularis	Coyote brush	Native	UPL
Heteromeles arbutifolia	Toyon	Native	UPL
Toxicodendron diversilobum	Poison oak	Native	FACU
Trees – 8			
Eucalyptus globulus	Blue-gum	Introduced	UPL
Salix laevigata	Red willow	Native	FACW
Salix lasiolepis	Arroyo willow	Native	FACW
Populus fremontii ssp. *fremontii*	Fremont cottonwood	Native	UPL
Phoenix canariensis	Canary Island date palm	Introduced	UPL
Platanus racemosa	Western sycamore	Native	FAC
Ailanthus altissima	Tree of heaven	Introduced	FACU
Quercus agrifolia var. *agrifolia*	Coast live oak	Native	UPL

Moist matrix colors at the surface horizon for all sample sites were black (10YR 2/1) and had a clay or silty clay texture. Redox features were present in all drainage sample sites within the top 6-inches at greater than 5 percent and ranged from distinct to prominent. These soil characteristics are indicative of a hydric soil through the Redox Dark Surface technical description (USACE 2008). Based on the formal and informal soil pits, it was concluded that the majority, if not all, of the soil between the banks of both Prefumo Creek and Drainage A is hydric.

4.1.2 Federal other waters

Federal Other Waters are areas within the OHWM that lack federal wetland vegetation. Only the lower reach of Drainage A does not contain wetland vegetation, and was mapped as a federal other water. The bed of the channel is gravel or gravelly soil, with little or no vegetation, and a canopy dominated by eucalyptus trees above the banks. At the confluence with Prefumo Creek, the channel is lined with old asphalt. Approximately 35 percent of Prefumo Creek may also be considered Other Waters due to scour, concrete debris and pooling. Two pools of standing water were present at the southeast end of the Study Area during our March and April 2015 site visits.

4.1.2.1 Other waters hydrology and OHWM characteristics

All Other Waters supported hydric soils. The width of the OHWM was on average 39 feet wide in Prefumo Creek and 17 feet wide in Drainage A. In Prefumo Creek, the OHWM is indicated by several features: (1) The box culverts under Madonna Road are stained by water marks; (2) the channel banks contain a distinct primary flood terrace, indication of high flow; (3) debris caught on willows and logs. In Drainage A, OHWM is less distinct, due to repeated manipulation from adjacent farming activities. On average, the width of the OHWM in Drainage A is 14 feet. In some areas, a primary flood terrace is present, approximately 18 inches high, and at the upper end, debris clings to willows growing in the channel.

4.2 State Jurisdictional Areas

4.2.1 State wetlands

Wetlands are considered "special aquatic sites." Special aquatic sites are afforded protection by the California Fish and Game Code (Section 1603). State wetlands include all areas that are federal jurisdictional wetlands, and also include additional features that have at least one of the indicators necessary to meet federal standards, or that meet all three federal criteria but lack connectivity to a traditional navigable water or relatively permanent water. The limits of state jurisdiction encompassed the top-of-bank with adjacent riparian canopy also included if it was beyond the channel limits. No other locations beyond the drainage channels in the Study Area had sufficient evidence of hydric soil, wetland hydrology, or hydrophytic vegetation to be deemed state wetland. See Section 4.1 for discussion of wetlands that are federal jurisdictional wetlands.

5.0 Jurisdictional Delineation

Jurisdictional areas (Table 5) are based on the mapped location of wetlands mapped as described in Section 3.0 for the Jurisdictional Delineation Study Area. Results are reported separately for Federal and State, jurisdictions.

5.1 Federal Jurisdictional Areas

Federal Waters of the US include vegetated wetlands that meet the three criteria of hydrology, soils, and vegetation within and adjacent to the OHWM boundary. Areas within the OHWM lacking either hydric soils and/or hydrophytic vegetation are considered federal Other Waters. Prefumo Creek supports 1.61 acres of vegetated wetlands that met federal wetlands criteria and 0.11 acre of unvegetated Other Waters. Drainage A only supports 0.24 acre of unvegetated Other Waters and 0.42 acre that meet federal wetlands criteria (Table 5). There is a total of 2.38 acres of federal jurisdictional waters, including wetlands within the Study Area.

5.2 State Jurisdictional Areas

State jurisdictional areas include all federal wetlands and federal Other Waters, plus any additional areas that are delimited by the Top-of-Bank boundaries (Table 6). Any riparian vegetation beyond the Top-of-Bank boundaries are also included in the Waters of the State delineation. Isolated wetlands were absent in the Study Area.

5.3 Summary of Jurisdictional Areas

In the Study Area, 2.38 acres of federal jurisdictional Waters and Wetlands of the US and 4.62 acres of Waters and Wetlands of State were mapped. A breakdown of wetlands by jurisdiction is provided in Table 7. Linear distances and average width of the two drainages are provided in Table 8.

TABLE 5. FEDERAL JURISDICTIONAL WETLAND AND OTHER WATERS. Calculated federal jurisdictional wetland area and length of other waters are given for the Study Area.

Federal Jurisdictional CWA Section 404 Regulated Waters of the U.S.	Area (Sq. Ft. / Acres)	Length/Width (Linear feet)
Prefumo Creek		
Adjacent Wetland	0	NA / NA
Wetland Waters	70,208 / 1.61	1805 / 39
Other Waters	4,648 / 0.11	89 / 52
Drainage A - Tributary to Prefumo Creek		
Adjacent Wetland	0	NA / NA
Wetland Waters	18,351 / 0.42	956 / 19
Other Waters	10,363 / 0.24	745 / 14
Total	**103,570 / 2.38**	**3,595 / 29**

TABLE 6. STATE JURISDICTIONAL WETLANDS AND WATERS. Calculated state jurisdictional wetland area are given for the Study Area.

State Jurisdictional Wetlands and Other Waters of State	Area (Sq. Ft. / Acres)	Length/Width (Linear feet)
State Wetlands that are also Federal Wetlands	88,559 / 2.03	2,761 / 32
State Wetlands with 3 Factors, but Isolated	0	0
State Wetlands, 1- or 2- factors	83,903 / 1.93	NA
State Waters that are also Federal Waters	15,011 / 0.35	834 / 18
Additional State Waters	13,341 / 0.31	NA / 52
Total Jurisdictional Waters and Wetlands	**200,814 / 4.62**	**3,595 / 52**

TABLE 7 . SUMMARY OF JURISDICTIONAL WETLANDS AND OTHER WATERS.

Agency/ Regulation	Acres
Wetlands	
USACE - Clean Water Act Section 404	2.03
RWQCB - Clean Water Act Section 401; Porter Cologne Act CDFW Fish and Game Code 1600	3.96
Other Waters	
Federal Jurisdictional Other Waters that are also State Waters	0.35
Additional State Jurisdictional Other Waters (that are not Federal Other Waters)	0.31
Total Jurisdictional Area	**2.38 Federal** **4.62 State**

TABLE 8 . SUMMARY OF JURISDICTIONAL WATERS LINEAR CHARACTERISTICS.

Agency with Jurisdiction	Total Length (Linear Feet)	Average OHWM/Channel Width (Feet)
Federal Jurisdictional Waters	3,595	40 Prefumo Creek 17 Drainage A
State Jurisdictional Waters	3,595	56 Prefumo Creek 32 Drainage A

This report is subject to verification by the United States Army Corps of Engineers, the State of California, and the City of San Luis Obispo.

6.0 References

14 CCR 13577. The California Code of Regulations Section 13577(b) of Title 14, Division 5.5, Article 18: http://www.coastal.ca.gov/la/wetland_def.html.

33 CFR 320-332. U.S. Army Corps of Engineers Regulatory Program Regulations. (Current through 2/17/2011). Text from Code of Federal Regulations. Available from: http://ecfr.gpoaccess.gov. Accessed 21 February 2011.

40 CFR 230. Guidelines for specification of disposal sites for dredged or fill material. (Current through 2/17/2011). Text from Code of Federal Regulations. Available from: http://ecfr.gpoaccess.gov. Accessed 21 February 2011.

California Department of Forestry and Fire Protection, Fire and Resource Assessment Program (FRAP). 2000. State of California Precipitation Map.

California Public Resource Code § 30121. http://www.coastal.ca.gov/la/wetland_def.html.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C.

Environmental Protection Agency and Army Corps of Engineers, Engineers (EPA/USACE). 2008. Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States. December 2, 2008 Memo. 13 pages. http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/cwa_guide/cwa_juris_2dec08.pdf

_____. 2007a. U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook. http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/cwa_guide/jd_guidebook_051207final.pdf

_____. 2007b. Memorandum for Director of Civil Works and U.S. EPA Regional Administrators; Subject: U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (Corps) Coordination on Jurisdictional Determinations (JDs) under Clean Water Act (CWA) Section 404 in Light of the SWANCC and Rapanos Supreme Court Decisions. 5Jun07. Online at http://www.usace.army.mil/CECW/Documents/cecwo/reg/cwa_guide/rapanos_moa_06-05-07.pdf. Accessed 21 February 2011.

Hickman, James C. 1993. The Jepson Manual. University of California Press, Berkeley and Los Angeles, California.

Kartesz, J.T. 2012. Floristic Synthesis of North America, Version 1.0. Biota of North America Program (BONAP). (in press).

Lichvar, R. W. and S.M. McColley. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual. Ed.. ERDC/CRREL TR-08-12. Hanover, NH: U.S. Army Engineer Research and Development Center.

Lichvar, Robert W. 2012. The National Wetland Plant List. Army Corps of Engineers, Engineer Research and Development Center Cold Regions Research and Engineering Laboratory, Hanover, NH. ERDC/CCREL TR-12-11. October.

Lichvar, Robert W. and John T. Kartesz. 2012a. North American Digital Flora: National Wetland Plant List, version 3.0 (http://wetland_plants.usace.army.mil) U.S. Army Corps of Engineers Engineer Research and Development Center Cold Regions Research and Engineering Laboratory, Hanover, NH and BONAP, Chapel Hill, NC.

Lichvar, R.W., N. Melvin, M.Butterwick, and W. Kirchner. 2012b. National Wetland Plant List Indicator Rating Definitions. Wetland Regulatory Assistance Program. ERDC/CRREL TN-12-1. July.

McDaniel, Paul, ed. 2011. The Twelve Soil Orders: Soil Taxonomy. University of Idaho, Moscow, Soil and Land Resources Division. Available online at http://soils.cals.uidaho.edu/soilorders/index.htm.

Munsell Soil Color Charts. 2000 (Revised Edition).

Munsell Soil Color Charts. 2009 (Revised Edition).

National Research Council. 1995. Wetlands: Characteristics and Boundaries. National Academy Press, Washington, DC.

Reed, P.B., Jr. 1988. National List of Plant Species that Occur in Wetlands: National Summary. U.S. Fish and Wildlife Service Biological Report 88(24).

Rosatti, T.J. ed. 2008. Jepson Flora Project, Index to California Plant Names. Updated September 5, 2006. Online at http://ucjeps.berkeley.edu/db/icpn/.

San Luis Obispo County. 2015. SLO Airport # 205.4; Monthly Precipitation Report. Volunteer Precipitation Gauge Station, Public Works.

State of California. 2010. Porter-Cologne Water Quality Control Act. With Additions and Amendments Effective January 1, 2010. California Water Code, Division 7. Water Quality. Effective January 1, 2010. Available online at\ http://www.swrcb.ca.gov/ laws_regulations/docs/portercologne.pdf

State Water Resources Control Board. 2001a. State Regulation Of "Isolated" Waters. Memorandum. Available online at http://www.swrcb.ca.gov/water_issues/ programs/cwa401/docs/stateregulation_isolatedwaters.pdf

Tiner, R. 2006. "Lists of potential hydrophytes for the United States: a regional review and their use in wetland identification." Wetlands, Vol.26, No. 2, pp. 624-634. June.

U.S Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. Environmental Laboratory. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.

_____. 1992a. Regional Interpretation of the 1987 Manual. Memorandum. February 20.

_____. 1992b. "Clarification and Interpretation of the 1987 Manual." Memorandum. March 8.

_____. 1998. Methods to Determine the Hydrology of Potential Wetland Sites. WRP Technical Note HY-DE-4.1. Vicksburg, MS. January. Online at http://el.erdc.usace.army.mil/ elpubs/pdf/hyde4-1.pdf

_____. 2003. Interim Guidance concerning waters of the U.S. in light of SWANCC (App A of Advance Notice of Proposed Rulemaking on CWA definition of waters of the U.S., published in 68 Fed. Reg. 1995. Jan 15. [Accessed October 2009] Online at http://www.spn.usace.army.mil/regulatory/.

_____. 2005. Regulatory Guidance Letter 05-05: Ordinary High Water Mark Identification. December 7.

_____. 2008. Regional supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

_____. 2009. Channel Morphology Responses to Ordinary High Water Discharge Events in Arid West Stream Channels. Ed. R. Lichvar, D. Cate, C. Photos, L. Dixon, B. Allen, and J. Byersdorfer. ERDC/CRREL TR-09-5. Hanover, N.H., Army Engineer Research and Development Center.

_____. 2011. Draft Guidance on Identifying Waters Protected by the Clean Water Act. April.

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 1998. Keys to Soil Taxonomy, Eighth Edition, 1998.

_____. 2002b. Changes in Hydric Soils of the United States. Federal Register 67:5876. September 18, 2002.

_____. 2006. Field Indicators of Hydric Soils in the United States. Version 6.0. G.W. Hurt and L.M. Vasilas (eds.). USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils (NTCHS).

_____. 2009. National Hydric Soils List by State. April. Online at http://soils.usda.gov/use/hydric/lists/state.html.

_____. 2010. PLANTS Database. National Plant Data Center, Baton Rouge, LA 70874-4490 USA. Online at http://plants.usda.gov. Accessed 5 April 2010.

_____. 2012. Changes in Hydric Soils Database Selection Criteria. Federal Register 77:12234. February 29, 2012.

_____. National Soil Survey Handbook, title 430-VI. Available online at: http://soils.usda.gov/technical/handbook/.

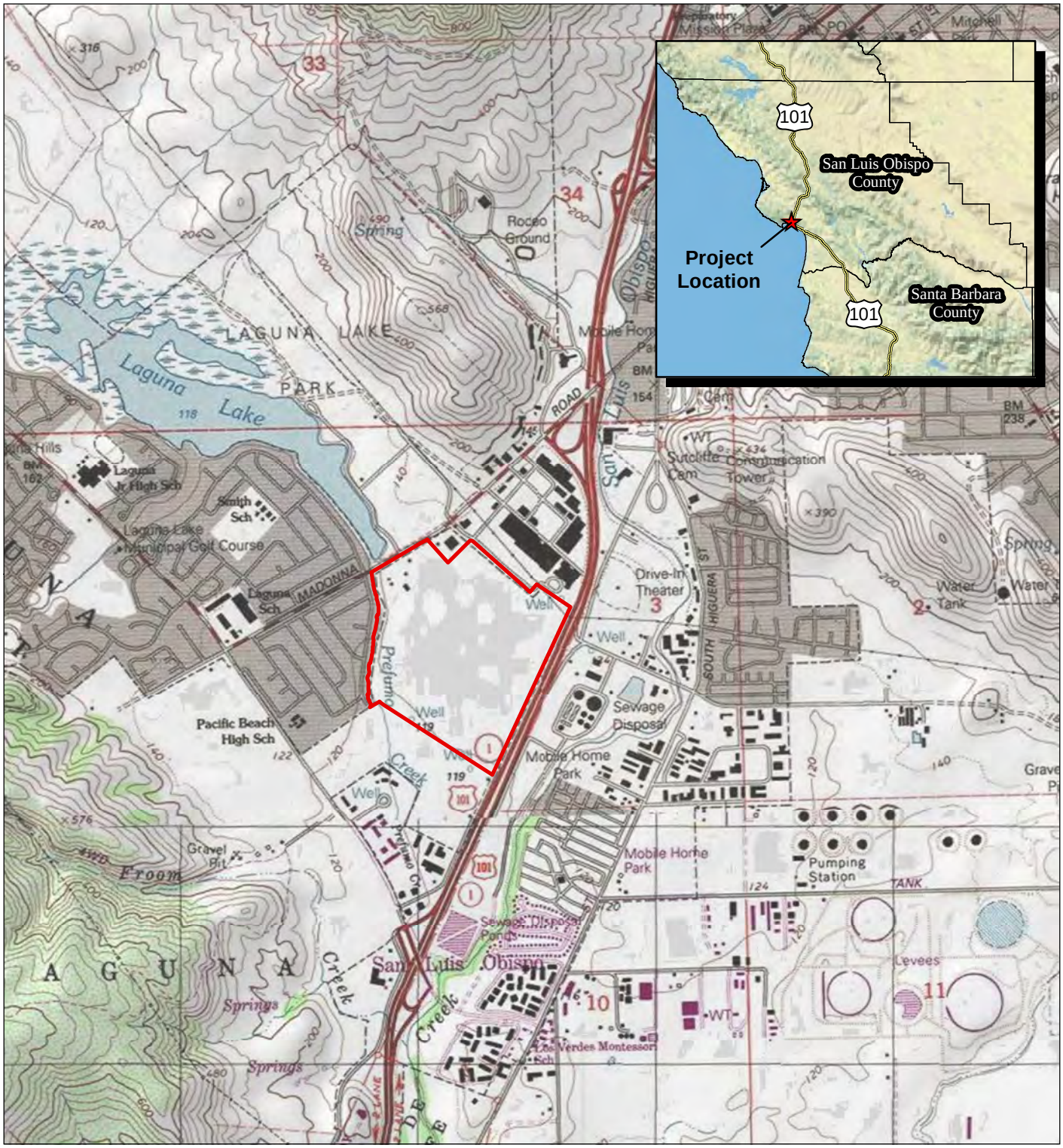
_____. Hydric Soils. Online at http://soils.usda.gov/use/hydric/intro.html. USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils (NTCHS).

U.S. Department of Agriculture (USDA), Soil Survey Staff, Natural Resources Conservation Service. 2014. Available online at http://websoilsurvey.nrcs.usda.gov. Accessed 10/15/2014.

Wilson, Craig M. 2001. Memorandum to SWRCB Board Members from the Office of Chief Counsel, Subject: Effect of SWANCC V. United States on the 401 Certification Program. Available online at http://www.swrcb.ca.gov/water_issues/programs/cwa401/docs /stateregulation_memorandum.pdf. Accessed January 2011.

7.0 Figures

Figure 1. USGS Topographic Map



San Luis Ranch

Map Updated: June 01, 2015

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Figure 2. Aerial Imagery History

N
W E
S

0 0.25 0.5 1 Mile

Study Area

San Luis Ranch

San Luis Obispo County
NAIP Aerial Imagery
Map Updated: June 01, 2015 12:42 PM

ALTHOUSE AND MEADE, INC.
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Figure 3. USDA Soils Map

0 500 1,000 2,000 Feet

Study Area

N W E S

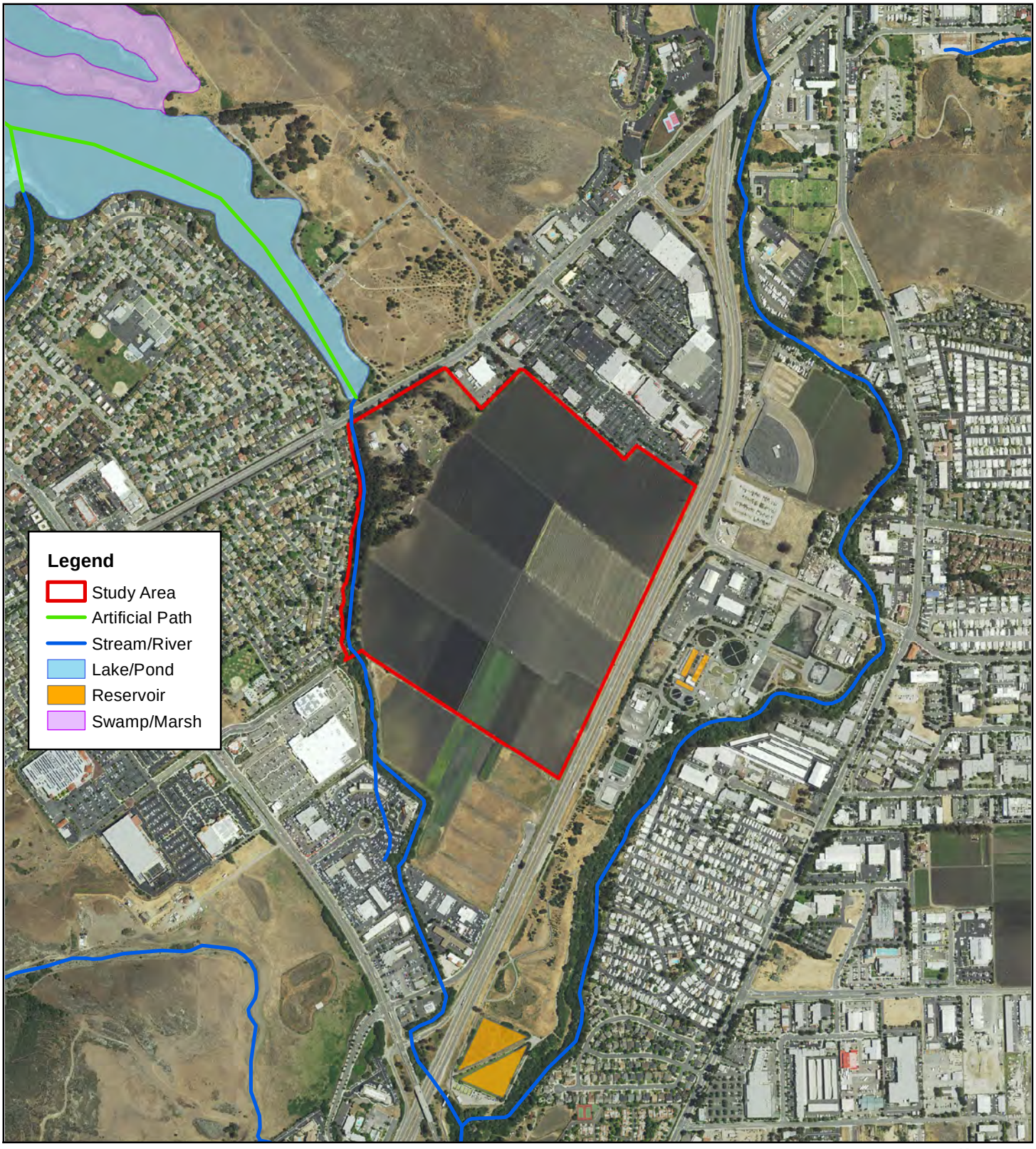
127: Cropley clay, 0 to 2 percent slopes
128: Cropley clay, 2 to 9 percent slopes
197: Salinas silty clay loam, 0 to 2 percent slopes
228: Water

San Luis Ranch

Soil Survey of San Luis Obispo County
Coastal Part
2014 San Luis Obispo County
NAIP Aerial Photography
Map Updated: June 01, 2015, 12:44 PM

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Figure 4. USGS NHD Data

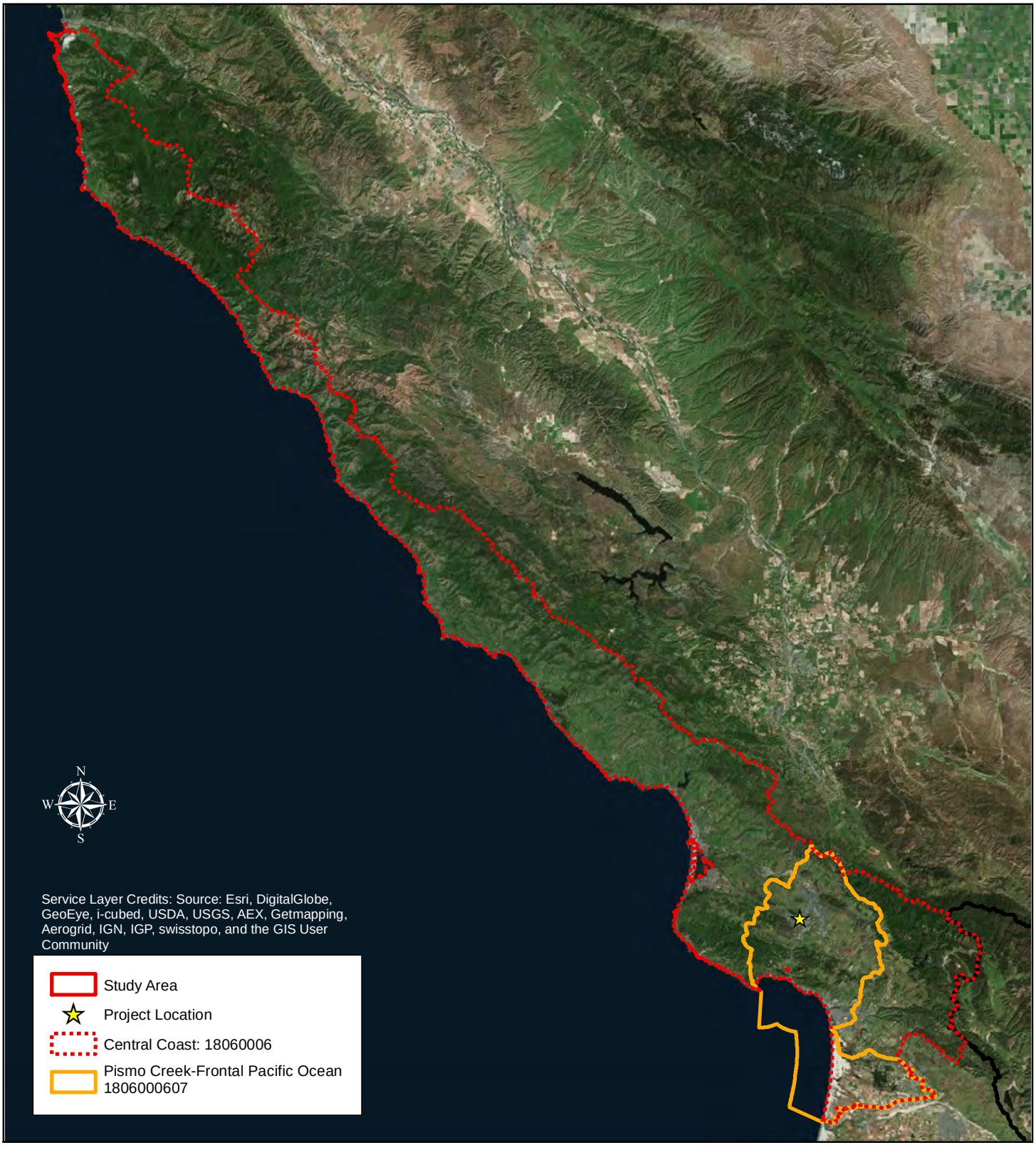


San Luis Ranch

2014 San Luis Obispo County
NAIP Aerial Imagery
Map Updated: June 01, 2015

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Figure 5. USGS 8-digit and 10-digit HUC



San Luis Ranch

Map Updated: June 01, 2015

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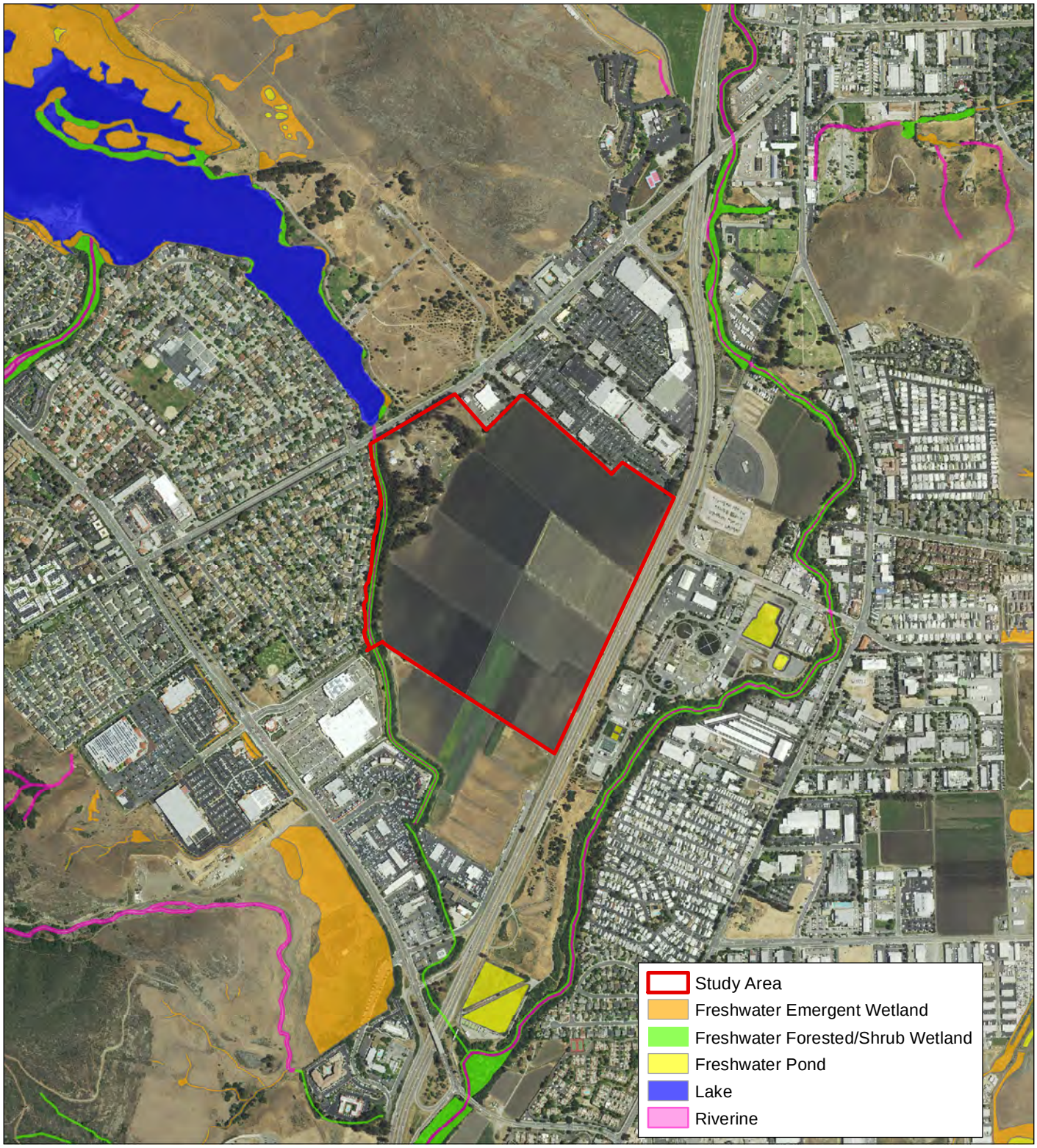
Figure 6. National Wetlands Inventory



San Luis Ranch

2014 San Luis Obispo County
NAIP Aerial Photography
Map Updated: June 01, 2015, 12:49 PM

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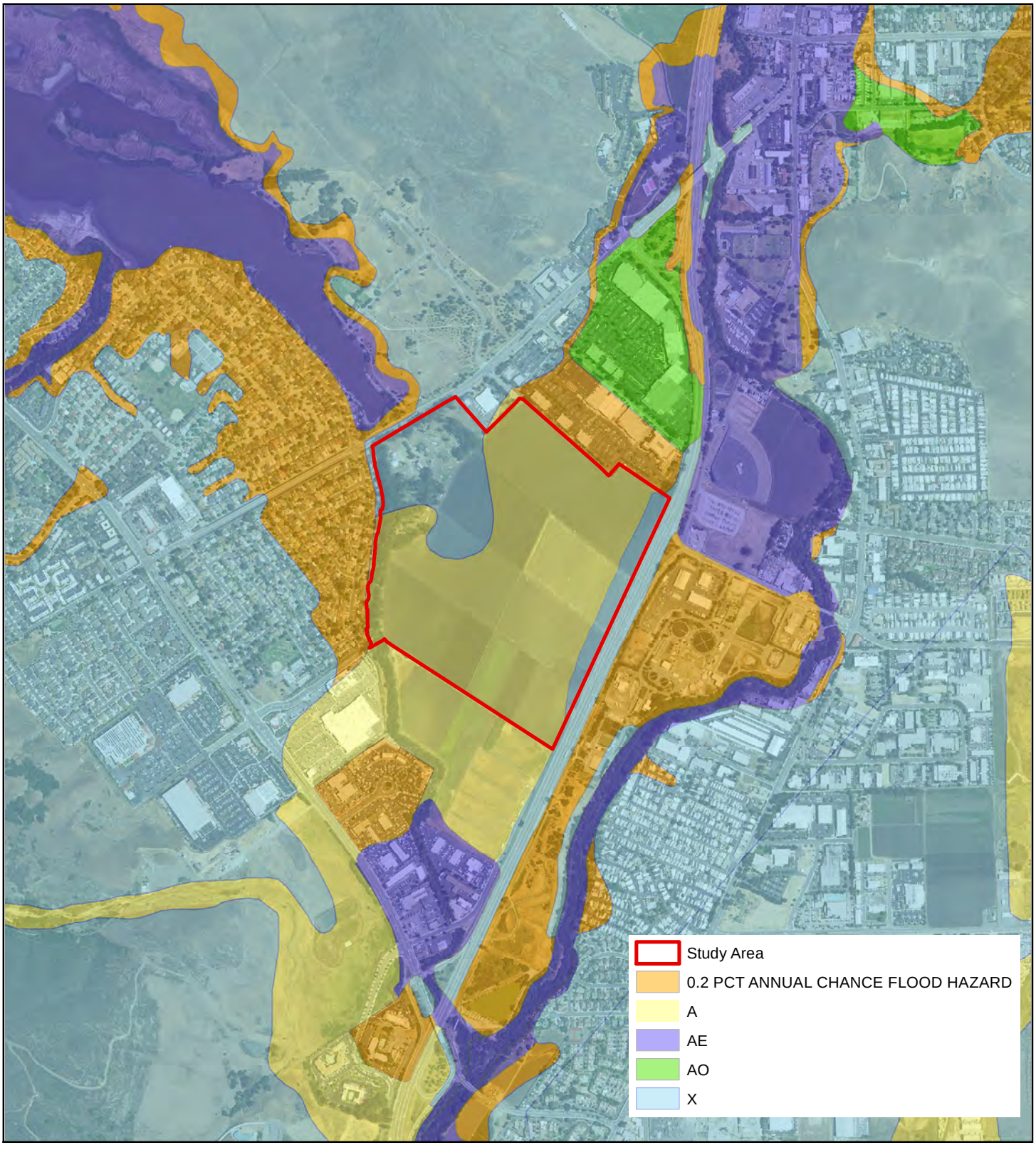
Figure 7. FEMA/FIRM Map



San Luis Ranch

2014 San Luis Obispo County
NAIP Aerial Photography
Map Updated: June 01, 2015, 12:51 PM

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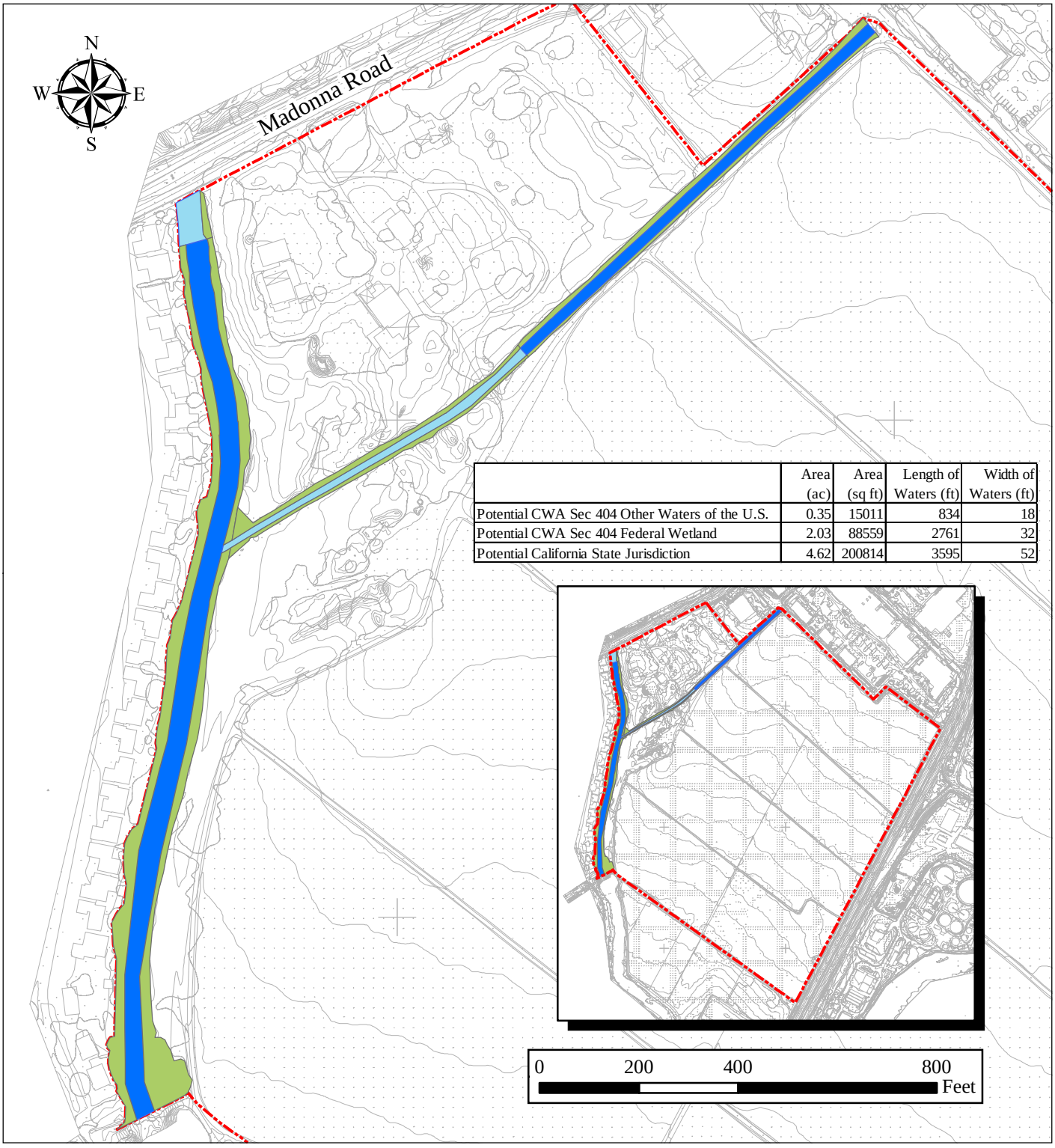
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Figure 8. Jurisdictional Delineation



	Area (ac)	Area (sq ft)	Length of Waters (ft)	Width of Waters (ft)
Potential CWA Sec 404 Other Waters of the U.S.	0.35	15011	834	18
Potential CWA Sec 404 Federal Wetland	2.03	88559	2761	32
Potential California State Jurisdiction	4.62	200814	3595	52

Study Area

Additional Potential California State Jurisdiction

Potential CWA Sec 404 Other Waters of the U.S.

Potential CWA Sec 404 Federal Wetland

San Luis Ranch

2014 San Luis Obispo County
NAIP Aerial Photography
Map Updated: June 01, 2015, 11:01 AM

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8.0 Photographs

Photo 1. Drainage A: View upstream with pin-flags at ordinary high water mark. *Festuca perennis* is dominant species in photo. *Dipsacus fullonum*, *Conium maculatum*, and *Xanthium strumarium* also present. Photo taken 03/23/15.

Photo 2. Drainage A: View upstream with *Eucalyptus globulus* and ruderal vegetation such as *Malva* sp. Photo taken 03/23/15.

Photo 3. Drainage A: Redox features in the upper 12-inches. Photo taken 03/23/15.

Photo 4. Drainage A: View toward post office from under willow canopy. Photo taken 03/23/15.

Photo 5. Prefumo Creek: View upstream with hydrophytic vegetation. *Persicaria amphibia* is dominant species in photo. Photo taken 04/30/15.

Photo 6. Prefumo Creek: Upstream with eucalyptus canopy to the east and arroyo willow in canopy to the west. *Equisetum telmateia* present in the understory. Photo taken 04/30/2015.

Photo 7. Prefumo Creek: View southeast downstream in eucalyptus grove habitat with ruderal vegetation and debris in understory. Photo taken 05/06/2015.

Photo 8. Prefumo Creek: View downstream with hydrophytic vegetation including dense arroyo willow canopy on the creek banks. Photo taken 05/06/2015.

Exhibit A – Routine Wetland Determination Forms

A United States Army Corps of Engineers, Routine Wetland Determination data form (2008 Arid West Supplement Version) was completed in the field for three sampling sites. The forms included here are copies of forms written in the field. The original forms are on file in our office.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: San Luis Ranch City/County: San Luis Obispo, CA Sampling Date: 4/30/15

Applicant/Owner: MI San Luis Ranch, LLC State: CA Sampling Point: DA1

Investigator(s): Jacqueline Tilligkeit and Jeremy Pohlman Section, Township, Range: T31S R12E Sec5

Landform (hillslope, terrace, etc.): drainage bottom Local relief (concave, convex, none): concave Slope (%): 1-2

Subregion (LRR): LRRC Lat: 35.25724 Long: -120.68354 Datum: WGS84

Soil Map Unit Name: Cropley clay NWI classification: FW Forest/Shrub

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:

Naturally problematic soil and hydrology and abnormal circumstances due to 4th consecutive drought year.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: none)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: none)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 9 sq meters)			
1. nothing identifiable			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: none)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 99 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

lack of vegetation at bottom of drainage

SOIL

Sampling Point: DA1

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
1-4	10YR 2/1	97	10YR 4/6	1	C	PL	C	
			10YR 5/8	2	C	PL		
4-10	10YR 2/1	89	10YR 6/8	7	C	PL	C	
			10YR 3/6	1	C	PL		
			2.5/5PB	3	D	M		
10-14	10YR 2/1	50	10YR 5/6	20	C	PL	SC	sandy, gravelly, alluvium?
			7.5YR 5/8	5	C	PL		
			10YR 4/2	25	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: none

Depth (inches): >14 inches

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ✓ 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)
- ___ 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): >14 inches

Water Table Present? Yes ___ No ✓ Depth (inches): >14 inches

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): >14 inches

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

In bed of channel, biotic crust nearby in similar vegetation cover and soil type. Deep soil cracks from shrink/swell.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: San Luis Ranch City/County: San Luis Obispo, CA Sampling Date: 4/30/15

Applicant/Owner: MI San Luis Ranch, LLC State: CA Sampling Point: PC01

Investigator(s): Jacqueline Tilligkeit and Jeremy Pohlman Section, Township, Range: T31S R12E Sec5

Landform (hillslope, terrace, etc.): terrace between banks Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): LRRC Lat: 35.25710 Long: -120.68356 Datum: WGS84

Soil Map Unit Name: Salinas silty clay loam NWI classification: FW Forest/Shrub

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:

Naturally problematic soil and hydrology and abnormal circumstances due to 4th consecutive drought year.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 9 sq meters)	Absolute % Cover	Dominant Species?	Indicator Status
1. Eucalyptus globerus	50	Y	UPL
2.			
3.			
4.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: none)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 9 sq meters)			
1. Phalaris aquatica	95	Y	FACU
2. Rumex crispus	7	N	FACW
3. Helminthotheca echiodes	1	N	FACU
4. Vicia sativa	5	N	FACU
5.			
6.			
7.			
8.			
	108	= Total Cover	
Woody Vine Stratum (Plot size: none)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	7	x 2 =	14
FAC species	0	x 3 =	0
FACU species	101	x 4 =	404
UPL species	50	x 5 =	250
Column Totals:	158 (A)		668 (B)

Prevalence Index = B/A = 4.23

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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: PC01

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					SiC	
4-9	10YR 2/1	95	10 YR 6/8	3	C	PL	SiC	
			10YR 5/8	2	C	PL		
9-14	10YR 2/1	50	10YR 5/8	10	C	PL	SiC	
	10YR 3/2	40						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: none

Depth (inches): >14 inches

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ✓ 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)
- ___ 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): >14 inches

Water Table Present? Yes ___ No ✓ Depth (inches): >14 inches

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): >14 inches

Wetland Hydrology Present? **Yes** ✓ **No** ___

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

Remarks:

adjacent to bed, between OHW

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: San Luis Ranch City/County: San Luis Obispo, CA Sampling Date: 4/30/15

Applicant/Owner: MI San Luis Ranch, LLC State: CA Sampling Point: PC02

Investigator(s): Jacqueline Tilligkeit and Jeremy Pohlman Section, Township, Range: T31S R12E Sec5

Landform (hillslope, terrace, etc.): terrace between banks Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): LRRC Lat: 35.25724 Long: -120.68354 Datum: WGS84

Soil Map Unit Name: Salinas silty clay loam NWI classification: FW Forest/Shrub

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:

Naturally problematic soil and hydrology and abnormal circumstances due to 4th consecutive drought year.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: none)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: none)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 9 sq meters)			
1. Persicaria amphibia	100	Y	OBL
2. Conium maculatum	5	N	FACW
3. Raphanus sativa	2	N	UPL
4. Vicia sativa	1	N	FACU
5.			
6.			
7.			
8.			
	108 = Total Cover		
Woody Vine Stratum (Plot size: none)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

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 100	x 1 = 100
FACW species 5	x 2 = 10
FAC species 0	x 3 = 0
FACU species 1	x 4 = 4
UPL species 2	x 5 = 10
Column Totals: 108 (A)	124 (B)

Prevalence Index = B/A = 1.15

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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: PC02

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	89	5YR 4/6	5	C	PL	SiC	
			10 YR 3/4	5	C	PL		
			10YR 5/8	1	C	PL		
6-14+	10YR 2/1	75	10YR 6/6	10	C	PL	SiC	
			10YR 5/8	10	C	PL		
			5YR 2.5/1	5	D	M	SiC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: none

Depth (inches): >14 inches

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ✓ 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)
- ___ 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): >14 inches

Water Table Present? Yes ___ No ✓ Depth (inches): >14 inches

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): >14 inches

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

adjacent to bed, between OHW

Exhibit B – Climate Data

- Western Regional Climate Data from Station 0047851 – San Luis Obispo Polytech – 1893 to 1/20/2015
- WETS data from Station 06079 – San Luis Obispo County – CPSU 1971-2000
- CIMIS data from SLO 52 – CPSU 1986-2014
- CIMIS monthly report for SLO 52 – CPSU June 2014 – May 2015

Western Regional Climate Center, wrcc@dri.edu

SAN LUIS OBISPO POLYTECH, CALIFORNIA (047851)

Period of Record Monthly Climate Summary

Period of Record : 02/01/1893 to 01/20/2015

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	62.3	63.5	64.8	66.6	69.0	72.7	76.0	76.8	77.0	75.3	69.6	63.5	69.8
Average Min. Temperature (F)	41.3	42.8	43.8	44.5	46.7	49.2	52.6	51.6	51.2	49.6	45.5	42.0	46.7
Average Total Precipitation (in.)	4.96	4.61	3.37	1.53	0.43	0.12	0.02	0.04	0.25	0.92	2.14	4.01	22.40
Average Total SnowFall (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.
Max. Temp.: 96.3% Min. Temp.: 96.3% Precipitation: 96.2% Snowfall: 96.2% Snow Depth: 96.2%
Check Station Metadata or Metadata graphics for more detail about data completeness.

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http://www.wrcc.dri.edu/cgi-bin/cliRECtM.pl?ca7851 5/31/2015

06079 - San Luis Obispo County - CPSU 71-2000

WETS Station : SAN LUIS OBISPO POLYTEC, CA7851 Creation Date: 08/29/2002
Latitude: 3518 Longitude: 12040 Elevation: 00310
State FIPS/County(FIPS): 06079 County Name: San Luis Obispo
Start yr. - 1971 End yr. - 2000

	Temperature (Degrees F.)			Precipitation (Inches)				
					30% chance will have		avg # of days	
Month	avg daily max	avg daily min	avg	avg	less than	more than	w/.1 or more	avg total snow fall
January	63.8	42.0	52.9	5.36	1.71	6.39	6	0.0
February	65.2	43.7	54.5	5.54	1.98	6.67	6	0.0
March	65.8	44.3	55.0	4.39	2.03	5.53	6	0.0
April	69.2	45.3	57.3	1.34	0.43	1.63	2	0.0
May	71.3	47.4	59.4	0.49	0.00	0.44	1	0.0
June	75.8	50.5	63.2	0.09	0.00	0.04	0	0.0
July	78.8	52.7	65.8	0.03	0.00	0.00	0	0.0
August	80.3	53.3	66.8	0.09	0.00	0.00	0	0.0
September	79.7	52.8	66.3	0.49	0.00	0.44	0	0.0
October	76.5	49.7	63.1	1.04	0.24	1.32	1	0.0
November	70.3	45.1	57.7	2.14	0.63	2.57	3	0.0
December	65.1	41.5	53.3	3.61	1.46	4.44	4	0.0
Annual	-----	-----	-----	------	17.14	27.57	--	----
Average	71.8	47.4	59.6	------	------	------	--	----
Total	-----	-----	-----	24.62	------	------	29	0.0

GROWING SEASON DATES

	Temperature		
Probability	24 F or higher	28 F or higher	32 F or higher
	Beginning and Ending Dates Growing Season Length		
50 percent *	----------	12/20 to 12/20	> 365 days
	> 365 days	> 365 days	> 365 days
70 percent *	----------	12/20 to 12/20	> 365 days
	> 365 days	> 365 days	> 365 days

* Percent chance of the growing season occurring between the Beginning and Ending dates.

total 1948-2002 prcp

Station : CA7851, SAN LUIS OBISPO POLYTEC
------- Unit = inches

06079 - San Luis Obispo County - CPSU 71-2000 clip

yr	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec	annl
48							0.00	0.00	0.00	0.39	0.02	3.50	3.91
49	M1.94	2.41	5.68	0.11	0.58	0.04	0.00	0.00	0.00	0.00	2.23	3.85	16.84
50	4.89	3.88	1.41	2.53	0.17	0.00	0.46	0.00	0.03	2.12	2.38	3.25	21.12
51	3.42	1.31	1.03	1.48	0.13	0.00	M0.00	0.04	0.05	0.93	1.96	8.39	18.74
52	9.53	0.63	6.65	1.05	0.04	0.03	0.05	0.00	0.00	0.00	3.55	7.28	28.81
53	2.49	0.00	1.40	1.99	0.15	0.04	0.00	0.00	0.00	0.00	3.45	0.42	9.94
54	6.10	3.50	4.90	1.28	0.09	0.03	0.00	0.00	0.00	0.00	2.77	3.10	21.77
55	5.62	1.96	0.18	2.67	0.99	M0.01	0.00	0.01	0.00	0.00	1.93	10.88	24.25
56	6.51	1.46	0.01	3.51	0.85	0.00	0.00	0.00	0.00	0.65	0.00	0.49	13.48
57	4.64	3.92	1.17	3.30	1.57	0.24	0.00	0.00	0.00	1.68	0.55	4.23	21.30
58	3.78	8.97	8.40	6.51	0.23	0.00	0.00	0.00	0.95	0.00	M0.28	0.18	29.30
59	2.69	6.60	0.00	0.95	0.07	0.00	0.00	0.00	0.73	0.00	0.00	0.60	11.64
60	4.23	6.85	1.52	1.94	0.04	0.00	0.00	0.00	0.00	0.22	3.76	1.67	20.23
61	1.97	0.91	1.74	0.49	0.33	0.04	0.01	0.00	0.01	M0.00	M4.60	2.14	12.24
62	2.88	13.96	2.16	0.13	0.04	0.06	0.00	0.00	0.00	1.52	M0.04	2.73	23.52
63	3.56	8.08	4.61	3.84	0.33	0.09	0.00	0.00	0.19	1.94	4.09	0.15	26.88
64	3.01	0.12	2.10	1.69	1.03	0.37	0.02	0.00	0.10	1.43	3.79	5.78	19.44
65	4.10	0.42	2.29	3.91	0.00	0.00	0.00	0.00	0.00	0.00	7.80	3.23	21.75
66	1.81	1.15	0.29	0.12	0.00	0.01	0.15	0.00	1.11	0.00	4.40	7.70	16.74
67	6.04	0.58	6.38	6.90	0.36	0.13	0.00	0.00	1.20	0.00	3.83	3.05	28.47
68	2.43	2.07	3.70	1.31	0.35	0.00	0.00	0.00	0.01	3.08	2.10	3.92	18.97
69	24.63	15.16	1.88	3.72	0.00	0.03	0.00	0.00	0.10	0.62	0.89	1.73	48.76
70	7.28	1.42	4.11	0.18	0.00	0.07	0.00	0.00	0.00	0.11	6.02	8.51	27.70
71	1.89	0.42	0.73	1.56	1.22	0.00	0.00	0.00	0.19	0.36	2.00	7.03	15.40
72	1.03	0.86	0.00	0.89	0.06	0.00	0.04	0.00	0.00	2.72	6.79	2.00	14.39
73	13.83	9.67	4.94	0.00	0.02	0.00	0.00	0.00	0.07	2.18	3.55	4.90	39.16
74	8.17	0.32	8.97	2.81	0.00	0.00	0.02	0.00	0.00	1.96	0.75	4.93	27.93
75	0.26	8.35	5.90	2.00	0.00	0.00	0.00	0.00	0.02	2.23	0.36	0.18	19.30
76	0.01	4.17	2.54	0.88	0.00	0.03	0.00	1.41	3.87	0.50	1.03	2.49	16.93
77	2.01	0.08	2.13	0.06	3.29	0.00	0.00	0.00	0.03	0.05		8.49	16.14
78	15.76	10.71		4.37	0.00	0.07	0.00		1.18	0.00	2.43	2.24	36.76
79	4.62	5.99	4.03	0.24	0.00	0.00	0.00	0.00	0.20	1.28	1.21	4.84	22.41
80	9.52	11.91		0.70	0.43	0.00	0.29		0.00	0.00	0.01	2.10	24.96
81	6.40	2.15	7.48	0.34	0.00	0.00	0.00	0.00	0.00	1.59	2.97	M2.04	22.97
82	5.87	1.65	8.89	4.12	0.01	0.17	0.00	0.00	1.19	1.74	6.28	4.97	34.89
83	10.05	10.53	8.61	3.30	0.61	0.00	0.00	0.91	0.15	2.47		6.72	43.35
84	0.18	0.97	1.02	0.82	0.00	0.00	0.00	0.08	0.00	1.27	3.61	3.76	11.71
85	0.72		3.07	0.30	0.02	0.00	0.04	0.02	0.04	1.05	M4.39	2.03	11.68
86	2.65	11.79	7.26	0.16	0.00		0.01	0.00	M1.14	0.00	0.28	1.51	24.80
87	2.48	2.75	2.43									4.95	12.61
88	2.87	2.67	1.29		0.27	M0.18	0.02	0.00		0.00	1.85	8.08	17.23
89	0.98	1.62	2.30	0.67	0.32	0.00	0.00	0.00	1.69		0.55	0.00	8.13
90		2.98	0.70	0.48	1.42	0.00	0.00	0.00	0.56		0.36	0.43	6.93
91	0.81	2.34	12.82	0.43	0.00	0.80	0.00	0.07	0.00	0.44	0.58	4.49	22.78
92	3.43	9.84	3.15	0.10	0.00	0.04	0.44	0.00	0.00	1.29	0.00	5.45	23.74
93	10.51	8.61	4.03	0.25	0.23	0.09	0.00	0.00	0.00	0.22	1.89	2.20	28.03
94	2.93	5.97	1.43	1.46	0.86	0.00	0.00	0.00	2.38	0.89	2.51	1.15	19.58
95	16.09	2.25	16.48	1.12	0.76	0.76	0.00	0.00	0.00	0.02	0.40	3.57	41.45
96	4.33	10.98	1.78	1.92	1.08	0.00	0.00	0.00	0.00	2.23	4.43	10.88	37.63
97	13.31	M0.46	0.00	0.05	0.00	0.00	0.05	0.01			5.84	5.32	25.04
98	6.86	M15.07	3.79	3.58	3.41	0.05	0.00	0.00	0.35	0.37	1.88	1.22	36.58
99	3.62	2.37	5.19	2.07	0.00	0.00	0.00	0.00	0.13	0.00	1.69	0.08	15.15
0	4.33	13.17	1.92	2.97	0.21	0.34	0.00	0.00	0.02	2.22	0.03	0.19	25.40
1	8.10	7.17	4.94	1.87	0.00	0.00	0.00	0.00	0.00	0.49	5.47	4.18	32.22
2													

CIMIS DATA - SLO 52				
1986 to 2014				
Rain Year (Jul-Jun)	Rainfall (in)	Ave Max Temp (F)	Ave Min Temp (F)	Ave Temp (F)
86-87	15.94	71.3	47.5	57.5
87-88	21.91	71.1	48.2	58.3
88-89	missing data	73.8	49.1	59.8
89-90	12.87	76.4	50.1	61.6
90-91	21.13	70.5	47.6	57.6
91-92	25.63	72.3	49.2	59.7
92-93	30.99	72.2	49.1	59.2
93-94	17.46	71.1	47.8	58.1
94-95	47.88	69.0	48.7	57.4
95-96	20.15	72.8	50.2	59.9
96-97	37.01	71.9	49.5	59.3
97-98	42.12	71.8	50.6	60.2
98-99	11.88	71.0	47.8	58.1
99-00	missing data	71.0	49.2	58.8
00-01	21.58	70.1	48.0	57.8
01-02	15.54	69.0	48.0	57.1
02-03	17.48	70.2	48.8	58.3
03-04	13.26	71.5	48.8	58.9
04-05	26.36	69.4	47.8	57.3
05-06	11.52	70.0	48.0	57.6
06-07	5.44	70.4	48.2	57.6
07-08	17.04	70.2	48.0	57.9
08-09	11.29	71.4	48.6	58.4
09-10	26.54	70.2	47.8	57.6
10-11	33.18	68.4	48.1	56.9
11-12	14.33	69.9	47.0	56.9
12-13	12.42	71.1	47.7	57.8
13-14	8.93	73.1	48.1	59.0
Average	**20.76**	**71.1**	**48.5**	**58.4**
Note Precipitation in 88-89 and 99-00 were excluded due to significant anomalies in the data.				

California Irrigation Management Information System (CIMIS)

CIMIS Monthly Report

Rendered in ENGLISH Units.

June 2014 - May 2015

Printed on Monday, June 01, 2015

San Luis Obispo - Central Coast Valleys - Station 52

Month Year	Total ETo (in)	Total Precip (in)	Avg Sol Rad (Ly/day)	Avg Vap Pres (mBars)	Avg Max Air Temp (°F)	Avg Min Air Temp (°F)	Avg Air Temp (°F)	Avg Max Rel Hum (%)	Avg Min Rel Hum (%)	Avg Rel Hum (%)	Avg Dew Point (°F)	Avg Wind Speed (mph)	Avg Soil Temp (°F)
Jun 2014	6.35	0.00	692	12.1	73.1	50.2	60.0	89	48	69	49.6	3.1	69.4
Jul 2014	6.24 K	0.00	608	14.6	78.5	55.7 K	65.5 K	88	47	68	54.7	2.8	72.3
Aug 2014	5.86 K	0.00	576	14.5	78.3 K	55.6 L	64.7	89	47	70	54.5	2.9	72.7
Sep 2014	4.76	0.00	498	15.4	78.3 L	54.7 L	64.3	93	50	75	56.1	2.9	70.9 K
Oct 2014	4.45 K	0.94 K	395 K	12.7 K	81.2 K	55.3 K	67.2 K	81 K	37 K	60 L	50.6 L	3.6 K	67.7 K
Nov 2014	2.63	0.48 K	273 K	11.0 K	73.1 K	50.5	60.4 K	84 K	40 K	62	46.4	3.3 K	61.8 K
Dec 2014	1.80	5.49 K	199 K	11.8 K	65.1	48.1 K	56.3 K	90	56	74 K	47.7 K	3.3	58.1 K
Tots/Avgs	32.09	6.9	463	13.2	75.4	52.9	62.6	88	46	68	51.4	3.1	67.6

San Luis Obispo - Central Coast Valleys - Station 52

Month Year	Total ETo (in)	Total Precip (in)	Avg Sol Rad (Ly/day)	Avg Vap Pres (mBars)	Avg Max Air Temp (°F)	Avg Min Air Temp (°F)	Avg Air Temp (°F)	Avg Max Rel Hum (%)	Avg Min Rel Hum (%)	Avg Rel Hum (%)	Avg Dew Point (°F)	Avg Wind Speed (mph)	Avg Soil Temp (°F)
Jan 2015	2.86	0.12 K	282	9.4	71.8 K	45.4 K	57.3 K	84	35	59 K	42.2 K	3.8	54.7
Feb 2015	2.68 K	2.33 K	323 K	11.7 K	69.8 K	47.4 K	58.1	91	51	72 K	48.3 K	3.2 K	58.9 K
Mar 2015	4.88 K	0.00 K	473 K	10.9 K	76.3 K	48.5 K	61.4 K	87 K	37 K	60 K	46.6 K	3.5 K	61.1 K
Apr 2015	5.39	1.30 K	567 K	10.0 K	71.3	47.0	58.2	89	39	62 K	44.0 K	3.4	62.2
May 2015	5.13	0.17	575	12.0	67.4	49.7	57.2	91	56	75	49.3	3.0	65.3
Tots/Avgs	20.94	3.9	444	10.8	71.3	47.6	58.4	88	44	66	46.1	3.4	60.4

Flag Legend	
M - All Daily Values Missing	K - One or More Daily Values Flagged
J - One or More Daily Values Missing	L - Missing and Flagged Daily Values

Conversion Factors		
W/sq.m = Ly/day/2.065	inches * 25.4 = mm	(F-32) * 5/9 = c

California Red-legged Frog

(*Rana draytonii*)

Protocol Survey Site Assessment

for

San Luis Ranch

San Luis Obispo County
California

Prepared for

San Luis Ranch
c/o Coastal Community Builders, Inc.
P.O. Box 13
Pismo Beach, CA 93449

By

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES
1602 Spring Street
Paso Robles, CA 93446
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April 2015

847.06

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Cover Photo: Pool in Prefumo Creek in the southern portion of the Study Area. Photo taken March 10, 2015.

1.0 Introduction

This report presents the results of a protocol level site assessment survey for the California red-legged frog (CRLF) conducted for the San Luis Ranch project in San Luis Obispo County. The California red-legged frog is a federally listed threatened species that occurs in drainages and ponds in San Luis Obispo County, and elsewhere in California. This site assessment evaluates habitats on and near an approximately 131-acre agricultural property for potential upland and aquatic habitat that could support CRLF.

The information in this protocol survey site assessment report is presented according to the current United States Fish and Wildlife Service (USFWS) publication, "Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog" (USFWS 2005). This report is being submitted to USFWS per Section III of the protocol to facilitate further guidance regarding the need for additional protocol level surveys.

1.1 Project Location and Description

The proposed mixed-use project site is located on 131 acres at 1035 Madonna Road, in the City of San Luis Obispo, California, near the intersection of Madonna Road and Dalidio Drive (Figure 1). Approximate coordinates for the center of the project site are 35.25638° N, 120.67944° W (WGS84) in the San Luis Obispo United State Geological Survey (USGS) 7.5' topographic quadrangle. Elevation ranges from approximately 120 to 140 feet above sea level. The proposed project is a mixed-use development consisting of about 67 acres of new residential and commercial land uses, about 8 acres of new and expanded roadways, and about 56 acres of existing agricultural land uses and conserved/enhanced natural habitat.

2.0 Site Assessment for the California Red-legged Frog

2.1 Methods

An assessment of potential CRLF habitat within and near the project site was conducted by Althouse and Meade, Inc. Principal Scientist LynneDee Althouse and Biologist Kyle Weichert on March 10, March 11 and March 18, 2015. The site assessment field work consisted of a day-time walking survey of all drainages at the project site, including Prefumo Creek and an agricultural drainage ditch. Notes and photographs were taken regarding potential CRLF habitat on and immediately adjacent to the project site.

United States Geological Survey (USGS) topographic maps and high resolution aerial photographs of the vicinity were reviewed to locate potential CRLF habitat within one mile of the Study Area. Maps and aerial photographs are included in Section 4.0. Photographs were taken throughout the Study Area, and a representative set of photos is included in Section 5.0. Previous biological reports from the region, both published and unpublished, were reviewed for information on red-legged frog site assessments and presence/absence survey results (Althouse and Meade, Inc. June 2004; Althouse and Meade, Inc. July 2004; Althouse and Meade, Inc. 2005; Althouse and Meade, Inc. July 2005a; Althouse and Meade, Inc. July 2005b; Althouse and Meade, Inc. September 2005; Althouse and Meade, Inc. September 2006; Althouse and Meade, Inc. August 2007; Althouse and Meade, Inc. October 2007; Rincon Consultants, Inc. 2005).

The California Natural Diversity Database (CNDDB) (CNDDB March 23, 2015 data query) was reviewed for CRLF occurrences in the region, and current and historic specimen data from the Museum of Vertebrate Zoology (MVZ), the California Academy of Sciences (CAS) and the Santa Barbara Museum of Natural History (SBMNH) were reviewed for information regarding CRLF in the region.

2.2 Is the Study Area within the Current or Historic Range of the CRLF?

The Study Area, consisting of approximately 1,850 linear feet of Prefumo Creek, a drainage ditch tributary and adjacent uplands (Figure 2), is situated within the currently described range of the California red-legged frog, which extends primarily in coastal regions from Mendocino County south into northern Baja, Mexico.

San Luis Obispo County contains populations of CRLF in drainages throughout the Santa Lucia Mountains, on both the coastal slope and inland drainages. Red-legged frogs occur on the coastal slope along the length of the County. Reports are most numerous in the area between San Simeon and Morro Bay, are lacking in the Port San Luis, and are sporadic in watersheds from the vicinity of Avila Beach south to Guadalupe. Inland, red-legged frogs occur through the Chorro Valley to the City of San Luis Obispo, east through the Los Padres National Forest to the upper Salinas River watershed at Pozo (critical habitat unit SLO-8), and north into the Santa Margarita Valley. CRLF are increasingly uncommon within the Salinas Valley north through Templeton, and have not been reported from Paso Robles or San Miguel.

Red-legged frogs do not occur in the arid interior region of the County, except for a population within the San Andreas Rift Zone and Cholame Valley in the far northeast corner of the County (critical habitat areas SLO-1a and SLO-1b).

2.3 Known Localities of CRLF

2.3.1 Database and literature review

The database and literature review conducted for this assessment includes records for the CRLF from three sources. First, we reviewed the CNDDB for CRLF records within at least five miles of the Study Area. This search examined records in the San Luis Obispo, Lopez Mtn., Morro Bay South, Port San Luis, Pismo Beach and Arroyo Grande NE USGS 7.5 minute quadrangles. The results of this search form the basis for our database review. The nearest CNDDB record is located approximately 0.3 miles south of the Study Area (Table 1).

Second, the Museum of Vertebrate Zoology (MVZ) at the University of California, Berkeley and the California Academy of Sciences (CAS) in San Francisco maintain on-line databases of specimen records. These databases were accessed on March 23, 2015. A specimen query for CRLF in San Luis Obispo County resulted in 10 specimen records from MVZ and 33 specimen records from CAS. Numerous specimens are from the same locality. Specimen records identified from the museum search account for seven localities within five miles of the Study Area that are not included in the CNDDB. The nearest museum record is located on the eastern edge of the Study Area, but was placed there with poor locality information.

Third, consultant reports, published and unpublished, were reviewed for information about the distribution of CRLF in the San Luis Obispo area (refer to Sections 2.1 and 3.0). The nearest

record identified from consultant reports that is not a CNDDB record is located approximately 3.4 miles southeast of the Study Area.

Information is provided in Table 1 for all CRLF records reported within five miles of the Study Area. The record number, location, date, approximate distance from the Study Area, and data source are provided.

2.3.2 Reports of CRLF within 1.6 kilometers (1 mile) of the Study Area

Our research located one CNDDB occurrence and two CAS collections within 1.6 kilometers (1 mile) of the Study Area. CNDDB occurrence #895 is a 2006 report from the confluence of Prefumo Creek and San Luis Obispo Creek, about 0.3 miles south of the Study Area, where three individuals were observed in 2006. CAS #57631 and #57632 are 1923 collections with limited locality data, reported as approximately 2.5 miles south of San Luis Obispo. Estimated location is near the eastern edge of the project site.

2.3.3 Reports of CRLF within 8 kilometers (5 miles) of the Study Area

Our research located ten CNDDB occurrences, thirteen CAS collections and three MVZ collections within 8 kilometers (5 miles) of the Study Area. Several records are from the Camp San Luis Obispo area between 4.3 and 4.8 miles northwest of the Study Area (CAS #210393, CNDDB #453, #836, #838, and #839). MVZ #31611 and #31612, and CNDDB #1341 are from Brizziolari Creek in Poly Canyon, 4.1-4.6 miles north of the Study Area. Several records are from the Reservoir Canyon area between 3.5 and 4.1 miles northeast of the Study Area (MVZ #59685, CNDDB #155, #156, #157, #639, and #245). CAS #43285-43296 are 1917 collections from approximately 4.9 miles southeast of the Study Area, in an area described as "Edna, Rancho Corral de Piedra." Another record exists in the Edna area in Davenport Creek near the San Luis Obispo Country Club, approximately 3.4 miles southwest of the Study Area (Rincon Consultants, Inc. 2005).

TABLE 1. CRLF RECORDS. Seventeen CRLF localities were determined to be within five miles of the Study Area. The approximate distance from the Study Area is provided for each record.

Record No.	Location	Date	Approx. Distance from the Study Area	Source
CAS #57631 and #57632	2.5 miles south of San Luis Obispo	July 4, 1923	Undetermined	CAS, Collected by J. Vindum
CNDDB #895	Just north of the confluence of Prefumo Creek and San Luis Obispo Creek	Aug. 9, 2006	0.5 miles	CNDDB Record, Reported by B. Langle
CNDDB #156	Tributary to San Luis Obispo Creek flowing under Hwy 101; approx. 0.06 miles southeast of Hwy 101 and Fox Hollow Rd.	May 31, 1995	3.4 miles	CNDDB Record, Reported by R. Schmieder and C. Striplen
Rincon 2005	Davenport Creek near the San Luis Obispo Country Club, Edna Valley	2005	3.4 miles	Rincon Consultants, Inc. 2005, unpublished report, Reported by J. Davis and W. Knight
CNDDB #639	Reservoir in Reservoir Canyon, San Luis Obispo	1991	3.5 miles	CNDDB Record, Reported by M. Hanson
CNDDB #245	Reservoir Canyon, vicinity of San Luis Obispo Creek, east of San Luis Obispo	Nov. 19, 1996	3.6 miles	CNDDB Record, Reported by J. Greven
CNDDB #155	Miossi Creek, 0.31-0.62 miles north of Hwy 101, approx. 1.4 km east of California Polytechnic State University	May 18, 1995; Oct. 1, 1998	3.6 miles	CNDDB Record, Reported by R. Schmieder, K. Glinka, and M. Cassady
CNDDB #157	Tributary to Reservoir Canyon Creek; approximately 2.49 miles east of San Luis Obispo	May 1, 1995	4.0 miles	CNDDB Record, Reported by R. Schmieder and K. Glinka
MVZ #59685	Reservoir Canyon, 2 miles east of San Luis Obispo	May 3, 1953	4.1 miles	MVZ, Collected by R. Zweifel, Identified by V. Vredenburg
Occ. #1341	Brizziolari Creek in Poly Canyon, just north & northeast of California Polytechnic State University, 2 mi north of San Luis Obispo	Jun. 19, 1939	4.1 miles	CNDDB Record, Reported by R.R. Miller (MVZ Collection)
Occ. #453	Chorro Creek between Salinas Street and Santa Cruz Rd bridge (near Riverside Street), Camp San Luis Obispo	May 15, 1997; May 13, 2008	4.3 miles	CNDDB Record, Reported by Camp San Luis Obispo
CAS #210393	Chorro Creek, 1.4 km N of Chumash Peak, between State Prison and Hwy 1, Camp San Luis Obispo	Jun 1, 1998	4.4 miles	CAS, Collected by N.J. Scott, Jr.

Record No.	Location	Date	Approx. Distance from the Study Area	Source
MVZ #31612 and #31611	Brizziolari Creek in Poly Canyon, 2 miles north of San Luis Obispo	Jun. 19, 1939	4.6 miles	MVZ, Collected by R.R. Miller, Identified by Vance T. Vredenburg
Occ. #836	Chorro Crk, 0.25 mi NE of Kern Ave, NW Of Calif Mens Colony, Camp San Luis Obispo	1997; 2007	4.8 miles	CNDDB Record, Reported by Camp San Luis Obispo
Occ. #838	Lower Chorro Creek & un-named tributary, 630 m upstream of Hwy 1 bridge in the East Cantonment area, Camp San Luis Obispo	1996; Jun 6, 2007	4.8 miles	CNDDB Record, Reported by Camp San Luis Obispo
Occ. #839	Unnamed tributary to Chorro Creek along Kern Avenue SW of San Benito Rd, Camp San Luis Obispo	1996; 2008	4.8 miles	CNDDB Record, Reported by Camp San Luis Obispo
CAS #43285-43296 12 specimens	Edna, Rancho Corral De Piedra, San Luis Obispo Co.	May 1, 1917	4.9 miles	CAS, Collected by J. Van Denburgh and J. Slevin

2.4 Available Habitat on and in the Vicinity of the Study Area

2.4.1 Habitat description in the Study Area

Approximately 1,850 linear feet of Prefumo Creek flows along the western edge of the Study Area. It flows south from Laguna Lake, under Madonna Road, and eventually meets San Luis Obispo Creek about 0.8 miles downstream of the Study Area. Riparian habitat in the creek is dominated by arroyo willow (*Salix lasiolepis*) and includes several large non-native trees such as Canary Island date palm (*Phoenix canariensis*).

Along the upper 1,800 feet, the eastern bank is lined with mature blue gum eucalyptus trees. The western bank borders private residences and contains occasional ornamental shrubs and trees. The creek bed of this reach was dry at the time of the March 10, 2015 site visit and is primarily vegetated with ruderal and invasive forbs such as periwinkle (*Vinca major*), bristly ox-tongue (*Helminthotheca echioides*), and annual grasses (Photo 2). Patches of wetland species such as tules (*Schoenoplectus* sp.) are present intermittently throughout the creek bed. Sporadic patches of exposed gravelly and rocky creek bed are present as well as several large broken concrete slabs. The upper reach of Prefumo Creek that borders the Study Area is often seasonally dry, and water flow is subsurface during summer months. Habitat in this area may be suitable for transient CRLF during years of above average rainfall amounts.

One pool with standing water was present in the portion of Prefumo Creek that borders the Study Area (Photo 3). The pool was approximately 15 feet wide, 30 feet long, and 2 to 3 feet deep. This pool contained marginal habitat that could support CRLF but will likely dry up in late spring.

An approximately 1,650 linear foot ephemeral drainage runs northeast to southwest within the eucalyptus forest in the Study Area and meets Prefumo Creek about 700 feet south of Madonna Road. The northeastern portion of this drainage is dominated by riparian habitat consisting of arroyo willow (*Salix lasiolepis*) red ironbark (*Eucalyptus sideroxylon*), umbrella sedge (*Cyperus eragrostis*), poison hemlock (*Conium maculatum*), and Harding grass (*Phalaris aquatica*). The western portion of this drainage is dominated by ruderal and non-native forbs such as Bermuda buttercup (*Oxalis pes-caprae*) and annual grasses such as ripgut brome (*Bromus diandrus*; Photo 4). This drainage was dry at the time of the March 10, 2015 site assessment survey and likely does not hold water for extended periods of time. Appropriate breeding habitat for CRLF is not present in this drainage; however, seasonal habitat for transient individuals to utilize for foraging or movement is present.

2.4.2 Habitat description within 1.6 kilometers (1 mile) of the Study Area

The lower reach of Prefumo Creek, starting about 1,800 feet downstream of Madonna Road and directly south of the Study Area, consists of thick arroyo willow dominated riparian habitat and contained a series of pools separated by slow-moving channels and tangles of vegetative debris. About 1,100 linear feet of this lower reach was surveyed during the March 18, 2015 site assessment. Eleven pools holding water were identified within this area. The pools ranged from approximately 10 to 20 feet wide and contained water from one to five feet deep. Substrate in these pools consists of layers of vegetative litter and woody debris. Downed tree limbs and the roots of the trees lining the creek create structure along the margins of the pools. Sierran treefrogs (*Pseudacris sierra*) and several large fish were observed within pools in the lower reach.

Other potential CRLF habitat near the Study Area includes Laguna Lake across Madonna Road to the north, San Luis Obispo Creek located about 500 feet east across Highway 101, and several freshwater ponds near San Luis Obispo Creek. These areas include mature riparian and pond habitat with emergent vegetation. Other hydrologically connected drainages are present within one mile of the Study Area that may contain suitable habitat for CRLF.

2.5 Discussion

The Study Area is within the known range of CRLF and located in an area that could be reached by dispersing or migrating CRLF from the San Luis Obispo Creek watershed. San Luis Creek watershed has been known to harbor CRLF within the last ten years (CNDDB #895).

Based on March 2015 site visits, the ephemeral drainage in the Study Area and the on-site reach of Prefumo Creek are suitable habitat for seasonal CRLF movement or short duration utilization. One pool within the Study Area contains marginal pooling habitat for breeding CRLF. However, the reach of Prefumo Creek directly downstream from the Study Area contains appropriate pool habitat suitable for breeding CRLF. Tree frogs and fish were observed in these pools and the channels that connect them. California red-legged frogs were not observed during the March 2015 visits.

3.0 References

Althouse and Meade, Inc. June 2004. Bowden Ranch - Pre-construction Survey for California Red-legged Frog. Letter to Hamish Marshall and John Wilson.

Althouse and Meade, Inc. July 2004. California Red-legged Frog (*Rana aurora draytonii*) Protocol Survey for a 200-acre property within La Quinta de Avila Ranch, See Canyon, San Luis Obispo County.

Althouse and Meade, Inc. 2005. Unpublished field notes.

Althouse and Meade, Inc. July 2005a. Biological Report for the proposed Righetti Agricultural Cluster Development, APN 044-051-028, San Luis Obispo County, California. Revised December 2008.

Althouse and Meade, Inc. July 2005b. Biological Assessment for Vesting Tentative Tract 2428, 27 acres of the 98 acre parcel, APN 076-331-015, City of San Luis Obispo, San Luis Obispo County, California.

Althouse and Meade, Inc. September 2005. Biological Assessment for the South Hills Open Space, San Luis Obispo County, California. Revised January 2006.

Althouse and Meade, Inc. September 2006. California Red-legged Frog (*Rana aurora draytonii*) Protocol Survey Site Assessment for Cold Canyon Landfill: Proposed Expansion, APN 044-261-047, -048, and -011, 2268 Carpenter Canyon Road, San Luis Obispo County, California.

Althouse and Meade, Inc. August 2007. California Red-legged Frog (*Rana aurora draytonii)* Protocol Survey for Cold Canyon Landfill: Proposed Expansion APN 044-261-047, -045, and -011, 2268, Carpenter Canyon Road, San Luis Obispo County, California.

Althouse and Meade, Inc. October 2007. California Red-legged Frog (*Rana aurora draytonii*) Protocol Survey for Vesting Tentative Tract 2755, See Canyon, San Luis Obispo County, California.

Althouse and Meade, Inc. 2014. Biological Constraints Report for San Luis Ranch, City of San Luis Obispo, San Luis Obispo County, California. August 11.

Bulger, John, Norman J. Scott Jr., & Richard B. Seymour. 1999. Terrestrial activity and conservation of adult California red-legged frogs *Rana aurora draytonii* in coastal forests and grasslands. Abstract.

California Academy of Sciences. 2007. California Academy of Sciences on-line Herpetology Collection Database. http://www.calacademy.org Web site accessed on March 23, 2015.

California Natural Diversity Database (CNDDB) Rarefind. 2015. The California Department of Fish and Game Natural Diversity Data Base, version 5. March 23, 2015 data.

Museum of Vertebrate Zoology, University of California, Berkeley. 2007. www.mvz.berkeley.edu. Web site accessed March 23, 2015.

Rincon Consultants, Inc. 2005. Personal communications with Rincon Consultants biologists John Davis and Wendy Knight.

U.S. Fish and Wildlife Service. 2002. Recovery Plan for the California Red-legged Frog. May 28, 2002.

U. S. Fish and Wildlife Service. 2005. Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frogs. August.

4.0 Figures

- Figure 1. Topographic Map
- Figure 2. CRLF Site Assessment Survey Map
- Figure 3. CRLF Localities

Figure 1. Topographic Map

Parcel

0 0.25 0.5 1 Miles

N W E S

San Luis Ranch

CNDDB Data from March 2015
2012 San Luis Obispo County
NAIP Aerial Photography
Map Updated: March 12, 2015, 11:56 AM

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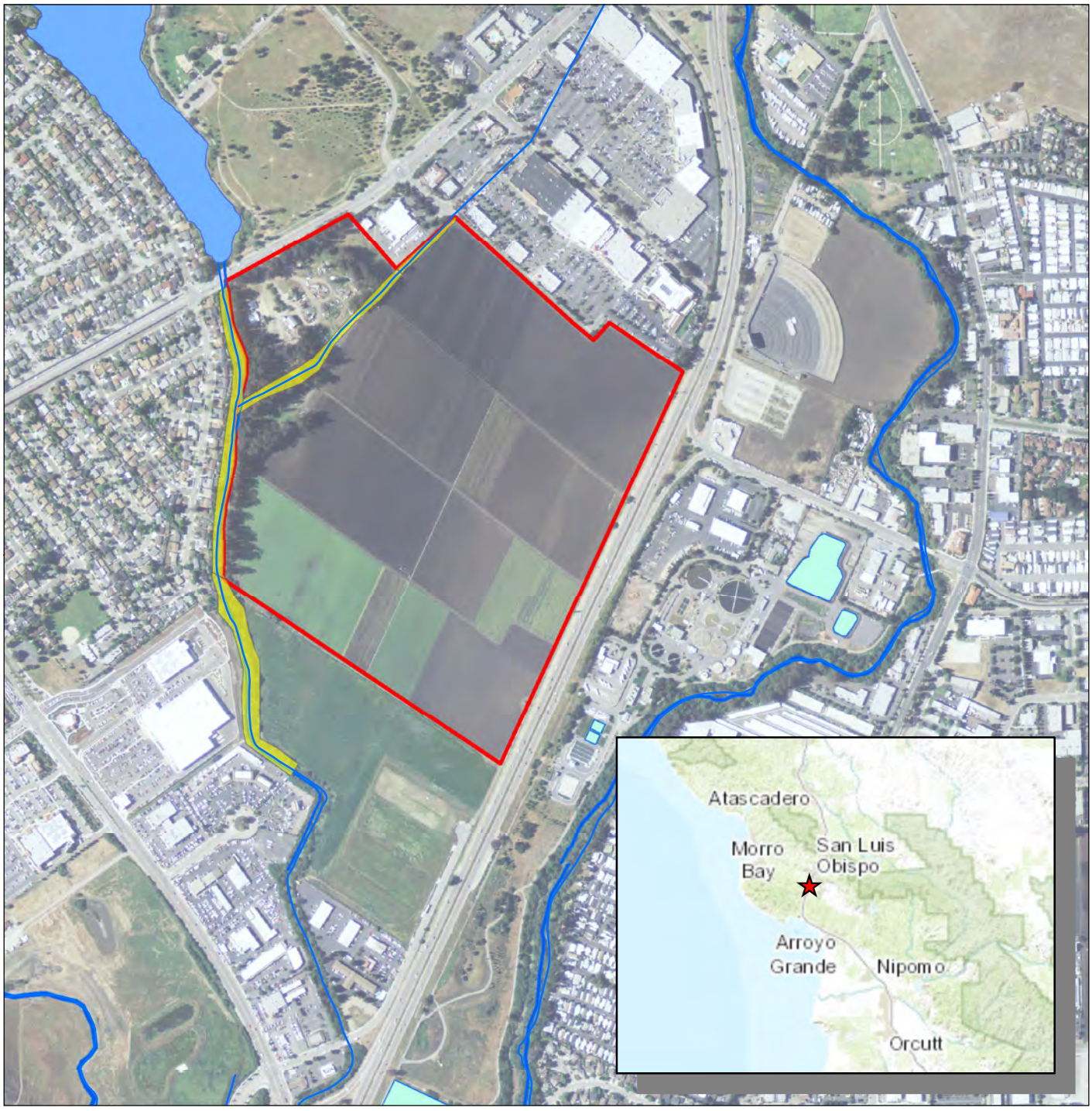
Figure 2. California Red-legged Frog Site Assessment Survey Map



Parcel
Surveyed Area
Stream/River
Lake
Freshwater Pond

0 0.1 0.2 0.4 Miles

N
W E
S

Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

San Luis Ranch

CNDDB Data from March 2015
2012 San Luis Obispo County
NAIP Aerial Photography
Map Updated: March 23, 2015, 02:41 PM

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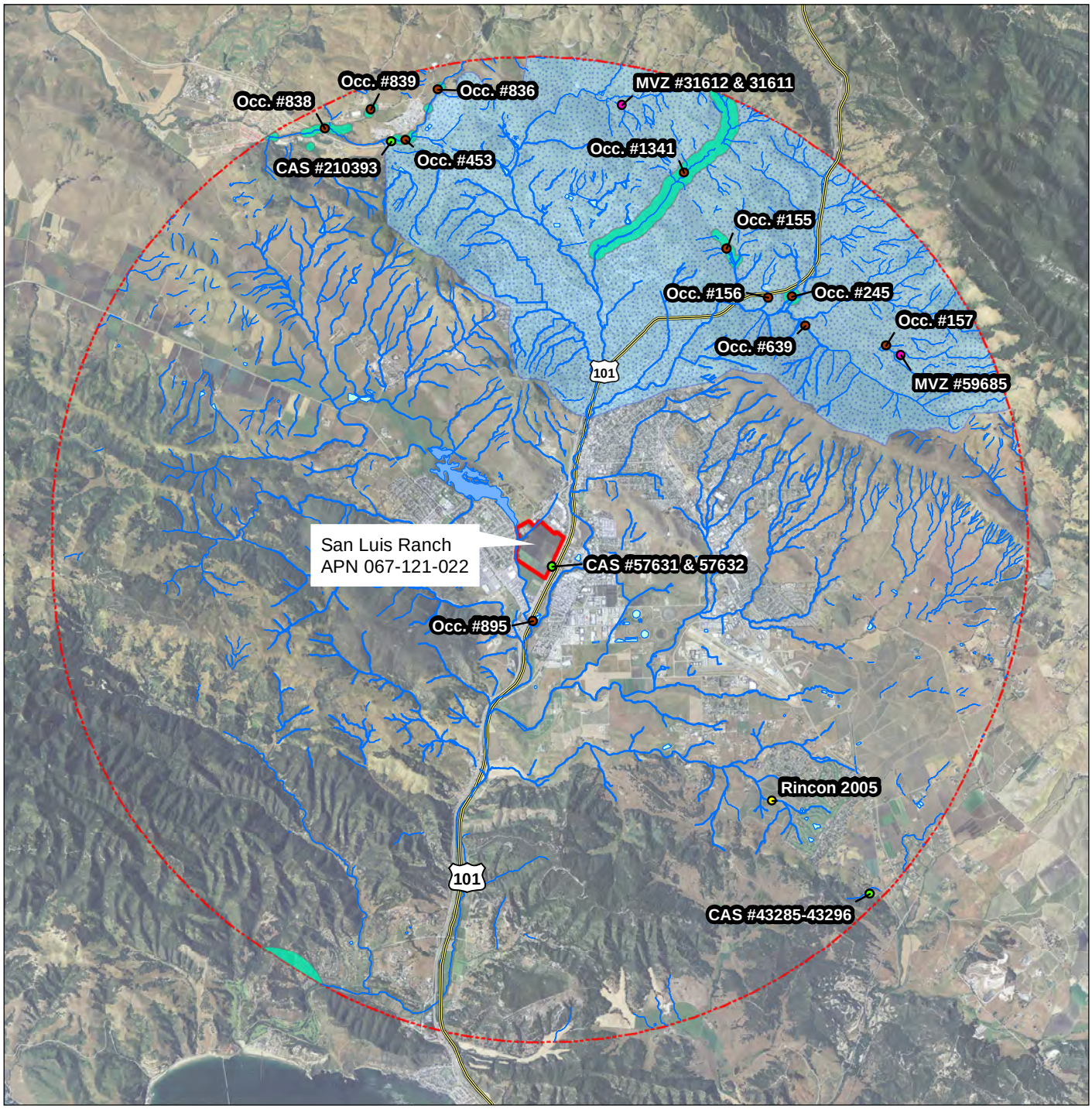
Figure 3. California Red-legged Frog Localities



California Red-legged Frog CNDDB Data
California Red-legged Frog CAS Data
California Red-legged Frog MVZ Data
California Red-legged Frog Observation Rincon 2005
Stream/River
Lake
Freshwater Pond
California Red-legged Frog Known Habitat
5-mile buffer
Parcel
California Red-legged Frog Critical Habitat

0 2 4 8 Miles

San Luis Ranch

CNDDB Data from March 2015
2012 San Luis Obispo County
NAIP Aerial Photography
Map Updated: March 20, 2015, 11:34 AM

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5.0 Photographs

Photo 1. Concrete channel where Prefumo Creek crosses under Madonna Rd. Taken 3/10/2015.

Photo 2. Representative photo of the bed of Prefumo Creek in the Study Area. Taken 3/10/2015.

Photo 3. Marginal pool habitat in Prefumo Creek in the southern portion of the Study Area. Taken 3/10/2015.

Photo 4. View east of the western portion of the ephemeral drainage that passes through the Study Area. Taken 3/10/2015.

Photo 5. View south of pool habitat in the downstream portion of Prefumo Creek. Taken 3/18/2015.

Photo 6. View north of pool habitat in the downstream portion of Prefumo Creek. Taken 3/182015.

Photo 7. View south of pool habitat in Prefumo Creek immediately downstream of the Study Area. Taken 3/18/2015.

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Memo

To: Dove Daniels

From: Cory Meyer

Date: February 2, 2016

Cc: Patrick Mock, Dan Meade

Re: San Luis Ranch Monarch Trees Inspection

A historic monarch butterfly (*Danaus plexippus*) overwintering site is located in a grove of blue gum eucalyptus (*Eucalyptus globulus*) on the east bank of Prefumo Creek within the proposed Project site at San Luis Ranch, San Luis Obispo, California. Eucalyptus that have been used as monarch aggregation trees were assessed for overall health and safety.

Methods

On January 12, 2016, Althouse and Meade, Inc. Certified Arborist Cory Meyer (WE 7678-A) assessed monarch aggregation trees in the southwest part of the property. Althouse and Meade, Inc. Biologist Jessica Griffiths, who has been counting the overwintering monarchs at the site this winter, identified the aggregation trees.

The trees were tagged with aluminum numbered tags. In addition to the numbered aluminum tags, a blue aluminum tag was added to identify it as a monarch butterfly habitat. This was done so as not to confuse these trees with other inventoried trees at the site.

Diameter at breast height (DBH) measurements were taken on each tree. All trees were evaluated on the criteria of health and structure with a rating system of 1 through 10, with 1 being poor and 10 being excellent.

Findings Summary

The site appears to have been neglected for some time. Poor tree health and structure can be attributed to lack of maintenance. There were nine eucalyptus trees identified as monarch aggregation trees, as of this survey. See Figure 1 (attached) for approximate tree locations. None of these trees received a rating better than 4 (see Table 1).

TABLE 1. RATING SCORES OF NINE SURVEYED MONARCH AGGREGATION TREES AT SAN LUIS RANCH.

Rating	Quantity
1	0
2	3
3	4
4	2

Biological Observations

There has been a tortoise beetle infestation, evidenced by chew marks on the eucalyptus leaves. The surveyed trees are on the edge of a clearing vegetated by non-native annual grass, or on the edge of a seasonal drainage that flows into Prefumo Creek. There is little understory directly under the eucalyptus trees, but poison oak is very prevalent at the site.

Recommendations

A rating score of 1 indicates a hazard tree that must be removed. None of the aggregation trees were scored as a 1, and so none pose an immediate safety risk. It is recommended that these nine trees remain in place for now. All nine surveyed trees may require pruning in the future. Tree #4 has an excessive lean and at a future date should be re-evaluated for potential removal. See the attached table for a complete list of trees, ratings, and recommendations.

Any pruning that takes place should be done after monarch butterflies have left the site, typically in March.

Attachments

- Photographs
- Figure – Monarch Tree Locations
- Summary and Recommendations Table

Photographs

Photo 1. Example of tagging monarch trees. Picture taken January 12, 2016.

Photo 2. Leaning eucalyptus monarch tree #4. View facing west, up seasonal drainage towards Prefumo Creek.

Photo 3. Evidence of tortoise beetles feeding on leaves.

Monarch Tree Locations

Monarch Trees 1 - 9

Parcel Boundary

0 500 1,000 2,000 Feet

San Luis Ranch
San Luis Obispo, CA

2014 San Luis Obispo County
NAIP Aerial Photography
Map Updated: January 28, 2016, 03:16 PM

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Summary of Results and Recommendations

Tree #	Trunk DBH	Tree Condition	Description	Recommendation
1	4; 17; 8	3	3 trunks	Trimming
2	9.5	2		Trimming
3	11.5	2		Trimming
4	15.5	2	Excessive lean	Potential future removal
5	21	3		Trimming
6	49	4	Leans	Trimming
7	47	4		Trimming
8	3	3		Trimming
9	18	3		Trimming

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(805) 237-9626 • Fax (805) 237-9181 • www.althouseandmeade.com

Memo

To: Dove Daniel

From: Jessica Griffiths

Date: June 21, 2016

Cc: Patrick Mock

Re: Results of 2015 and 2016 San Luis Ranch Heron Rookery Surveys

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This memo details the results of weekly breeding season surveys of the heron rookery located on San Luis Ranch in spring 2015 and spring 2016.

Site Description

A great blue heron (*Ardea herodias*) rookery is located in an approximately 1.4-acre grove of blue gum eucalyptus (*Eucalyptus globulus*) on the proposed Project site on San Luis Ranch. The rookery is located at the northeast end of the grove (Figure 1). The center of the rookery is located at approximately 35.2598° N, -120.6810° W. There is minimal understory vegetation in the grove due to the accumulation of eucalyptus leaves, bark, and woody debris. There are footpaths and evidence of a homeless encampment under the trees southeast of the rookery. People were observed sitting and sleeping in this area of the grove during the surveys.

Survey Methods

Surveys were conducted weekly from February 3 through July 6, 2015 and weekly from February 8 through June 21, 2016. During each visit, each heron nest was observed with binoculars and the presence of any herons and their behavior was noted. All raptors in the area were also noted, as were any other colonial water birds using the rookery trees. Beginning in May 2015, the number of roosting turkey vultures (*Cathartes aura*) using the rookery trees was also recorded.

Survey Results

Six heron nests were observed in the rookery in 2015 and 2016, numbered 1 through 6 from north to south (Figure 1). In 2015, Nests 1 through 4 were active, but only Nest 2 fledged young. Two chicks fledged from Nest 2 between June 17 and June 25, 2015. For more details, see memo dated November 11, 2015.

In 2016, Nests 1, 2, 4, and 6 were active. Only Nest 6 successfully fledged young. Nest 3 was partially collapsed at the start of the 2016 nesting season, and by February 22, the nest had completely fallen down out of the tree. Nest 5 was incomplete in 2015, and remained incomplete in 2016. Nests 1 and 4 appeared to fail early in the nesting season. Adult birds were seen adding sticks to these nests, and sitting in or standing in the nests, but by the middle of May, both nests were inactive. Nest 2 had two chicks, but between April 19 and May 2 both chicks fell out of the nest and perished. It is possible that the chicks fell out or were blown out by strong afternoon and evening winds. Nest 6 fledged two young: one fledged between May 31 and June 10 and the other between June 10 and June 21.

Other Roosting Species

Three species of raptors were observed roosting or perching in the eucalyptus trees in the rookery grove: red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and American kestrel (*Falco sparverius*). No raptors were observed nesting in the rookery trees, or anywhere else on the site. In February and March 2015, great egrets (*Ardea alba*) also roosted in the rookery trees, but did not nest. A large number of turkey vultures roost on the property, and beginning in May 2015, the number of turkey vultures roosting in the rookery trees was recorded. In 2015, up to 17 turkey vultures were documented in the rookery grove. In 2016, up to 15 turkey vultures were documented in the rookery grove and over 20 turkey vultures were documented in the eucalyptus trees adjacent to Prefumo Creek. See Table 1 for a complete list of all wildlife species detected at the Project site during 2015 and 2016 surveys.

Human Activities near the Rookery

The proposed Project site is still currently an active agricultural site, with foot and vehicle traffic in the vicinity of the rookery. There is a dirt road approximately 200 feet from the nests, and during the 2015 and 2016 nesting seasons trucks drove, idled, and stopped on this road frequently. Vehicles and machinery were occasionally parked on the grassy area directly southwest of the rookery, and vehicles would drive on this grass to drop off or hitch up equipment, sometimes within 100 feet of the rookery trees. In March of both 2015 and 2016, the tall grass was mowed up to the base of the rookery trees. In May 2015, a homeless encampment was detected within the rookery grove, approximately 40-50 feet southeast from the heron nests. At least two people were present at this camp, and were observed sitting, sleeping, and smoking within 50 feet of the nest trees. In early June 2015, the encampment shifted east/southeast to another spot under the trees approximately 80-90 feet from the nests. When surveys resumed in February 2016, the homeless encampment was still in place. As of May 2, 2016, two people appeared to still be occupying the camp.

Herons were never observed flushing from nests due to human disturbance. Herons did raise their heads and necks in an alert posture when people on foot approached within 200 feet of nests. On March 9, 2016, the heron in Nest 6 stood up from an incubating posture when a farm worker unloaded irrigation tubing about 200 feet from the nest and clanged the pipes together. The bird did not flush from the nest.

TABLE 1. LIST OF WILDLIFE DETECTED DURING SURVEYS FROM FEBRUARY 3 THROUGH JULY 6, 2015 AND FEBRUARY 8 THROUGH JUNE 21, 2016.

Common Name	Scientific Name	Year Observed	Special Status	General Habitat Preference
Reptiles - 1 species				
Western Fence Lizard	*Sceloporus occidentalis bocourtii*	2015, 2016	None	Wide range; variety of habitats
Birds - 52 species				
Cooper's Hawk	*Accipiter cooperii*	2015	SA (Nesting)	Oak, riparian woodland
Western Scrub-Jay	*Aphelocoma californica*	2015, 2016	None	Oak, riparian woodlands
Great Egret	*Ardea alba*	2015	SSC (Rookery Site)	Water habitats, grasslands
Great Blue Heron	*Ardea herodias*	2015, 2016	SSC (Rookery Site)	Water habitats, grasslands
Oak Titmouse	*Baeolophus inornatus*	2015, 2016	SA (Nesting)	Oak woodland
Red-tailed Hawk	*Buteo jamaicensis*	2015, 2016	None	Open, semi-open country
Red-shouldered Hawk	*Buteo lineatus*	2015, 2016	None	Oak, riparian woodlands
Anna's Hummingbird	*Calypte anna*	2015, 2016	None	Many habitats
Pine Siskin	*Carduelis pinus*	2016	None	Riparian, woodlands, urban
Lesser Goldfinch	*Carduelis psaltria*	2015, 2016	None	Riparian, oak woodlands
American Goldfinch	*Carduelis tristis*	2015, 2016	None	Weedy fields, woodlands
House Finch	*Carpodacus mexicanus*	2015, 2016	None	Riparian, grasslands, chaparral, and woodlands
Turkey Vulture	*Cathartes aura*	2015, 2016	None	Open country
Rock Pigeon	*Columba livia*	2015, 2016	None	Urban areas
Western Wood-Pewee	*Contopus sordidulus*	2016	None	Riparian woodlands
American Crow	*Corvus brachyrhynchos*	2015, 2016	None	Many habitats, esp. urban
Steller's Jay	*Cyanocitta stelleri*	2015	None	Woodlands
Pacific-slope Flycatcher	*Empidonax difficilis*	2015, 2016	None	Riparian, oak woodlands
American Kestrel	*Falco sparverius*	2015, 2016	None	Open, semi-open country
Barn Swallow	*Hirundo rustica*	2015	None	Riparian, grasslands, lakes
Bullock's Oriole	*Icterus bullockii*	2015, 2016	None	Oak, riparian woodlands
Dark-eyed Junco	*Junco hyemalis*	2015, 2016	None	Oak woodland
Song Sparrow	*Melospiza melodia*	2015, 2016	None	Oak, riparian woodland
Northern Mockingbird	*Mimus polyglottos*	2015, 2016	None	Riparian, chaparral and woodlands. Also urban
House Sparrow	*Passer domesticus*	2015, 2016	None	Urban

Common Name	Scientific Name	Year Observed	Special Status	General Habitat Preference
Cliff Swallow	*Petrochelidon pyrrhonota*	2016	None	Urban; open areas near water
Nuttall's Woodpecker	*Picoides nuttallii*	2015, 2016	SA (Nesting)	Oak, riparian woodlands
California Towhee	*Pipilo crissalis*	2015, 2016	None	Brushy habitats
Spotted Towhee	*Pipilo maculatus*	2015, 2016	None	Dense brushy areas
Western Tanager	*Piranga ludoviciana*	2015, 2016	None	Oak, riparian woodlands
Chestnut-backed Chickadee	*Poecile hudsonica*	2015, 2016	None	Mixed woods
Bushtit	*Psaltriparus minimus*	2015, 2016	None	Woodlands, chaparral
Ruby-crowned Kinglet	*Regulus calendula*	2016	None	Oak, riparian woodlands
Black Phoebe	*Sayornis nigricans*	2015, 2016	None	Near water
Allen's hummingbird	*Selasphorus sasin*	2015, 2016	SA (Nesting)	Riparian, chaparral and woodland
Yellow-rumped Warbler	*Setophaga coronata*	2015, 2016	None	Woodlands, brush, open country
Townsend's Warbler	*Setophaga townsendii*	2016	None	Riparian, oak woodlands
Western Bluebird	*Sialia mexicana*	2016	None	Woodland near open areas
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	2016	None	Riparian, lakes, open areas
Eurasian Collared-Dove	*Streptopelia decaocto*	2015, 2016	None	Urban areas
European Starling	*Sturnus vulgaris*	2015, 2016	None	Agricultural, livestock areas
Tree Swallow	*Tachycineta bicolor*	2015, 2016	None	Oak, riparian woodlands, open areas near water
Violet-green Swallow	*Tachycineta thalassina*	2016	None	Oak, riparian woodlands, open areas near water
Bewick's Wren	*Thryomanes bewickii*	2015, 2016	None	Riparian woodland, scrub
House Wren	*Troglodytes aedon*	2015, 2016	None	Shrubby areas
American Robin	*Turdus migratorius*	2015, 2016	None	Streamsides, woodlands
Western Kingbird	*Tyrannus verticalis*	2015, 2016	None	Grasslands, savanna
Orange-crowned Warbler	*Vermivora celata*	2015	None	Oak, riparian woodlands
Wilson's Warbler	*Wilsonia pusilla*	2015	None	Oak, riparian woodlands
Mourning Dove	*Zenaida macroura*	2015, 2016	None	Open and semi-open habitats
Golden-crowned Sparrow	*Zonotrichia atricapilla*	2016	None	Dense woodlands, brushy areas
White-crowned Sparrow	*Zonotrichia leucophrys*	2016	None	Oak, riparian woodlands

Abbreviations:
SA: California Department of Fish and Wildlife (CDFW) Special Animal
SSC: CDFW Species of Special Concern

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Memo

To: Marshall Ochylski and Dove Daniels

From: LynneDee Althouse, Dr. Dan Meade, Dr. Pat Mock

Date: April 15, 2016

Re: San Luis Ranch – Prefumo Creek Widening Biological Constraints

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Attached is a figure showing the Top-of-Bank (TOB) locations of the drainages on the San Luis Ranch Project site. In order to widen Prefumo Creek, about 30 feet of riparian upland buffer may be impacted. Included in this impact area are eucalyptus trees that are critical to the maintenance of a monarch butterfly aggregation site, which includes a 100-ft buffer around trees known to hold clusters of monarch butterflies in 2015-2016. The buffer to butterfly trees maintains micro-climatic conditions necessary to keep the grove suitable for monarch butterfly use. This aggregation site on San Luis Ranch is recognized in the CNDDB record since 1991, but was not surveyed for many following years. Impacting the butterfly buffer would likely be considered a significant impact under CEQA, with low potential to achieve adequate mitigation. This unmitigatable biological impact would be controversial, and likely to receive negative comments from City planning staff, wildlife agencies, environmental advocate organizations, and the environmentally aware segment of the interested public.

In addition to CEQA compliance, the US Fish & Wildlife Service (USFWS) has received a petition to list the Monarch butterfly as Threatened under the federal Endangered Species Act (ESA). If this butterfly species is listed, an ESA Section 7 consultation between USFWS and US Army Corps of Engineers (USACE) would be required as part of the Clean Water Act (CWA) Section 404/401 permitting process. A Section 7 consultation for Steelhead and California Red-legged Frog would also be required. A Streambed Alteration Agreement (Fish & Game Code 1602) with the California Department of Fish & Wildlife (CDFW) would also be required, with likely onerous conditions of approval related to the butterfly habitat.

Althouse and Meade, Inc. recommends impact avoidance of the butterfly habitat buffer to avoid a controversial issue for the CEQA process and subsequent federal and state jurisdictional waters permitting.

Attachment: Monarch Butterfly Habitat with potential buffer impact area indicated

Top of Bank from Madonna Rd to Cerro San Luis Creek

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San Luis Ranch
San Luis Obispo, CA

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Map Updated: April 15, 2016 08:59 AM

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