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Aquatic Resource Delineation Report

for

McDonald/Mack Minor Land Division Project

5460 King Road Loomis

Placer County, California

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List of Acronyms

AWE	Area West Environmental, Inc.
CFR	Code of Federal Regulations
CWA	Clean Water Act
FAC	facultative plants
FACU	facultative upland plants
FACW	facultative wetland plants
HUC	USGS Hydrologic Unit Code
I	Interstate
NAD83	North American Datum 1983
NRCS	Natural Resources Conservation Service
NOAA	National Oceanic and Atmospheric Administration
--	not listed
NWI	National Wetland Inventory
NWPL	National Wetlands Plant List
OBL	obligate wetland plants
OHWM	ordinary high water mark
PJD	Preliminary Jurisdictional Determination
Project	McDonald/Mack Minor Land Division Project
Project proponent	Ms. Morgan McDonald
TNW	Traditional Navigable Water
UPL	obligate upland plants
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WETS	Wetlands Climate Table
WRCC	Western Regional Climate Center
WRMS	Western Regional Monitoring Station

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1.0 SUMMARY OF FINDINGS

This report provides the results of an aquatic resources delineation study. The purpose of the study was to determine potential waters of the U.S. under the jurisdiction of the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act (CWA) for the McDonald/Mack Minor Land Division Project (Project) located at 5460 King Road, Loomis, California. This delineation has been conducted following guidance in the Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE 2008a). The ordinary high water mark (OHWM) of potential other waters of the U.S. was delineated following guidance in *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b), and the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2010). This Preliminary Jurisdictional Determination (PJD) indicates that waters of the U.S., including wetlands, are present in the Project's survey boundaries (Survey Area). Acreages presented in this report are considered preliminary, subject to review by the USACE during the verification process. Implementation of the Project may require the Ms. Morgan McDonald (Project proponent) to obtain a Section 404 permit.

A total of 0.194 acre of aquatic resources were identified at the 5.117-acre Survey Area (Table 1 and Exhibit A), comprised of 0.133 acres of wetlands (fresh emergent wetland, wetland swale, and riparian wetland) and 0.061 acre of potential other waters of the U.S. (open water).

Table 1. Summary of Aquatic Resources in the Survey Area

Feature Type	Area (acres)	Length (feet)
Wetlands		
W-1	0.022	N/A
W-2	0.022	N/A
W-3	0.041	N/A
W-4	0.022	N/A
W-6	0.019	N/A
W-7	0.007	N/A
Wetlands Subtotal	*0.133*	*N/A*
Other Waters		
W-5	0.061	93
Other Waters Subtotal	*0.061*	*93*
Total	**0.194**	**93**

2.0 INTRODUCTION

Area West Environmental, Inc. (AWE) was retained by the Project proponent to conduct an aquatic resources delineation at 5460 King Road in the Town of Loomis, in Placer County, California and prepare a PJD report.

The Project is located in the Town of Loomis in Placer County approximately 23 miles northeast of Sacramento, California. The Survey Area is approximately 5.117 acres, and consists of one large parcel, which the Project proposes to split into multiple large lots.

2.1 Project Location

The Project is located in southern Placer County, California, in the unincorporated town of Loomis at 5460 King Road, Placer County, California, 95650 (Figure 1). Specifically, the Project is located on the Rocklin U.S. Geological Survey (USGS) 7.5-minute quadrangle topographic map in Section 9 of Townships 11 North, and Range 7 East. The approximate center coordinates of the site are Longitude -121.204654 east and Latitude 38.823688 north of the North American Datum 1983 (NAD83) datum (Figure 2).

2.2 Site Description

The Survey Area is used as a cattle pasture for grazing and is supplied with irrigation water through sprinklers during the summer. One residence is located on the eastern portion of the parcel, which is fully developed. The Survey Area transitions from a terrace landform in the east to a small drainage that flows south towards an unnamed creek, which is located approximately 500 feet southeast of the Project (Figure 3). The Survey Area consists of valley oak woodland and irrigated cattle pasture with scattered wetlands, mainly within or along drainages. A small grove of blue gum (*Eucalyptus globulus*) (--) is also present on site in the pasture. Surrounding land use consists of residential homes.

2.3 Driving Directions

From Interstate 80 (I-80) East in Sacramento: Continue on I-80 for 8.4 miles and then take exit 109 Sierra College Boulevard, and turn left (north) onto Sierra College Boulevard. Continue on Sierra College Boulevard for 2.0 miles and turn right onto King Road. Continue on King Road for 0.7 mile to 5460 King Road. The Project is located on the south side of King Road.

Figure 1. Project Vicinity

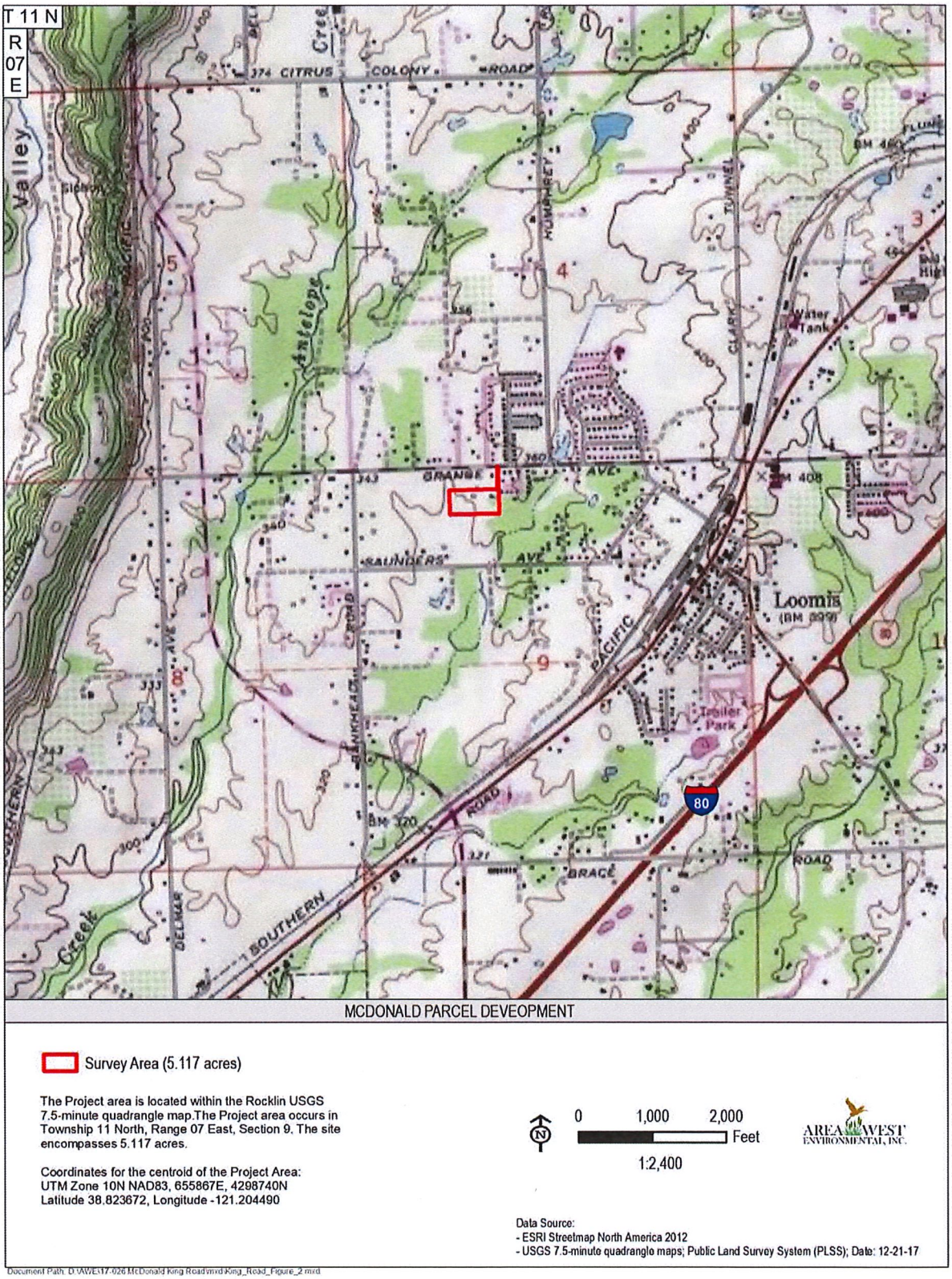

Figure 2. Project Location

Figure 3. Project Overview

3.0 DEFINITIONS

Certain terms used throughout this report have specific meanings that relate to the wetland delineation process, as specified by the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008a). These terms are described briefly below.

3.1 Waters of the U.S.

"Waters of the U.S." is the encompassing term for areas that qualify for federal regulation under Section 404 of the CWA. Waters of the U.S. include "wetlands" and "other waters of the U.S." For regulatory purposes, wetlands are defined as:

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

3.2 Wetlands

Wetlands under USACE jurisdiction must have the following field indicators:

1. A prevalence of hydrophytic vegetation (i.e., "water loving" species with "obligate," "facultative wetland," or "facultative" wetland indicator status [Lichvar et al. 2016]);

   Plant wetland indicator status from The National Wetland Plant List: 2016 Update of Wetland Ratings (NWPL) (Lichvar, et al. 2016) is abbreviated as follows:

   - OBL = Obligate wetland plants. Almost always occur in wetlands.
   - FACW = Facultative wetland plants. Usually occur in wetlands, but may occur in non-wetlands.
   - FAC = Facultative plants. Occur in wetlands and non-wetlands.
   - FACU = Facultative upland plants. Usually occur in non-wetlands, but may occur in wetlands.
   - UPL = Obligate upland plants. Almost never occur in wetlands.
   - For species not listed in the NWPL two dashes (--) are used to indicate their absence in the list. These species are assumed to be upland species.

2. Hydric soils (i.e., hydric soils listed by the U.S. Department of Agriculture Natural Resources Conservation Service [NRCS] and unclassified soils that are formed

under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part) (USACE 2008a); and

3. Wetland hydrology (evidence that episodes of inundation or soil saturation lasting more than a few days during the growing season have occurred repeatedly over a period of years and that the timing, duration, and frequency of wet conditions have been sufficient to produce a characteristic wetland plant community and hydric soil morphology).

In the Arid West Region, growing season dates are determined through onsite observations of the following indicators of biological activity in a given year: (1) above-ground growth and development of vascular plants, and/or (2) soil temperatures. Season dates may be approximated by using Wetlands Climate Tables (WETS) available from NRCS National Water and Climate Center to determine the median dates of 28 degree F (-2.2 degree C) air temperatures in spring and fall based on long-term records gathered at the nearest appropriate National Weather Service meteorological station (USACE 2008a).

3.3 Other Waters of the U.S.

For this report, other waters of the U.S. refer to waterways and other water bodies with a defined bed and bank, such as drainages, ditches, creeks, rivers, and lakes. This translates to the bank-to-bank portion of water bodies, up to the OHWM. Other waters of the U.S. may lack hydrophytic vegetation and/or evidence of hydric soils.

In 33 CFR Part 329.1, the OHWM for non-tidal rivers is defined as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; and the presence of litter and debris. The OHWM for a stream is usually determined through an examination of the recent physical evidence of surface flow in the stream channel. In dry land fluvial systems typical of the desert areas, the most common physical characteristics indicating the OHWM for a channel usually include, but are not limited to, a clear, natural scour line impressed on the bank; recent bank erosion; destruction of native terrestrial vegetation; and the presence of litter and debris (USACE 2008b, 2010).

4.0 METHODS

Wetlands were delineated using the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008a). An area must meet criteria for hydrophytic vegetation, hydric soils, and wetland hydrology to be identified as a potential wetland under USACE jurisdiction.

Water bodies that did not meet the wetland criteria were reviewed to determine if they met the definition of other waters of the U.S. (i.e., had evidence of an OHWM).

Specific details of the delineation methods are described below.

4.1 Preliminary Review

Before field surveys were conducted, the following information was reviewed:

- General topography was obtained from the *Rocklin*, California USGS 7.5-minute topographic quadrangle map (Figure 2).
- Soil information was obtained from the NRCS Web Soil Survey (NRCS 2017b) (Figure 4, Appendix A).
- Site hydrology was gathered from visual interpretations of aerial photographs and topography at a scale of 1 inch = 100 feet (Exhibit A).
- National Wetland Inventory (NWI) maps were reviewed (Figure 5) (U.S. Fish and Wildlife Service [USFWS] 2017).
- Regional hydrology was obtained from visual observations and aerial photographic evidence of hydrologic connections to Traditional Navigable Waters (TNW) (Figure 6).
- USGS Hydrologic Unit Code (HUC) data for California watershed boundaries (Figure 7).

4.2 Field Survey Dates and Methods

Wetland delineation fieldwork was conducted by AWE biologist Patrick Martin on December 15, 2017. The purpose of the fieldwork was to gather data on the vegetation, soils, and hydrology of the site to determine what areas met the USACE three mandatory criteria for wetlands (i.e., exhibited positive indicators of wetland vegetation, soils, and hydrology).

4.2.1 Vegetation

Vegetation within potential waters of the U.S. was recorded on Wetland Determination Data Forms (Arid West Region, Version 2) which are provided in Appendix B. Plant species not readily identifiable in the field were determined based on the *Jepson Manual: Vascular Plants of*

Figure 4. Project Soils

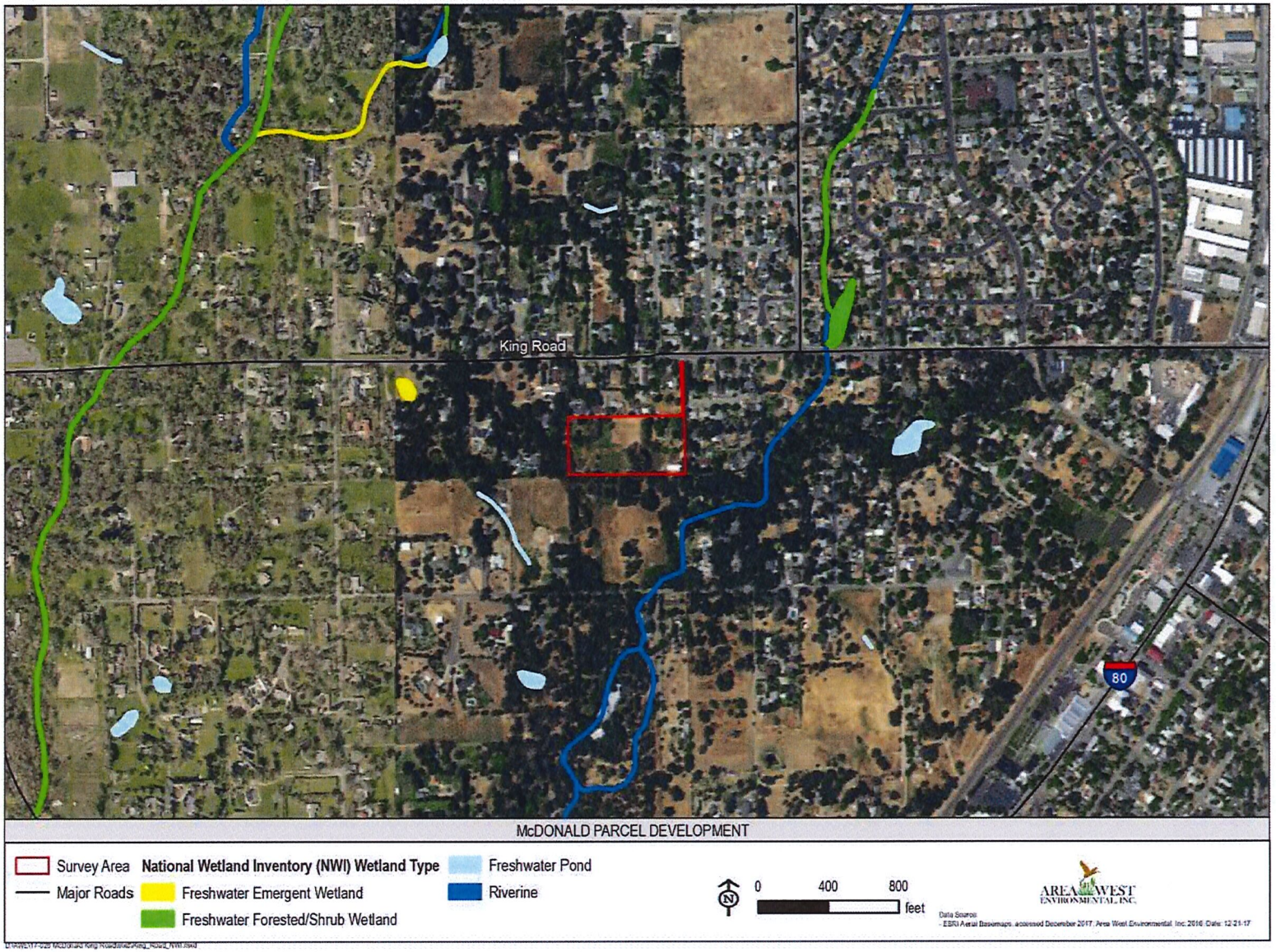

Figure 5. National Wetlands Inventory

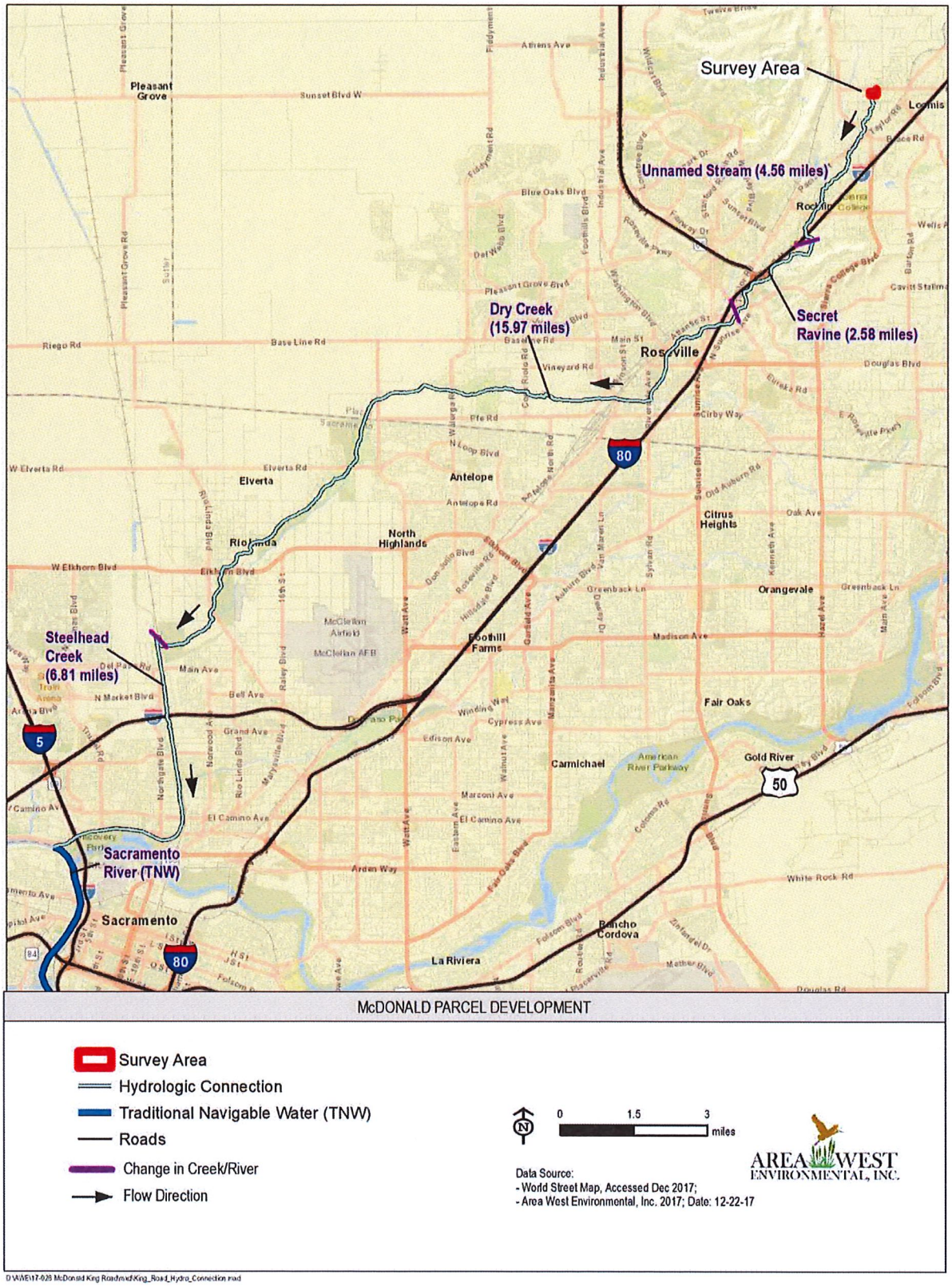

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Figure 6. Project Distance to Traditional Navigable Water

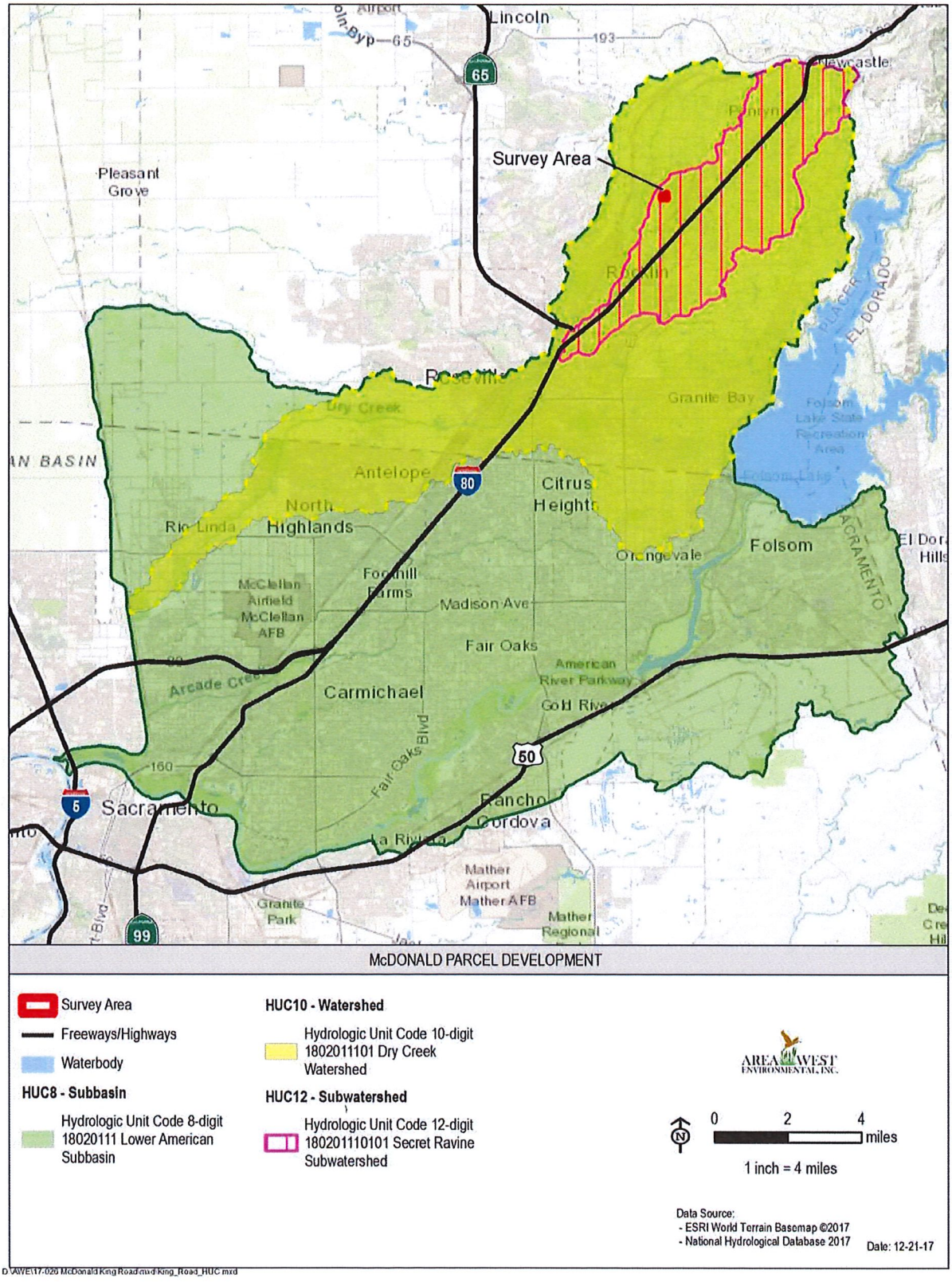

Figure 7. Project Hydrologic Unit

California (Second Edition) (Baldwin et al. 2012). The prevalence of hydrophytic vegetation was determined using USACE methods. The wetland indicator status of plant species was based on *The National Wetland Plant List: 2016* (Lichvar et al. 2016).

The wetland vegetation criterion was considered met when more than 50 percent of the dominant plant species across all strata were rated OBL, FACW, or FAC or if the aerial cover of hydrophytic plant species resulted in a prevalence rating of 3.0 or less. The USACE defines "dominant" plant species as those with at least 20 percent coverage of the total canopy. The USACE defines an area to be vegetated if it has 5 percent or more total plant cover at the peak of the growing season. Those sites supporting either a dominance or prevalence of hydrophytes were further examined for indicators of wetland hydrology and hydric soils.

4.2.2 Soils

Soil texture, matrix and mottle colors, and the presence of subsoil layers impervious to water infiltration were documented from hand-excavated soil pits. Soil pits were excavated up to 15 inches, where possible. Soil pits not excavated to this depth encountered restrictions to hand excavations such as dry, hard soil conditions; rock or concrete. Soils were examined for positive hydric soil indicators such as low chromas, mottles, histic epipedons, organic layers, manganese concretions, gleization, and sulfidic odor. The color and texture of the soil layers encountered were recorded. Soil color was determined from moist soil peds using *Munsell Soil Color Charts* (Munsell 2009). Alphanumeric soil descriptions provided on the field data forms are based on those in the Munsell soil color charts.

Paired upland and wetland soil pits were evaluated in order to determine and delineate an abrupt wetland/upland boundary. Hydric soil assessments were predominately based on the guidance provided in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008a) and the *Field Indicators of Hydric Soils in the U.S., Version 8.1* (NRCS 2017a). Supplemental soil information for the regional area was also evaluated from the Web Soil Survey (NRCS 2017b). Specific pit depths, soil color/texture, and other soil data obtained at each soil sample location are provided on the data forms found within Appendix B.

4.2.3 Hydrology

Areas supporting a prevalence of hydrophytic vegetation and hydric soils were further evaluated for indicators of wetland hydrology. Hydrology information was determined through field observations in order to determine the presence/absence of primary and/or secondary hydrological indicators (i.e., surface water, saturation, sediment debris, drift deposits, watermarks, soil cracks, oxidized root channels, biotic crusts, salt crusts, or other hydrologic indicators). Wetland hydrology was also determined based on the presence of ponding (inundation) or saturation, aerial photographic signature, landscape positions, or the presence of other field indicators such as scour marks.

The site was also surveyed for water bodies (e.g., streams and ponds). A "water body" is defined as any area that in a normal year has water flowing or standing above ground to the extent that evidence of an OHWM is established (Federal Register Volume 67, Number 10, Tuesday

January 15, 2002). Water bodies are not required to be dominated by hydrophytic vegetation or to have positive hydric soil indicators to be considered USACE-jurisdictional.

4.3 Data Collection

Data was collected on the vegetation communities within the Survey Area, categorized by the dominant vegetation. A total of 12 data points were collected to document wetlands and uplands, and two data points were collected to document other waters of the U.S. (Appendix B). Drainages exhibiting an OHWM were further characterized using forms provided in the *Updated Datasheet for Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2010) (Appendix B). Representative photographs of the site and the aquatic features are provided in Appendix C.

The Survey Area consists of the following vegetation community types: developed, irrigated pasture, valley oak woodland, fresh emergent wetland, wetland swale, riparian wetland, and open water (cattle pond). Two paired data points were collected to document wetland and upland boundaries for the mapped wetland features. A single data point was collected to document other waters of the U.S.

4.4 Mapping and Acreage Calculations

The boundaries of potential wetland features were recorded using a handheld Trimble GeoXT Global Positioning System unit with sub-meter accuracy. Data was collected in latitude/longitude in the NAD83 datum. Acreages for these features within the Survey Area were calculated using polygon size in ArcView Geographic Information System.

5.0 RESULTS

A total of 0.194 acre of potential waters of the U.S. were identified in the 5.117-acre Survey Area. There were 0.133 acre of potential wetlands, and 0.061 acre of potential other waters of the U.S. identified (Exhibit A). Vegetation communities in the Survey Area are discussed further in Section 5.4.

Acreages and USACE-jurisdictional boundaries are preliminary and subject to review and modification by the USACE. Data forms are included in Appendix B. Representative photographs are provided in Appendix C. A list of vascular plant species observed in the Survey Area is included in Appendix D. An aquatic resources table for all of the documented waters of the U.S. is included in Appendix E.

5.1 Limitations to Survey

Limitations to this survey included:

1) Survey date was outside of the bloom period for many common wetland plants. The delineation was conducted towards the beginning of the growing season, so much of the herbaceous cover was immature and difficult to identify. Sufficient vegetation, however, was identifiable to determine feature boundaries and types.

5.2 Overview of Site Conditions

The Survey Area is located in Placer County with elevations ranging from approximately 330 to 350 feet above mean sea level.

No waters of the U.S. within the Survey Area boundaries were identified in the NWI (Figure 5).

Climate details for the Survey Area are based on historical data collected by the Western Regional Climate Center (WRCC) at the Auburn monitoring station located approximately 8.5 miles northeast of the Survey Area. Temperatures range from an average high temperature of 93.2 degrees Fahrenheit (°F) in July to an average low of 36.2 °F in January according to the WRCC (NOAA 2017). The average annual high temperature in the Survey Area is approximately 72.8 °F. The Survey Area receives an average of approximately 34.14 inches of annual precipitation (rain) from October through May. Prior to the survey date on December 15, 2017, 6.60 inches of rain had fallen in the region between October 1st and December 15th (NOAA 2017) (Appendix F).

During rain events, water flows from uplands in the surrounding hills, across the Survey Area, and then south and west to an unnamed drainage that drains into Secret Ravine approximately 4.56 miles southwest of the Survey Area (Figure 6). Secret Ravine flows southwest for another 2.58 miles, to its confluence with Dry Creek, which flows 15.97 miles southwest to Steelhead Creek. Steelhead Creek flows for another 6.81 miles and is tributary to the Sacramento River, a TNW. The Survey Area is located within the northeastern portion of the HUC 8-digit Lower American subbasin (HUC 18020111) (Figure 7).

5.3 Soils

One soil map unit, Andregg coarse sandy loam, 2 to 9 percent slopes (106), is present within the Survey Area (Figure 4). The soil unit present in the Survey Area is described in detail in the NRCS Web Soil Survey, including landform position, horizon textures, depth to restrictive layer, and drainage class (Appendix A). This soil map unit is listed in the National Hydric Soil List (NRCS 2017c). No other soil map units are present in the Survey Area.

5.4 Vegetation Community Types

A total of seven vegetation community types were identified at the Survey Area, including:

- developed;
- irrigated pasture;
- valley oak woodland;
- fresh emergent wetland;
- wetland swale;
- open water (cattle pond); and
- riparian wetland.

The boundaries of the vegetation communities determined to be USACE-jurisdictional are mapped in Exhibit A, and the following sections describe each community observed at the Survey Area.

5.4.1 Developed

The developed vegetation community consists of a landscaped yard and includes a private residence, roadways and road shoulders. This developed community is situated within the upland areas of the Survey Area. Roads consist of a paved surface that leads from King Road to the private residence. The private residence is located in the northeastern corner of the Survey Area, and consists of a paved and dirt driveway and a landscaped yard with ornamental trees and shrubs.

Vegetation. Vegetation within the developed community consists of ornamental trees and shrubs such as silver maple (*Acer saccharinum*) (FAC), pin oak (*Quercus palustris*) (--), California fan palm (*Washingtonia filifera*) (FAC), and interior live oak (*Quercus wislizeni*) (--). The dominant herbaceous species includes Bermuda grass (*Cynodon dactylon*) (FACU) and Kentucky blue grass (*Poa pratensis*) (FAC). The private residence is dominated by upland grasses, which are regularly mowed for landscaping.

Soils. Due to the dominance and prevalence of upland vegetation in this community, soils were not examined for indicators of hydric soils.

Hydrology. No indicators of wetland hydrology were observed in this community.

Justification for Non-jurisdictional Status. The three mandatory wetland criteria were not met in this community; there is a dominance of upland vegetation and lack of wetland hydrology indicators. Therefore, this community is not a wetland, and is not USACE-jurisdictional.

5.4.2 Irrigated Pasture

Irrigated pasture is the dominant community at the Survey Area, and consists primarily of non-native grasses and forbs with intermittent trees such as valley oak (*Quercus lobata*) (FACU), foothill pine (*Pinus sabiniana*) (--) and blue gum scattered throughout the pasture. The pasture is irrigated by a network of pipes and sprinklers. Per communication with the property owner, irrigation occurs during the summer and fall seasons to provide forage for cattle. Irrigated pasture occurs throughout the Survey Area and is characteristic of upland conditions, with the majority of the community used for cattle grazing.

Data Points 2, 4, 6, 10, 11 and 12 in Appendix B are representative of the vegetation, soils, and hydrologic indicators of irrigated pasture.

Vegetation. Vegetation in this community is mostly herbaceous with occasional scattered valley oak trees, foothill pine trees, and blue gum trees. Typical plant species in this community include dallisgrass (*Paspalum dilatatum*) (FAC), common smartweed (*Persicaria hydropiper*) (OBL), Bermuda grass, Himalayan blackberry (*Rubus armeniacus*) (FAC), and Fremont cottonwood (*Populus fremontii*) (FAC) saplings. Although the community is dominated by upland species, occasional hydrophytes are present near the margins of wetlands, and bases of mounds of disturbed soil near ranching infrastructure (e.g., fence posts, gates, and driveways). Common smartweed, an obligate wetland plant, was only dominant in one location of the irrigated pasture along a fence, at Data Point 12, which fulfilled a dominance of hydrophytes. Data Point 2 also fulfilled wetland vegetation criteria.

Soils. Soil at Data Points 2, 4, 6 and 10 exhibited a low chroma of 1 in unmottled soil, which is indicative of hydric soil conditions (Environmental Laboratory 1987). Data Points 11 and 12 did not exhibit any hydric soil indicators (Appendix B).

Hydrology. No indicators of wetland hydrology were observed in this community.

Justification for Non-jurisdictional Status. Irrigated pasture represents an upland community dominated by upland herbaceous species and a dominance of hydrophytes at Data Points 2 and 12. Although some of the data points within this community exhibited wetland indicators (e.g., a hydric soil indicator or a dominance of hydrophytic vegetation), none of the data points within this community showed all three mandatory wetland criteria. Therefore, this community is not a wetland, and is not USACE-jurisdictional.

5.4.3 Valley Oak Woodland

Valley oak woodland occurs in a small area on the western portion of the Survey Area, is contiguous with surrounding oak woodlands and abuts residential communities surrounding the

Survey Area. This community is dominated by a mix of oak trees with an understory that is consistent with the irrigated pasture community (Section 5.4.2) and is regularly grazed by cattle.

Data Point 7 in Appendix B is representative of the vegetation, soils, and hydrologic indicators of valley oak woodland community.

Vegetation. The overstory of this community consists of valley oaks, with some interior live oak, blue oak (*Quercus douglasii*) (--) and California walnut (*Juglans californica*) (FACU) also filling out the canopy cover. The understory contains vegetation consistent with the irrigated pasture although with fewer hydrophytes. The understory consists of bristly dogtail grass (*Cynosurus echinatus*) (--), Crane's bill geranium (*Geranium molle*) (--), Italian thistle (*Carduus pycnocephalus*) (--), and ripgut brome (*Bromus diandrus*) (--).

Soils. Soil in this community exhibited a low chroma of 1 in unmottled soil, which is indicative of hydric soil conditions (Environmental Laboratory 1987).

Hydrology. No indicators of wetland hydrology were observed in this community.

Justification for Non-jurisdictional Status. The three mandatory wetland criteria were not met in this community; there is a dominance of upland vegetation and lack of wetland hydrology indicators at the representative data point. Therefore, this community is not a wetland, and is not USACE-jurisdictional.

5.4.4 Fresh Emergent Wetland

This community occurs in the margins of a cattle pond in the southwestern portion of the Survey Area (Exhibit A). Fresh emergent wetland (W-4) remains inundated for long enough durations to support a dominance of hydrophytic vegetation, including obligate wetland plants and the formation of hydric soils. This aquatic feature is located in the Survey Area between open water (which is devoid of vegetation) and the irrigated pasture, which represents uplands. The boundaries of the fresh emergent wetland may fluctuate due to the ephemeral nature of the streams that feed the cattle pond and vegetation removal from the pond. The fresh emergent wetland fringe around the cattle pond is periodically removed from the pond as evidenced by a pile of emergent wetland vegetation and soil observed during the delineation survey. Fresh emergent wetland vegetation is also grazed by the cattle.

Data Point 3 in Appendix B is representative of the vegetation, soils, and hydrologic indicators of the fresh emergent wetland community.

Vegetation. Vegetation in this community is entirely herbaceous and dominated by hydrophytes. Plants in this community include bulrush (*Schoenoplectus* spp.) (OBL), dallisgrass, tall flatsedge (*Cyperus eragrostis*) (FACW), and duckweed (*Lemna* spp.) (OBL).

Soils. At Data Point 3 the hydric soil indicator Depleted Matrix (F3) was observed with prominent redox concentrations present in the matrix and along pore linings of living root channels.

Hydrology. At Data Point 3, Surface Water (A1), a High Water Table (A2), Saturation (A3), and the Presence of Oxidized Rhizospheres along Living Roots (C3) were observed.

Justification for Jurisdictional Status. Based on the prevalence of hydrophytic vegetation, hydric soil indictors, and indicators of wetland hydrology, this community meets the three mandatory wetland criteria. Therefore, this community is considered a wetland, and is USACE-jurisdictional.

5.4.5 Wetland Swale

This vegetation community occurs along the toe of gentle hillslopes within the Survey Area, and primarily conveys water during and immediately after storm events towards the unnamed drainage south of the Survey Area. Wetland swale (W-6) is located in a 100-year floodplain. Wetland swale (W-3) abuts the fresh emergent wetland fringe (W-4) located around the cattle pond, open water (W-5), which continues to drain south to an unnamed drainage. In the Survey Area, wetland swales are slowly draining features that meet all three wetland criteria to qualify as wetlands, but do not support an OHWM to qualify as other waters of the U.S. (Exhibit A).

Data Points 1 and 5 in Appendix B are representative of the vegetation, soils, and hydrologic indicators of wetland swale community.

Vegetation. This community is dominated by herbaceous hydrophytes. Typical plant species for wetland swales include dallisgrass, floating water primrose (*Ludwigia peploides*) (OBL), and field sedge (*Carex praegracilis*) (FACW). Himalayan blackberry was also present at Data Point 1.

Soils. A Redox Dark Surface (F6) was observed at Data Point 1 with prominent redox concentrations in the matrix. Data Point 5 exhibited a low chroma of 1 in unmottled soil, which is indicative of hydric soil conditions (Environmental Laboratory 1987).

Hydrology. Indicators of wetland hydrology included: Saturation (A3), Water-stained Leaves (B9), and Drainage Pattern (B10). Drainage patterns were evidenced by bent vegetation and eroded soil between vegetation, but water does not flow fast enough through this community to result in an observable change in total vegetation cover. Vegetation at both Data Points 1 and 5 also fulfilled the FAC-Neutral Test (D5).

Justification for Jurisdictional Status. Based on the presence of hydrophytic vegetation, hydric soil indictors, and indicators of wetland hydrology, this community meets the three mandatory wetland criteria. Therefore, this community is considered a wetland and is USACE-jurisdictional.

5.4.6 Open Water

Open water in the Survey Area consists of a water impoundment with culverts at the confluence of two ephemeral streams that support wetlands. Historically, these two ephemeral streams (W-1 and W-2), which represent riparian wetland, would have drained through the area now represented as open water (W-5). This community functions as a cattle pond and drains to the

southwest through two culverts to riparian wetland W-7 and to an unnamed drainage. Wetlands were not present in the open water during the site visit on December 15, 2017. Vegetation is likely removed from the pond to maintain capacity of the pond for cattle and irrigation purposes. Two ephemeral streams that supply the cattle pond with water support wetlands in addition to the fresh emergent wetland (W-4, Section 5.4.4) that occur on the fringe of the cattle pond.

Data Point 3 and OHWM Data Sheet 3 in Appendix B is representative of the vegetation, soils, and hydrologic indicators of this open water community.

Vegetation. Plants in this community, when present, consist of hydrophytes with less than five percent vegetation cover. Species in this community type include mostly duckweed, but bulrush and tall flatsedge are also present.

Soils. Soils were not sampled in the open water community because of the steep bank of the pond. Soils are assumed the same as Data Point 3, which fulfilled hydric soil indicator Depleted Matrix (F2) and was observed with prominent redox concentrations in the matrix and along pore linings of living root channels.

Hydrology. Hydrologic indicators observed in this community included Surface Water (A1) (estimated at seven feet deep), High Water Table (A2), and Saturation (A3). The OHWM was characterized by abrupt break in bank slope and a change in vegetation cover (lack of vegetation).

Justification for Jurisdictional Status. Open water is assumed to contain hydric soils and display indicators of wetland hydrology. Open water does not contain a minimum of five percent hydrophytic plant cover, and does not meet the three mandatory wetland criteria. Open water does exhibit an OWHM, is a natural drainage, and therefore is considered an other waters of the U.S. This community is USACE-jurisdictional.

5.4.7 Riparian Wetland

Riparian wetland consists of two ephemeral streams that run across the western portion of the Survey Area in a north to south direction (Exhibit A). Riparian wetland (W-2) is dominated by herbaceous riparian wetland species. The stream originates north of the Survey Area, and it drains the surrounding hillslopes through the Survey Area to the cattle pond. Riparian wetland (W-1) consists of a sparse layer of herbaceous riparian wetland vegetation, but also support riparian trees and shrubs such as Goodding's black willow (*Salix gooddingii*) (FACW), Fremont cottonwood, and Himalayan blackberry. Riparian wetland (W-1) also drains to the cattle pond, which is likely the confluence of these two streams. Riparian wetland (W-1) appears to originate on the Survey Area and is a deeply incised feature with exposed roots and trunks of riparian trees. Both streams flow to the pond via culverts. The cattle pond drains through riparian wetland (W-7), which is consistent with conditions at riparian wetland (W-2). Riparian wetland (W-7) drains to an unnamed drainage south of the Survey Area, which is tributary to Secret Ravine.

Data Points 8, 9 and OHWM Data Sheets 1 and 2 are representative of the vegetation, soils, and hydrologic indicators of the riparian wetland community.

Vegetation. Vegetation in this community is dominated by herbaceous hydrophytes including dallisgrass, smartweed, and fiddle dock (*Rumex pulcher*) (FAC). Trees occur in this community only at Data Point 8, and include Fremont cottonwood and Goodding's black willow. The vine stratum is also present and is dominated by Himalayan blackberry. Other plant species in this community include tall flatsedge, field sedge, English plantain (*Plantago lanceolata*) (FAC), and crane's bill geranium.

Soils. A Loamy Gleyed Matrix (F2) and Depleted Matrix (F3) were observed at Data Point 8 and Data Point 9 respectively. The Depleted Matrix (F3) at Data Point 9 showed prominent redox concentrations in the matrix and along the pore linings of living root channels.

Hydrology. Surface Water (A1), Saturated Soil (A3), Surface Soil Cracks (B6), and the presence of Oxidized Rhizospheres along Living Roots (C3) were observed within this community. Secondary wetland hydrology indicators detected include Drift Deposits (B3) and Drainage Pattern (B10) in a riverine setting. An OHWM was observed by the presence of an eroded bank as well as an abrupt change in vegetation from upland vegetation to hydrophytes. Riparian wetland (W-1) had more coarse soil than the surrounding landscape and riparian wetland (W-2) had a higher clay content in the soil than the surrounding landscape.

Justification for Jurisdictional Status. Based on the presence of hydrophytic vegetation, indicators of hydric soil, and indicators of wetland hydrology, this community meets the three mandatory wetland criteria. Therefore, this community is considered a wetland and is USACE-jurisdictional.

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Appendix A.
National Resource Conservation Service Web Soil Survey

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Placer County, California, Western Part

December 13, 2017

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:1,710 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Placer County, California, Western Part
Survey Area Data: Version 9, Sep 13, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 3, 2015—Sep 29, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
106	Andregg coarse sandy loam, 2 to 9 percent slopes	6.4	100.0%
Totals for Area of Interest		**6.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Placer County, California, Western Part

106—Andregg coarse sandy loam, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hfyf
Elevation: 200 to 1,500 feet
Mean annual precipitation: 12 to 35 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 200 to 270 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Andregg and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Andregg

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from granite

Typical profile

H1 - 0 to 15 inches: coarse sandy loam
H2 - 15 to 29 inches: coarse sandy loam
H3 - 29 to 33 inches: weathered bedrock

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 29 to 33 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: Shallow Thermic Foothills 18-25 PZ (F018XI200CA)
Hydric soil rating: No

Minor Components

Caperton

Percent of map unit: 5 percent
Hydric soil rating: No

Sierra

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed, mod deep

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent
Landform: Drainageways
Hydric soil rating: Yes

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Appendix B.
Wetland Determination and Ordinary High Water Mark Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: McDonal Parcel Development/5460 King Road City/County: Loomis/Placer Sampling Date: 2017-12-15

Applicant/Owner: Ms. Morgan McDonald State: CA Sampling Point: 1

Investigator(s): Patrick Martin Section, Township, Range: Section 9, T11N, R7E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR): C Lat: 38.823889 Long: -121.204934 Datum: NAD83

Soil Map Unit Name: 106-Andregg coarse sandy loam, 2 to 9 percent slopes NWI classification: None

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

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

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

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

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

Remarks: This data point documents a seasonal wetland swale that drains to the south. It originates in the study area and drains to a nearby tributary of Dry Creek, which is tributary to the Sacramento River, a TNW.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 30'x 3')			
1. Paspalum dilatatum	40	Y	FAC
2. Ludwigia peploides	17	Y	OBL
3. Persicaria hydropiper	14	N	FACW
4. Cyperus Eragrostis	8	N	FACW
5. Typha spp.	5	N	OBL
6.			
7.			
8.			
50 41.5 20 16.6	83 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1. Rubus armeniacus	10	Y	FAC
2.			
	10 = Total Cover		

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
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:

Y Dominance Test is >50%

N Prevalence Index is ≤3.0[1]

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

N/A 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: Dominated entirely by hydrophytes.

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/2	100	— —				SL	mucky peat
6-14	10YR 3/1	50	5YR 4/6	10	C	M	CL	more coarse no organics
	7.5YR 5/2	40	— —	—	—	—	SL	more coarse no organics

[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): N/A

Hydric Soil Present? Yes ✓ No ___

Remarks: Prominent redox concentrations in the matrix in a layer that is greater than 4 inches thick and starts within the top 8 inches of soil fulfills the Redox Dark Surface (F6) hydric soil indicator.

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): ___

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

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 6

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks: Hoof prints in feature. Saturation (A3) of soil at 6 inches fulfills wetland hydrology. Additionally, vegetation passes FAC-Neutral test (D5) and Drainage Pattern (B10).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: McDonal Parcel Development/5460 King Road City/County: Loomis/Placer Sampling Date: 2017-12-15

Applicant/Owner: Ms. Morgan McDonald State: CA Sampling Point: 2

Investigator(s): Patrick Martin Section, Township, Range: Section 9, T11N, R7E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): C Lat: 38.823292 Long: -121.204885 Datum: NAD83

Soil Map Unit Name: 106-Andregg coarse sandy loam, 2 to 9 percent slopes NWI classification: None

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

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

Are Vegetation N, Soil N, or Hydrology N 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: Irrigated pasture dominated by hydrophytes represents uplands. Site lacks wetland hydrology and it occurs adjacent to a wetland swale (OP1).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Paspalum dilatatum	40	Y	FAC
2. Cynodon dactylon	35	Y	FACU
3. Cyperus eragrostis	15	N	FACW
4. Cenchrus clandestinus	10	N	FACU
5. Rumex pulcher	5	N	FAC
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. Rubus armeniacus	10	Y	FAC
2.			
	_____ = Total Cover		

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (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:

Y Dominance Test is >50%

N Prevalence Index is ≤3.0[1]

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

N 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: Dominated by hydrophytes.

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/1	100	--	--	--	--	SL	coarse sand
10-18	10YR 4/1	100	--	--				

[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): N/A

Hydric Soil Present? Yes ✓ No ___

Remarks: A low chroma of 1 or less in the matrix is indicative of a hydric soil (Corps 1987). Mottles were not detected.

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): ___

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

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

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks: Flood irrigated pasture. No wetland hydrology detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: McDonal Parcel Development/5460 King Road City/County: Loomis/Placer Sampling Date: 2017-12-15

Applicant/Owner: Ms. Morgan McDonald State: CA Sampling Point: 3

Investigator(s): Patrick Martin Section, Township, Range: Section 9, T11N, R7E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR): C Lat: 38.823480 Long: -121.205324 Datum: NAD83

Soil Map Unit Name: 106-Andregg coarse sandy loam, 2 to 9 percent slopes NWI classification: None

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

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

Are Vegetation N, Soil N, or Hydrology N 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: Pond margin on upslope edge along low point on hillslope. Appears to be water impoundment on natural drainages on gentle hillslope. Water is released through culverts that drain to ephemeral stream with wetlands.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' x 10')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' x 10')			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10' x 10')			
1. Leymus spp.	5	N	OBL
2. Schoenoplectus spp.	20	Y	OBL
3. Paspalum dilatatum	30	Y	FAC
4. Cyperus eragrostis	10	N	FACW
5.			
6.			
7.			
8.			
50 32.5 20 13	65	= Total Cover	
Woody Vine Stratum (Plot size: 10' x 10')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 35 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
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:

Y Dominance Test is >50%

N Prevalence Index is ≤3.0[1]

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

N 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: Dominated by hydrophytes including obligate wetland plants.

SOIL

Sampling Point: 3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 4/1	90	7.5YR 4/6	10	C	M	loamy sand	- pond margin
						PL		

[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): N/A

Hydric Soil Present? Yes ✓ No ___

Remarks: Prominent redox concentrations in the matrix in the top 10 inches of soil fulfill hydric soil criteria Depleted Matrix (F3). Redox is also present along porelinings of living root channels.

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): 6

Water Table Present? Yes ✓ No ___ Depth (inches): 7

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks: Margin of pond is saturated (A3), has a high water table (A2), and has surface water (A1). Oxidized rhizospheres are also present along the living root channels (C3). Wetland hydrology is fulfilled by A1-A3 and C3.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: McDonal Parcel Development/5460 King Road City/County: Loomis/Placer Sampling Date: 2017-12-15

Applicant/Owner: Ms. Morgan McDonald State: CA Sampling Point: 4

Investigator(s): Patrick Martin Section, Township, Range: Section 9, T11N, R7E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: 38.823496 Long: -121.205293 Datum: NAD83

Soil Map Unit Name: 106-Andregg coarse sandy loam, 2 to 9 percent slopes NWI classification: None

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

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

Are Vegetation N, Soil N, or Hydrology N 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: Data point represents irrigated pasture adjacent to a pond which supports wetlands. Irrigated pasture represents uplands.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20'x20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 20'x20')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 20'x20')			
1. Cynodon dactylon	50	Y	FACU
2. Trifolium dubium	25	N	UPL
3. Dittrichia graveolens	10.	N	--
4. Leontodon saxatilis	5.	N	FACU
5. Hypochaeris glabra	10.	N	FAC
6. Cyperus eragrostis	8	N	FACW
7.			
8.			
50 49 20 19.6	98 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
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:

N Dominance Test is >50%

N/A Prevalence Index is ≤3.0[1]

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

N 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: Wetland vegetation is present, but is dominated by upland vegetation.

SOIL

Sampling Point: 4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	7.5YR 4/1	100	- -	--	--	-	SCL	lots of clay

[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): NA

Hydric Soil Present? Yes ✓ No ___

Remarks: A low chroma of 1 or less in the matrix is indicative of hydric soil conditions (Corps 1987).

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): ___

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

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

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks: No wetland hydrology indicators detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: McDonal Parcel Development/5460 King Road City/County: Loomis/Placer Sampling Date: 2017-12-15

Applicant/Owner: Ms. Morgan McDonald State: CA Sampling Point: 5

Investigator(s): Patrick Martin Section, Township, Range: Section 9, T11N, R7E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR): C Lat: 38.823685 Long: -121.205996 Datum: NAD83

Soil Map Unit Name: 106-Andregg coarse sandy loam, 2 to 9 percent slopes NWI classification: None

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

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

Are Vegetation N, Soil N, or Hydrology N 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: Data point 5 represents a seasonal wetland swale that is situated on a low point of a hillslope. This location channels irrigation and rain water to the pond and it qualifies as a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20'x20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20x20)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10'x10')			
1. Paspalum dilatatum	30	Y	FAC
2. Carex praegracilis	20	Y	FACW
3. Cynodon dactylon	5	N	FACU
4. Cyperus eragrostis	10	N	FACW
5.			
6.			
7.			
8.			
50 42.5 20 17	85	= Total Cover	
Woody Vine Stratum (Plot size: 20'x20')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
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:

Y Dominance Test is >50%

N Prevalence Index is ≤3.0[1]

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

N 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: Hydrophytes in irrigated pasture.

SOIL

Sampling Point: 5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/1	100	—	—	—	—	SC	w/ muck - brown
4-10	7.5YR 4/1	100	—				SL	no organics

[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: hard layer

Depth (inches): 10

Hydric Soil Present? Yes ✓ No ___

Remarks: A low chroma of less than 1 in the matrix is indicative of a hydric soil (Corps 1987).

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): —

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

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 4

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks: Water is saturated at 4 inches below the surface which fulfills saturation (A3) hydric soil criteria. Water-stained leaves (B9) on blades of grass is also present. Drainage pattern (B10) is present and erosion between grass clumps from flowing water is evident. Site passes FAC-neutral test (D5).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: McDonal Parcel Development/5460 King Road City/County: Loomis/Placer Sampling Date: 2017-12-15

Applicant/Owner: Ms. Morgan McDonald State: CA Sampling Point: 6

Investigator(s): Patrick Martin Section, Township, Range: Section 9, T11N, R7E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0-1

Subregion (LRR): C Lat: 38.923697 Long: -121.205115 Datum: NAD83

Soil Map Unit Name: 106-Andregg coarse sandy loam, 2 to 9 percent slopes NWI classification: None

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

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

Are Vegetation N, Soil N, or Hydrology N 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: Data point 6 represents irrigated pasture dominated by upland vegetation. Hydric soil is present, although wetland hydrology is absent.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' x 20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' x 20')			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 60' x 20')			
1. Paspalum dilatatum	25	Y	FAC
2. Trifolium dubium	15	N	--
3. Hemispon americanus	12	N	UPL
4. Cyperus eragrostis	8	N	FACW
5. Cynodon dactylon	30	Y	FACU
6. Geranium molle	5	N	--
7.			
8.			
80 20 20 20	100	= Total Cover	
Woody Vine Stratum (Plot size: 10' x 20')			
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: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
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:

N Dominance Test is >50%

N/A Prevalence Index is ≤3.0[1]

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

N 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: Site is dominated by upland vegetation.

SOIL

Sampling Point: 9

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 4/1	100	--	-	-	-	SCL	rocks

[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: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: A low chroma of 1 or less in the matrix is indicative of hydric soil conditions (Corps 1987).

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): _____

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

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

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks: No wetland hydrology indicators detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: McDonal Parcel Development/5460 King Road City/County: Loomis/Placer Sampling Date: 2017-12-15

Applicant/Owner: Ms. Morgan McDonald State: CA Sampling Point: 7

Investigator(s): Patrick Martin Section, Township, Range: Section 9, T11N, R7E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): C Lat: 38.923788 Long: -121.205329 Datum: NAD83

Soil Map Unit Name: 106-Andregg coarse sandy loam, 2 to 9 percent slopes NWI classification: None

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

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

Are Vegetation N, Soil N, or Hydrology N 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: Data point represents uplands in valley oak woodland. Data point is adjacent to a ephemeral stream with wetlands.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10'x20')	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus lobata	20	Y	FACU
2. Juglans californica	5	Y	FACU
3.			
4.			
50: 12.5 20: 5	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10'x20')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 10'x20')			
1. Cichorium intybus	3	N	FACU
2. Cynosurus echinatus	10	Y	--
3. Cardus pycnocephalus	5	N	--
4. Geranium molle	3	N	--
5. Bromus diandrus	30	Y	--
6.			
7.			
8.			
50: 30.5 20: 6.2	61	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1. Rubus armeniacus	8	Y	FAC
2.			
	8	= Total Cover	

% Bare Ground in Herb Stratum 39 % 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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (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:

N Dominance Test is >50%

N/A Prevalence Index is ≤3.0[1]

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

N 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: Dominated by upland vegetation.

SOIL

Sampling Point: 7

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	7.5YR 3/1	100	--	-	-	-	SL	
3-12	7.5YR 3/4	100	--	-	-	-	SL	

[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): N/A

Hydric Soil Present? Yes ✓ No ___

Remarks: Low chroma of 1 or less in the matrix is indicative of hydric soil conditions (Camps 1987).

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): ___

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

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

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks: No wetland hydrology indicators detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: McDonal Parcel Development/5460 King Road City/County: Loomis/Placer Sampling Date: 2017-12-15

Applicant/Owner: Ms. Morgan McDonald State: CA Sampling Point: Y

Investigator(s): Patrick Martin Section, Township, Range: Section 9, T11N, R7E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR): C Lat: 38.823781 Long: -121.205351 Datum: NAD83

Soil Map Unit Name: 106-Andregg coarse sandy loam, 2 to 9 percent slopes NWI classification: None

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

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

Are Vegetation N, Soil N, or Hydrology N 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: Data point represents riparian wetland vegetation in a steeply eroded ephemeral stream. The ephemeral stream originates in the study area and drains to the pond. The stream enters a culvert before it enters the pond. ~~This stream is a natural stream.~~

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20'x20')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix gooddingii	12	Y	FACW
2. Populus fremontii	8	Y	FAC
3.			
4.			
50 10 20 4	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20'x8')			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 20'x8')			
1. Rumex pulcher	3	Y	FAC
2. Geranium molle	4	N	--
3. Cyperus eragrostis	6	N	FACW
4. Persicaria hydropiper	2	N	OBL
5. Paspalum dilatatum	15	Y	FAC
6. Carex praegracilis	5	N	FACW
7. Plantago lanceolata	5	N	FAC
8.			
50 22.5 20 9	45	= Total Cover	
Woody Vine Stratum (Plot size: 20'x8')			
1. Rubus armeniacus	12	Y	FAC
2.			
	12	= Total Cover	

% Bare Ground in Herb Stratum 55 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
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:

Y Dominance Test is >50%

N/A Prevalence Index is ≤3.0[1]

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

N 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: Dominated by hydrophytic vegetation.

SOIL

Sampling Point: 8

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	Gley 1 4/N	100	- -	-	-	-	SL	

[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): N/A

Hydric Soil Present? Yes ✓ No ___

Remarks: The soil color fulfills Loamy Gleyed Matrix (F2) hydric soil indicator.

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): ___

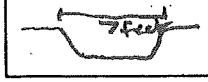
Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 10

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks: Scoured channel with saturated soil (A3) in addition to drainage pattern (B10). Stream channel originates in study area and drains to pond.



bankslope, veg comp/density.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: McDonal Parcel Development/5460 King Road City/County: Loomis/Placer Sampling Date: 2017-12-15

Applicant/Owner: Ms. Morgan McDonald State: CA Sampling Point: 1

Investigator(s): Patrick Martin Section, Township, Range: Section 9, T11N, R7E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): C Lat: 38.823753 Long: -121.205587 Datum: NAD83

Soil Map Unit Name: 106-Andregg coarse sandy loam, 2 to 9 percent slopes NWI classification: None

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

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

Are Vegetation N, Soil N, or Hydrology N 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: Ephemeral stream that supports riparian wetlands passes through the study area and is a tributary to Dry Creek. The stream has a defined ordinary high water mark and fulfills all wetland criteria.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10'x20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10'x20')			
1. Populus fremontii	15	Y	FAC
2.			
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 10'x20')			
1. Pasperlum dilatatum	50	Y	FAC
2. Rumex crispus	10	N	FAC
3. Persicaria hydropiper	20	Y	OBL
4. Cyperus eragrostis	15	N	FACW
5.			
6.			
7.			
8.			
50: 47.5 20: 19	95	= Total Cover	
Woody Vine Stratum (Plot size: 10x20)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
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:

Y 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: Dominated by hydrophytic vegetation.

SOIL

Sampling Point: 9

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/1	80	7.5YR 4/6	20	C	M/PL	SCL	

[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): N/A

Hydric Soil Present? Yes ✓ No ___

Remarks: Prominent redox concentrations are present on a Depleted Matrix (F3) which fulfills hydric soil indicator. Redox concentrations are present in the matrix and along pore linings of living root channels.

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): 0

Water Table Present? Yes ✓ No ___ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks: Surface water (A1) is present in cattle hoof prints in mud. A water table (A2) is present at 10 inches below the soil surface and soil is saturated (A3) to the surface. Oxidized rhizospheres (C3) are present along living root channels within 12 inches of the surface. Drift Deposits (B3) (riverine) and Drainage Pattern (B10) are also present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: McDonal Parcel Development/5460 King Road City/County: Loomis/Placer Sampling Date: 2017-12-15

Applicant/Owner: Ms. Morgan McDonald State: CA Sampling Point: UD

Investigator(s): Patrick Martin Section, Township, Range: Section 9, T11N, R7E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): C Lat: 38.823729 Long: -121.205621 Datum: NAD83

Soil Map Unit Name: 106-Andregg coarse sandy loam, 2 to 9 percent slopes NWI classification: None

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

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

Are Vegetation N, Soil N, or Hydrology N 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: Data point is located in irrigated pasture adjacent to an ephemeral stream with riparian wetlands. Hydric soils are present although the data point lacks hydrophytic vegetation and wetland hydrology.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 20'x20')			
1. Quercus wislizeni	10	Y	--
2.			
3.			
4.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot size: 20'x20')			
1. Populus fremontii	15	Y	FAC
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: 20'x20')			
1. Pastpalum dilatatum	20	Y	FAC
2. Cynodon dactylon	30	Y	FACU
3. Rumex crispus	10	N	FAC
4. Geranium molle	12	N	--
5. Vicia sativa	5	N	FACU
6. Typeus eragrostis	10	N	FACW
7.			
8.			
50: 43.5 20: 17.4	87 = Total Cover		
Woody Vine Stratum (Plot size: 20'x20')			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 13 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
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:

N Dominance Test is >50%

N/A Prevalence Index is ≤3.0[1]

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

N 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: Dominated by upland vegetation.

SOIL

Sampling Point: 10

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 4/1	100	—	—	—	—	SCL	
9-13	7.5 3/2	100	—	—	—	—	SL	

[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): N/A

Hydric Soil Present? Yes ✓ No ___

Remarks: A low chroma of 1 or less in the matrix is indicative of hydric soil conditions (Corps 1987).

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): ___

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

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

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks: No wetland hydrology indicators detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: McDonal Parcel Development/5460 King Road City/County: Loomis/Placer Sampling Date: 2017-12-15

Applicant/Owner: Ms. Morgan McDonald State: CA Sampling Point: 11

Investigator(s): Patrick Martin Section, Township, Range: Section 9, T11N, R7E

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

Subregion (LRR): C Lat: 38.923799 Long: -121.204433 Datum: NAD83

Soil Map Unit Name: 106-Andregg coarse sandy loam, 2 to 9 percent slopes NWI classification: None

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

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

Are Vegetation N, Soil N, or Hydrology N 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: Upland point in irrigated pasture is not a wetland. Site is irrigated with sprinklers which are active through the dry season.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20'x20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 20'x20')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 20'x20')			
1. Paspalum dilatatum	50	Y	FAC
2. Trifolium dubium	15	N	UPL
3. Cynodon dactylon	25	Y	FACU
4. Cichorium intybus	2	N	FACU
5. Plantago lanceolata	8	N	FAC
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 20'x20')			
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: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
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:

N Dominance Test is >50%

N/A Prevalence Index is ≤3.0[1]

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

N 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:

Dominated by upland vegetation.

SOIL

Sampling Point: 11

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/3	100	—	—	—		SL	

[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): N/A

Hydric Soil Present? Yes ____ No ✓

Remarks: No hydric soil indicators detected.

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): ____

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

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

Wetland Hydrology Present? Yes ____ No ✓

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

Remarks: No wetland hydrology indicators detected. Data point is watered by sprinklers during the dry-season (Summer/Fall).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: McDonal Parcel Development/5460 King Road City/County: Loomis/Placer Sampling Date: 2017-12-15

Applicant/Owner: Ms. Morgan McDonald State: CA Sampling Point: 12

Investigator(s): Patrick Martin Section, Township, Range: Section 9, T11N, R7E

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

Subregion (LRR): C Lat: 38.823264 Long: -121.204204 Datum: NAD83

Soil Map Unit Name: 106-Andregg coarse sandy loam, 2 to 9 percent slopes NWI classification: None

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

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

Are Vegetation N, Soil N, or Hydrology N 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: Data point represents a location in a eucalyptus grove that supports a obligate wetland plant and other hydrophytes. Data point lacks hydric soil and wetland hydrology indicators. This data point represents uplands.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 10' x 20')			
1. Eucalyptus globulus	20	Y	--
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' x 20')			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10' x 20')			
1. Persicaria hydropiper	35	Y	OBL
2. Paspalum dilatatum	10	N	FAC
3. Setaria pumila	20	Y	FAC
4. Cyperus eragrostis	10	N	FACW
5.			
6.			
7.			
8.			
SD: 35 20: 15	65	= Total Cover	
Woody Vine Stratum (Plot size: 10' x 20')			
1. Rubus armeniacus	10	Y	FAC
2.			
	10	= Total Cover	

% Bare Ground in Herb Stratum 35 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (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:

Y Dominance Test is >50%

N Prevalence Index is ≤3.0[1]

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

N 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: Dominated by hydrophytic vegetation.

SOIL

Sampling Point: 12

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 3/3	100	--	-	-	-	SL	

[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): N/A

Hydric Soil Present? Yes ____ No ✓

Remarks: No hydric soil indicators detected

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): ____

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

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

Wetland Hydrology Present? Yes ____ No ✓

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

Remarks: No wetland hydrology indicators detected.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: McDonald Parcel Development
Project Number:
Stream: SHWM-1 (Ephemeral stream w/ wetlands)
Investigator(s): P. Martin

Date: 2017-12-15 **Time:** 1030
Town: Loomis **State:** CA
Photo begin file#: Photo Point 9 **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: 5460 King Rd

Projection: **Datum:** NAD83
Coordinates: 38.823701, -121.205569

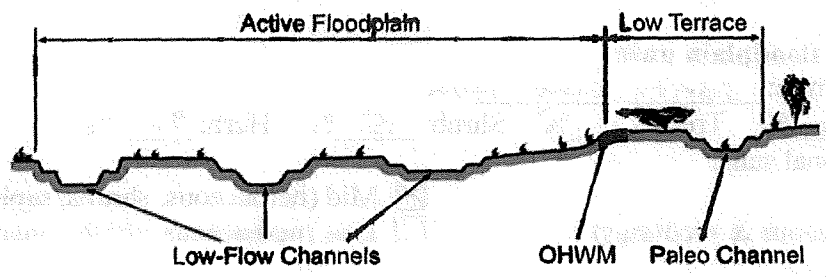
Potential anthropogenic influences on the channel system: Channel has been excavated, but is likely a natural channel. Material has been removed to prevent flooding.

Brief site description: Stream originates on northwestern perimeter, drains south through property to a pond on the property and continues south to an unnamed stream tributary to Secret Ravine. Natural stream that has been channelized up stream to convey runoff from surrounding landscape.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

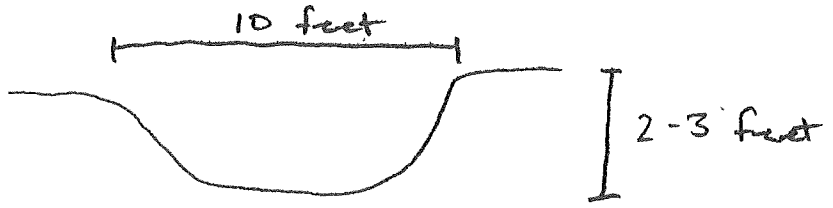


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: McDonald Parcel Development **Cross section ID:** OHWM-7 **Date:** 2017-12-15 **Time:** 1030

Cross section drawing:



OHWM

GPS point: 38.823701, -121.205569

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments: Stream channel has an abrupt break in bank slope and is dominated by hydrophytes. Soil consists of high clay content compared to soil above the channel and soil meets hydric soil criteria.

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy clay loam

Total veg cover: 100 % Tree: 0 % Shrub: 15 % Herb: 95 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments: Dominated by herbaceous riparian wetland vegetation. Stream flows north to south and fills up man made pond, which drains to a stream south of the property.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: McDonald Parcel Development
Project Number:
Stream: OHWM & Ephemeral Stream w/ wetlands)
Investigator(s): P. Martin

Date: 2017-12-15 **Time:** 1000
Town: Loomis **State:** CA
Photo begin file#: Photo Point 8 **Photo end file#:**

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: 5460 King Rd Loomis, CA

Projection: **Datum:** NAD83
Coordinates: 38.823834, -121.205309

Potential anthropogenic influences on the channel system: Channel may have been affected by development since the stream appears to start on the project site. Potential influences include collection and drainage of irrigation water, which drains to a pond.

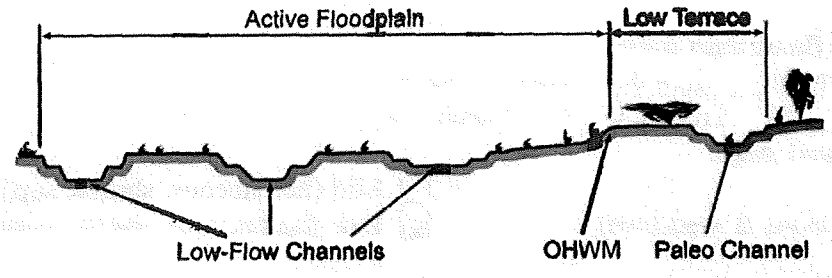
Brief site description: Ephemeral stream with wetlands originates near property boundary and drains south to pond via a culvert. Pond drains south to another unnamed stream system with wetlands which drains to Secret Ravine.

Checklist of resources (if available):

- [ ] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies

- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

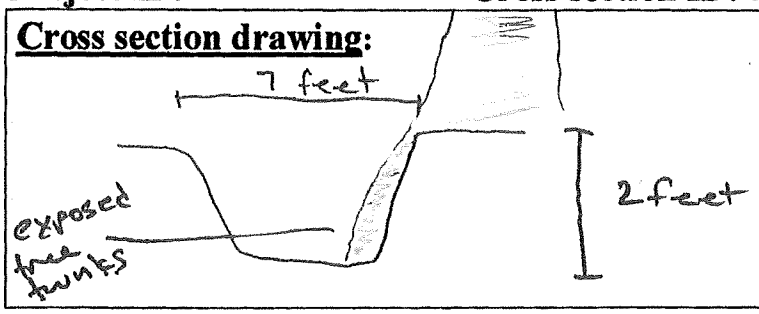


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [X] GPS
   - [ ] Digitized on computer
   - [ ] Other:

Project ID: McDonald Parcel Development **Cross section ID:** OHWM-2 **Date:** 2017-12-15 **Time:** 1000

Cross section drawing:



OHWM

GPS point: 38.823834, -121.205309

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments: Abrupt break in bankslope indicates OHWM, which supports wetland vegetation. Sediment texture is more coarse and consists of Loamy Gleyed Matrix.

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam - coarse

Total veg cover: 77 % Tree: 20 % Shrub: 12 % Herb: 45 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [x] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments: Supports large willows and Fremt cottonwood trees in the bank. Hydrophytic herbaceous is sparse, but dominates the channel, in addition to Rubus armeniacus. Does not appear to flow frequently and may be either a headwater or a remnant stream from development.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: McDonald's Parcel Development **Date:** 2017-12-15 **Time:** 930
Project Number: 17-026 **Town:** Loomis **State:** CA
Stream: Cattle Pond (open water) - OHWM3 **Photo begin file#:** **Photo end file#:**
Investigator(s): Patrick Martin DP03-328

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: 5460 King Rd

Projection: **Datum:** NAD83
Coordinates: 38.823372, -121.205347

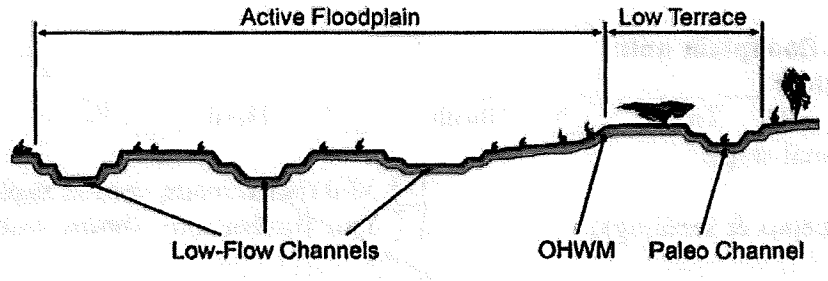
Potential anthropogenic influences on the channel system: This pond is an impoundment located on two ephemeral streams, which are natural features. This pond is periodically cleaned with vegetation and soil removed evidenced by recently excavated soil and bulrush. Pond is likely used to irrigate the pasture to provide forage for cattle.

Brief site description: Small pond is fed by two ephemeral streams with riparian wetlands. The pond supports fresh emergent wetlands along the margin of the pond. Most of the pond is open water. Open water lacks wetland vegetation and is considered other waters of the U.S. The pond drains south to an unnamed stream tributary to Secret Ravine.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates: 5/19/2017
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

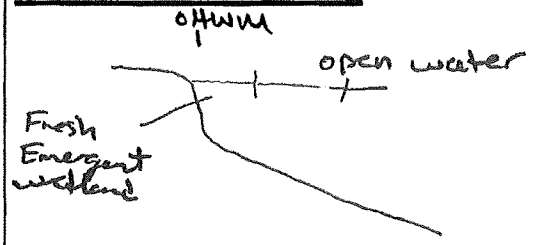


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☒ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: McDonald Parcel Project **Cross section ID:** OHWM-3 **Date:** 2017-12-15 **Time:** 930

Cross section drawing:



OHWM

GPS point: 38.823372, -121.205347

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: Pond is dominated by open water habitat with some fresh emergent wetland vegetation, but less than 5% dominance. Where fresh emergent wetland vegetation is greater than 5%, it is classified as fresh emergent wetland.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: 0 % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Appendix C.
Representative Photographs

Photo Point 1. Overview of Data Point 1 representative of wetland swale (W-1) (facing north).
Taken on December 15, 2017.

Photo Point 2. Overview of Data Point 2 representative of irrigated pasture in uplands (facing west).
Taken on December 15, 2017.

Photo Point 3. Overview of cattle pond (OHWM 3) and fresh emergent wetland (Data Point 3) (facing west).
Taken on December 15, 2017.

Photo Point 4. Overview of Data Point 4 (red arrow) representative of irrigated pasture in uplands (facing west).
Taken on December 15, 2017.

Photo Point 5. Overview of Data Point 6 representative of irrigated pasture in uplands (facing north).
Taken on December 15, 2017.

Photo Point 6. Overview of Data Point 5 representative of wetlands swale in uplands (facing northeast).
Taken on December 15, 2017.

Photo Point 7. Overview of Data Point 7 representative of uplands in valley oak woodland (facing west).
Taken on December 15, 2017.

Photo Point 8. Overview of Data Point 8 representative of riparian wetland in an ephemeral stream (facing north).
Taken on December 15, 2017.

Photo Point 9. Overview of Data Point 9 representative of riparian wetland in an ephemeral stream (facing northeast).
Taken on December 15, 2017.

Photo Point 10. Overview of Data Point 10 representative of uplands in irrigated pasture (facing northwest).
Taken on December 15, 2017.

Photo Point 11. Overview of Data Point 11 representative of uplands in irrigated pasture (facing northwest).
Taken on December 15, 2017.

Photo Point 12. Overview of Data Point 12 representative of uplands in irrigated pasture supporting an obligate hydrophyte.
Taken on December 15, 2017.

Appendix D
List of Vascular Plant Species Observed

Appendix D. Wetland Indicator Status for Plant Species Observed in the Survey Area

Scientific Name	Common Name	Wetland Indicator Status[a]
Acer saccharinum	Silver Maple	FAC
Acmispon americanus	American deerweed	UPL
Avena fatua	Wild oats	--
Bromus diandrus	Ripgut brome	--
Bromus hordeaceus	Soft brome	FACU
Carduus pycnocephalus	Italian thistle	--
Carex praegracilis	Field sedge	FACW
Cenchrus clandestinus	Kikuyu grass	FACU
Centaurea solstitialis	Yellow star thistle	--
Cichorium intybus	Chicory	FACU
Convolvulus sp.	Field bindweed	--
Cynodon dactylon	Bermuda grass	FACU
Cynosurus echinatus	Bristly dogtail grass	--
Cyperus eragrostis	Tall flatsedge	FACW
Dittrichia graveolens	Stinkwort	--
Echinochloa crus-galli	Barnyard grass	FACW
Erodium botrys	Broad-leaf filaree	FACU
Eucalyptus globulus	Blue gum	--
Festuca myuros	Rattail sixweeks grass	FACU
Geranium molle	Crane's bill geranium	--
Hirschfeldia incana	Short-podded mustard	--
Hordeum murinum	Foxtail barley	FACU
Hypochaeris sp.	Cat's ear	FACU
Juglans californica	California walnut	FACU
Juncus occidentalis	Western rush	FACW
Lactuca serriola	Prickly lettuce	FACU
Lemna spp.	Duckweed	OBL
Leontodon saxatilis	Lesser hawkbit	FACU
Ludwigia peploides	Floating primrose willow	OBL
Malva parviflora	Cheeseweed mallow	--
Medicago polymorpha	Bur clover	FACU
Paspalum dilatatum	Dallisgrass	FAC
Persicaria hydropiper	Common smartweed	OBL
Pinus muricata	Bull pine	--
Pinus sabiniana	Foothill pine	--
Plantago lanceolata	English plantain	FAC
Plantago major	Common plantain	FAC
Platanus racemosa	California sycamore	FAC

Scientific Name	Common Name	Wetland Indicator Status[a]
Poa annua	Annual blue grass	FAC
Poa pratensis	Kentucky blue grass	FAC
Populus fremontii	Fremont cottonwood	FAC
Quercus douglasii	Blue oak	--
Quercus lobata	Valley oak	FACU
Quercus palustris	Pin oak	--
Quercus wislizeni	Interior live oak	--
Ranunculus californicus	California buttercup	FACU
Rubus armeniacus	Himalayan blackberry	FAC
Rumex crispus	Curly dock	FAC
Rumex pulcher	Fiddle dock	FAC
Salix gooddingii	Goodding's black willow	FACW
Schedonorus arundinaceus	Tall false rye fescue	FACU
Schoenoplectus spp.	Bulrush	OBL
Setaria pumila	Yellow bristle grass	FAC
Silybum marianum	Milk thistle	--
Solanum americanum	Common nightshade	FACU
Sonchus asper	Spiny-leaf sow-thistle	FAC
Torilis arvensis	Field hedge parsley	--
Trifolium dubium	Shamrock clover	UPL
Trifolium hirtum	Rose clover	--
Typha latifolia	Common cattail	OBL
Vicia sativa	Garden vetch	FACU
Vitis californica	California grape	FACU
Washingtonia filifera	California fan palm	FAC

Sources: Environmental Laboratory 1987; Lichvar 2016; Baldwin et al. 2012.

[a] Indicator Status Definitions:

OBL	=	Obligate, almost always occurs in wetlands (>99% probability of occurrence)
FACW	=	Facultative wetland, usually occurs in wetlands (66%–99% probability)
FAC	=	Facultative, equally likely to occur in wetlands or nonwetlands (34%–66% probability)
FACU	=	Facultative upland, usually occurs in nonwetlands but occasionally in wetlands (1%–33% probability)
UPL	=	Obligate upland, almost never occurs in wetlands (<1% probability)
--	=	No indicator (insufficient information to assign an indicator status)

Appendix E
Aquatic Resources

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
W-1	CALIFORNIA	R6		Area	0.022	ACRE	DELINEATE	38.8239328	-121.2052846	
W-2	CALIFORNIA	R6		Area	0.022	ACRE	DELINEATE	38.82375885	-121.2055852	
W-3	CALIFORNIA	R6		Area	0.041	ACRE	DELINEATE	38.82361047	-121.2052262	
W-4	CALIFORNIA	PEM		Area	0.022	ACRE	DELINEATE	38.82339758	-121.2053852	
W-5	CALIFORNIA	POW		Area	0.061	ACRE	DELINEATE	38.82339796	-121.2054471	
W-6	CALIFORNIA	R6		Area	0.019	ACRE	DELINEATE	38.82332118	-121.2048813	
W-7	CALIFORNIA	R6		Area	0.007	ACRE	DELINEATE	38.82326146	-121.2056133	

Appendix F
WETS Table

WETS Table

WETS Station: AUBURN, CA

Requested years: 1905 - 2017

Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	54.5	36.2	45.4	6.94	3.76	8.46	9	0.9
Feb	58.4	38.9	48.6	5.85	3.00	7.15	8	0.4
Mar	62.5	41.4	51.9	5.17	2.55	6.29	7	0.4
Apr	68.3	44.7	56.5	2.64	1.16	3.18	4	0.1
May	76.5	50.1	63.3	1.23	0.44	1.39	3	0.0
Jun	85.6	56.4	71.0	0.37	0.00	0.34	1	0.0
Jul	93.2	61.9	77.5	0.05	0.00	0.00	0	0.0
Aug	92.0	61.0	76.5	0.07	0.00	0.00	0	0.0
Sep	86.3	56.8	71.5	0.43	0.00	0.29	1	0.0
Oct	76.5	50.2	63.4	1.74	0.63	1.89	2	0.2
Nov	64.0	42.7	53.4	3.97	1.73	4.74	5	0.1
Dec	55.6	36.8	46.2	5.68	2.79	6.90	7	0.4
Annual:					28.82	39.75		
Average	72.8	48.1	60.4	-	-	-	-	-
Total	-	-	-	34.14			49	2.5

GROWING SEASON DATES

Years with missing data:	24 deg = 35	28 deg = 39	32 deg = 34
Years with no occurrence:	24 deg = 60	28 deg = 17	32 deg = 0
Data years used:	24 deg = 78	28 deg = 74	32 deg = 79
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	No occurrence	1/21 to 1/7: 351 days	3/7 to 12/1: 269 days
70 percent *	No occurrence	12/31 to 1/29: 394 days	2/25 to 12/11: 289 days

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

STATS TABLE - total precipitation (inches)

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1905	M1.22		7.43	1.92	2.70	0.00			0.05				13.32
1906	M14.10		12.54	M2.66	4.75	1.61			0.25	T	2.22	M14.39	52.52
1907	M3.61				M0.22		0.00	0.00	0.00	M0.73	0.00	M2.53	7.09
1908	M3.62	M0.84	1.87	0.84	2.57	0.17	T	0.00	0.17	2.42	1.87	3.43	17.80
1909	23.08	10.24	2.80	0.11	0.02	0.30	0.00	0.00	0.30	2.55	6.54	5.82	51.76
1910	M1.80	M1.35	M4.20	1.80	0.12	0.00	0.00		M0.63	1.25	1.49	M3.30	15.94
1911	20.77	M2.73	6.06	2.03	0.42	0.25			0.05	0.46	1.26	0.92	34.95
1912	3.75	0.27	2.91	1.66	0.90	0.45		0.00	M1.00	M0.85		M0.71	12.50
1913	M1.00	M0.37	M0.70	1.43	1.22	0.00	0.04	T	0.	0.	3.52	5.76	14.

									00	00			04
1914	12.09	4.55	0.65	1.32	0.76	1.10			T	1.42	0.20	4.34	26.43
1915	5.33	10.04	1.45	1.02	4.06			0.00		T	1.53	6.09	29.52
1916	M12.13	5.60	2.60	0.35	0.64	T	0.00	T	M0.20	1.27	M2.54	6.40	31.73
1917	M4.13	M10.25	M2.36	M3.21	0.23	0.00		0.00	0.21	0.00	1.28	3.26	24.93
1918	1.73	8.89	8.40	M1.43	M0.09				3.99	M1.16	M3.81	M2.52	32.02
1919	3.65	14.60	4.60	0.58	0.04				M0.44	M0.06	M0.15	5.15	29.27
1920	M1.50	1.99	10.63	5.28		M0.41		M0.31	M0.26	M4.56	M8.36	M11.58	44.88
1921	M8.29	3.26	M4.93	0.59	M2.44	M0.02			MT	M0.62	1.55	M9.74	31.44
1922	M3.27	M11.71	M7.19	M1.23	M2.56	MT		M0.00		2.10	4.60	16.76	49.42
1923	5.75	1.67	0.54	7.30	0.29	0.39		0.02	2.02	1.19	0.20	2.29	21.66
1924	M2.61	3.43	2.19	0.70	0.12				0.00	5.74	2.25	5.80	22.84
1925	0.80	8.75	2.85	3.90	1.55	0.35		0.00	0.00		M1.90	M2.10	22.20
1926	M3.35	8.53	0.00	M6.97	0.95	0.00	0.00	0.00	T	M2.40	M9.90	1.65	33.75
1927	M5.20	M10.70	M2.75	5.30	0.55	0.60	0.00	0.00	T	1.85	M4.85	M4.95	36.75
1928	M1.60	M2.45	M10.70	M2.20	0.00	0.00	0.00	0.00	0.00	0.30	4.14	4.48	25.87
1929	2.53	3.35	M3.45	M2.50	T	M2.64	0.00	0.00	0.00	0.00	0.00	7.55	22.02
1930	7.48	2.15	4.92	2.51	0.26	0.00	0.00	T	0.27	0.36	3.58	0.58	22.11
1931	4.86	4.36	2.85	0.92	0.95	0.95	0.00	0.00	0.00	2.50	4.40	10.15	31.94
1932	4.40	5.39	1.49	3.05	1.80	0.00	0.00	0.00	0.00	T	1.26	2.97	20.36
1933	6.45	1.75	5.75	0.00	2.20	0.00	T	0.00	0.10	4.10	0.12	9.10	29.57
1934	5.40	6.27	0.68	0.40	1.00	0.95	0.00	0.00	0.25	2.59	4.47	3.45	25.46
1935	7.42	4.42	4.55	9.30	0.30	0.00	0.00	0.00	0.00	2.80	1.82	2.95	33.56
1936	11.05	16.48	2.52	2.45	0.88	1.04	0.00	0.00	0.00	0.55	0.10	4.77	39.84
1937	M8.20	10.67	10.37	3.02	0.20	1.05	0.00	0.00	0.00	M1.42	6.07	4.77	45.77
1938	4.22	13.90	M7.47	2.08	0.78	0.00	0.00	0.00	T		2.00	2.35	32.80
1939	4.16	M2.32	6.07	0.15	2.45	0.00	0.00	0.00	0.73	1.16	0.48	1.72	19.24
1940	16.17	11.38	9.21	1.82	0.33	T	0.00	0.00	0.38	1.90	4.05	13.89	59.13
1941	7.82	8.83	5.01	5.84	2.42	0.21	0.02	T	0.24	1.65	3.36	11.25	46.65
1942	7.94	7.45	3.08	9.95	4.19	0.00	0.00	0.00	0.05	0.62	7.68	M7.26	48.22
1943	10.08	3.71	9.36	3.17	0.33	M0.90	0.00	0.00	0.00	0.18	1.67	3.40	32.80
1944	5.07	9.44	3.07	2.56	0.97	0.51	T	0.00	0.00	3.27	6.55	4.00	35.44
1945	1.28	9.65	5.85	1.45	1.15	1.02	0.00	0.00	0.03	3.52	5.24	11.47	40.66
1946	1.73	2.93	5.87	0.19	1.12	0.00	0.03	0.00	0.85	1.94	5.68	3.22	23.56
1947	1.45	3.94	7.82	1.10	0.27	1.08	0.00	T	0.	5.	1.87	1.09	23.

									00	33			95
1948	3.07	3.67	6.48	7.06	3.57	0.02	0.00	T	T	0.22	2.74	7.47	34.30
1949	2.96	3.87	11.51	T	0.84	0.00	T	0.11	0.11	0.09	2.35	2.23	24.07
1950	10.61	4.82	5.88	2.39	1.33	0.21	T	T	0.91	4.23	13.92	9.67	53.97
1951	9.59	4.04	4.07	1.85	3.27	T	T	0.00	0.04	3.60	6.05	10.10	42.61
1952	15.56	5.11	7.81	1.12	0.55	0.67	0.05	M0.00	M0.38	0.05	3.06	9.45	43.81
1953	8.82	0.07	4.23	5.58	1.06	1.28	0.00	0.00	0.00	0.81	4.66	2.43	28.94
1954	6.90	4.98	7.09	3.22	0.37	0.55	0.00	0.27	T	0.28	3.60	9.10	36.36
1955	6.59	2.71	0.62	4.60	1.06	0.03	0.00	0.00	M0.00	0.85	2.86	M18.78	38.10
1956	13.78	3.96	0.18	3.03	3.41	0.03	T	0.00	0.67	3.68	0.06	0.97	29.77
1957	4.17	6.13	5.87	2.97	5.15	T	0.00	0.00	1.03	1.91	2.15	4.64	34.02
1958	7.67	10.54	10.22	7.22	1.18	0.88	T	T	M0.40	0.41	0.83	1.32	40.67
1959	7.48	6.39	2.04	1.85	0.11	0.00	0.00	0.01	2.47	0.00	T	1.94	22.29
1960	M6.93	8.34	4.50	2.20	0.87	0.00	T	T	0.28	0.14	6.86	1.97	32.09
1961	2.50	3.33	5.06	2.21	0.71	0.39	T	0.04	0.31	0.68	3.10	3.38	21.71
1962	3.19	13.64	3.37	1.91	0.23	0.01	0.02	0.24	0.14	13.86	1.44	4.31	42.36
1963	4.11	4.82	5.81	7.70	2.25	0.04	0.00	T	0.34	2.76	8.77	0.77	37.37
1964	6.37	0.78	2.39	0.59	2.32	0.56	0.00	0.19	0.04	2.38	6.61	14.17	36.40
1965	6.27	1.16	3.36	6.03	0.23	0.08	0.00	0.53	0.04	0.59	6.67	5.29	30.25
1966	4.29	2.74	1.63	1.31	0.45	0.02	0.10	0.03	0.05	0.00	10.38	6.39	27.39
1967	11.99	0.88	7.90	6.74	0.42	1.06	0.00	T	0.06	1.86	2.84	3.39	37.14
1968	5.58	4.99	3.54	0.63	0.83	0.37	0.03	0.73	0.02	3.29	6.26	5.58	31.85
1969	16.97	9.87	2.94	3.67	0.15	0.47	T	0.00	0.00	2.43	2.07	10.01	48.58
1970	13.66	2.81	4.02	0.47	0.02	1.11	0.00	0.00	0.00	2.48	12.07	10.71	47.35
1971	2.78	0.70	5.51	1.59	1.46	0.40	0.00	T	0.51	1.13	3.08	8.70	25.86
1972	2.28	3.52	1.18	2.85	0.59	0.22	0.00	0.00	1.07	2.13	6.80	4.96	25.60
1973	13.69	8.57	6.24	0.14	0.08	0.05	0.00	0.00	1.31	2.98	12.34	8.87	54.27
1974	7.00	3.37	11.00	3.19	0.00	0.56	2.97	T	0.00	1.88	2.32	3.01	35.30
1975	3.00	8.99	8.05	2.83	0.40	0.26	T	0.65	T	4.71	2.41	1.63	32.93
1976	0.52	2.44	1.48	2.14	0.00	0.04	T	1.59	1.36	0.03	1.75	0.41	11.76
1977	2.25	2.07	2.08	0.07	2.85	0.00	T	0.15	0.48	0.18	3.49	8.43	22.05
1978	13.15	5.55	8.17	6.75	0.12	0.01	0.00	0.00	2.24	0.00	5.87	1.95	43.81
1979	7.42	7.34	5.97	2.53	0.74	0.00	0.29	0.00	0.06	4.68	3.70	5.60	38.33
1980	9.93	9.98	4.92	1.96	1.23	0.06	0.89	0.02	0.01	0.52	0.72	2.82	33.06
1981	7.69	2.17	6.81	1.06	1.10	0.00	0.00	0.00	0.	4.	12.	10.	46.

									88	64	05	59	99
1982	7.77	5.04	10.97	7.63	0.00		0.02	0.00	2.91	6.42	9.76	8.20	58.72
1983	7.30	9.22	14.00	6.35	1.16	0.28	M0.00	0.07	1.03	1.02	13.45	10.99	64.87
1984	0.65	5.27	2.80	2.40	0.44	0.52	T	0.22	0.04	3.18	9.02	2.35	26.89
1985	0.80	3.14	5.83	0.13	0.00	0.29	0.02	0.19	1.94	0.82	8.59	4.08	25.83
1986	5.31	17.61	7.96	1.27	0.55	0.00	0.00	0.00	3.98	0.30	0.93	1.42	39.33
1987	4.44	5.20	7.04	0.31	0.38	M0.00	0.00	0.00	0.00	0.61	3.62	7.22	28.82
1988	4.77	0.26	1.14	4.37	M1.19	0.64	0.00	0.00	0.00	0.03	7.13	5.22	24.75
1989	1.98	1.99	15.26	1.20	0.21	0.47	0.00	0.36	3.26	3.64	2.50	0.00	30.87
1990	6.37	5.04	2.07	2.08	5.17	0.00	0.00	0.00	0.03	0.42	1.22	1.75	24.15
1991	0.81	3.43	M16.77	0.98	1.30	0.68	T	0.28	0.01	3.25	0.80	3.59	31.90
1992	3.12	10.51	3.47	1.84	0.00	0.94	0.00	T	0.00	M2.40	0.73	10.89	33.90
1993	12.17	9.39	5.10	1.56	1.67	1.52	0.00	0.00	0.00	1.21	3.66	4.74	41.02
1994	2.48	5.91	0.93	1.75	1.11	0.04	0.00	0.00	0.37	0.85	7.54	8.00	28.98
1995	18.42	0.83	16.37	3.97	4.13	1.57	T	0.00	0.00	0.00	0.12	8.18	53.59
1996	7.16	9.17	3.14	4.33	4.38	0.15	0.00	0.00	0.20	1.85	5.10	16.78	52.26
1997	16.27	0.96	1.25	1.49	0.37	0.64	0.02	0.47	0.26	2.92	5.77	4.53	34.95
1998	12.35	14.97	3.57	5.20	5.58	0.27	0.02	0.00	0.57	0.97	7.52	3.93	54.95
1999	7.26	10.57	3.02	1.69	0.64	0.21	0.00	0.08	0.00	0.88	3.96	0.77	29.08
2000	11.18	15.16	2.77	2.01	2.19	0.59	0.00	0.00	0.72	4.21	0.79	0.82	40.44
2001	4.46	6.18	2.86	3.40	0.00	0.14	0.00	0.00	0.45	0.65	4.97	9.46	32.57
2002	5.75	3.65	6.39	0.71	2.42	0.00	0.00	0.00	0.00	0.00	2.85	11.75	33.52
2003	M2.23	M2.51	M3.89	7.09	M1.46	M0.00	M0.00	M0.47	0.00	MT	M3.16	7.72	28.53
2004	M3.53	M7.24	M1.17	M0.76	M0.13	M0.00	0.00	M0.00	M0.00	M3.88	M4.44	M7.21	28.36
2005	M2.96	M0.92	M6.67	M0.95	M2.76	M1.41	M0.00	M0.00	M0.64	M0.89	M2.42	M4.67	24.29
2006	M3.28	M3.17	M7.71	M5.44	M0.39	M0.00	M0.00	M0.00	M0.00	MT	M1.36	M3.16	24.51
2007	M0.70	M6.44	M0.02	M2.71	M0.72	M0.00	M0.00	M0.00	M0.22	M1.25	M0.00	M3.45	15.51
2008	M3.74	M1.98	M0.11	0.32	0.06	0.00	0.00	0.00	0.00	0.88	M0.86	M0.89	8.84
2009	M2.57	M2.00	M2.35	1.49	M2.51	0.45	0.00	0.00	M0.00	M1.69	M0.46	M1.76	15.28
2010	M5.09	M4.12	3.29	M3.00	2.26	0.06	0.00	0.00	0.00	M0.14	M2.39	M5.84	26.19
2011	M2.25	M6.32	M12.13	M0.58	M2.67	M2.97	M0.00	M0.00	M0.00	M2.90	M0.84	M0.03	30.69
2012	M0.90	M1.81	M10.15	M6.47	M0.09	M0.21	M0.03	MT	M0.00	M1.95	M7.93	M11.19	40.73
2013	M0.63	M0.50	M1.49	M1.64	M0.72	M0.89	M0.00	M0.00	M0.37	M0.19	M1.68	M0.41	8.52
2014	M0.56	M4.93	M4.96	M1.79	M0.46	M0.00	M0.01	M0.00	M0.97	M0.38	M3.67	M12.74	30.47
2015	M0.00	M3.26	M0.25	M1.45	M0.36	M0.24	M0.00	M0.00	M0.	M0.	M3.	M6.	15.

									09	00	56	44	65
2016	M5.19	1.40	M7.55	M1.21	M1.28	M0.00	M0.00	M0.00	0.00	M3.13	M0.93	M3.42	24.11
2017	M10.00	M8.35	M3.66	M4.09	M0.58	M0.20	M0.00	M0.00	M0.00	M0.78	5.82	M0.00	33.48

Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.

Data missing for all days in a month or year is blank.

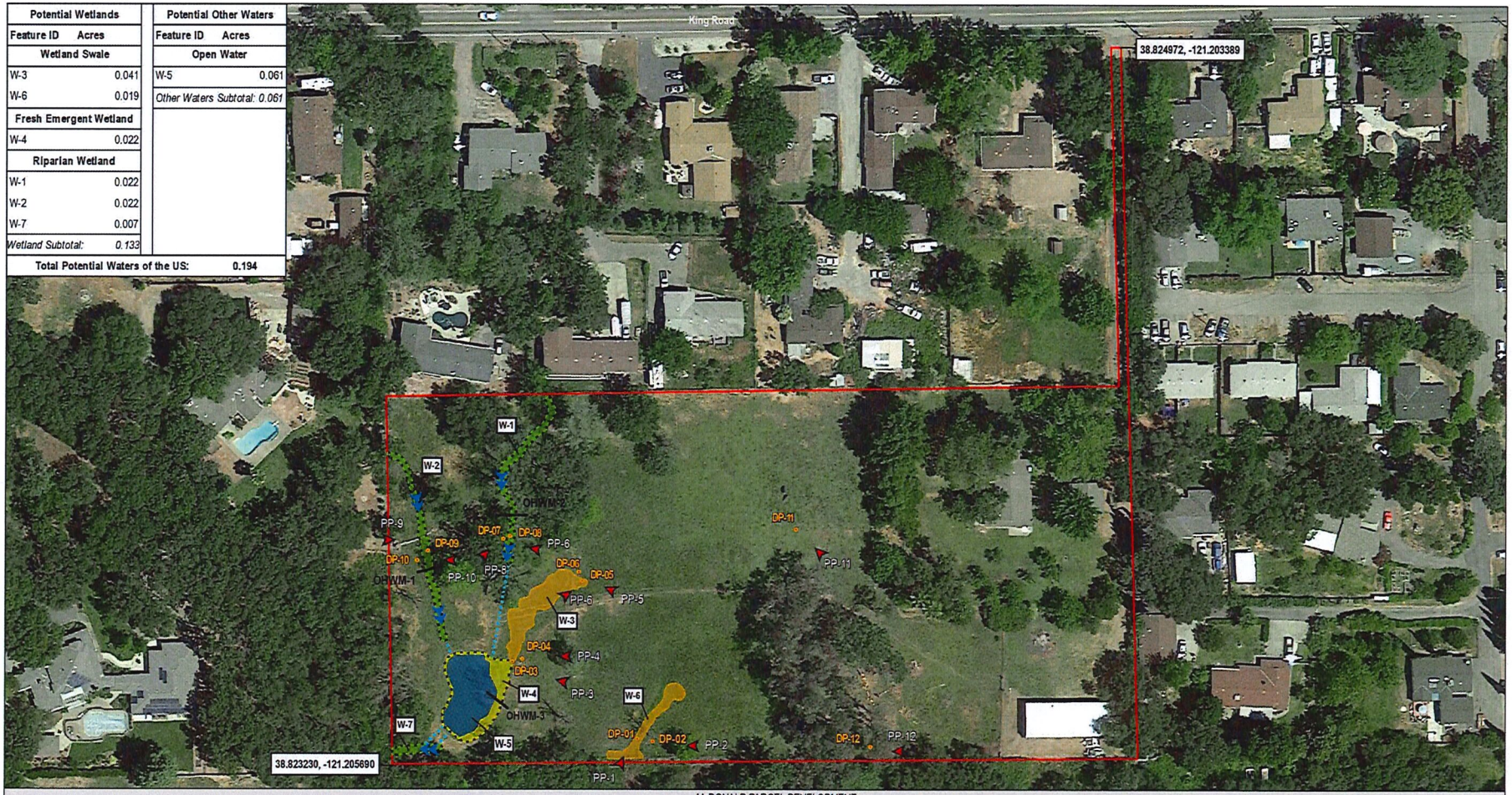
Creation date: 2016-07-22

Exhibit A
Aquatic Resources Delineation Map

Potential Wetlands	
Feature ID	Acres
Wetland Swale	
W-3	0.041
W-6	0.019
Fresh Emergent Wetland	
W-4	0.022
Riparian Wetland	
W-1	0.022
W-2	0.022
W-7	0.007
Wetland Subtotal:	*0.133*

Potential Other Waters	
Feature ID	Acres
Open Water	
W-5	0.061
Other Waters Subtotal: 0.061	

Total Potential Waters of the US: 0.194



McDONALD PARCEL DEVELOPMENT

DELINEATION OF WATERS
OF THE U.S.
FOR
MCDONALD/MACK MINOR LAND DIVISION PROJECT

Survey Area (5.117 acres)
Photo Point and Direction
Data Points
Flow Direction
Culverts
Ordinary High Water Mark (OHWM)
OHWM Cross Sections

Potential Aquatic Resource Classification
Fresh Emergent Wetland (0.022 acre)
Open Water (0.061 acre)
Riparian Wetland (0.051 acre)
Wetland Swale (0.060 acre)

Delineation performed by:
- Patrick Martin
Mapping performed by:
- Samuel Price

0 50 100 feet

Data Source:
- ESRI Aerial Basemaps, July 11, 2016; Area West Environmental, Inc. 2017; Date: 1-12-18

AREA WEST ENVIRONMENTAL, INC.