DRAFT Aquatic Resources Delineation Report

28th Street and Q Street
Rio Linda, Sacramento County

Prepared For: Thomas Law Group
ATTN: Nick Avdis
455 Capitol Mall, Suite 801
Sacramento, CA 95814

Report Date: July 2022

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Project Team

Report Author(s):	Krystal Pulsipher, Tatiana Torrez
Field Surveyor(s):	Krystal Pulsipher, Tatiana Torrez
GIS:	Andrew Myers, David Duncan
Project Manager:	Kevin Ghalambor
Review Teams:	James Stewart, Kevin Ghalambor

Recommended Citation: Bargas Environmental Consulting. 2022. DRAFT Aquatic Resources Delineation – 28th Street and Q Street, Rio Linda, Sacramento County, California. Report prepared for Thomas Law Group.

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1 Introduction

This report presents the results of the Aquatic Resources Delineation (ARD) conducted by Bargas Environmental Consulting (Bargas) for the proposed 28th Street & Q Street Project (hereafter, Project) located in unincorporated Sacramento County, California (Study Area). The purpose of the delineation was to identify whether aquatic resources occur within the Study Area and to provide the U.S. Army Corps of Engineers (USACE) with sufficient information to determine if these aquatic resources are jurisdictional wetlands or other waters of the United States (U.S.), as defined by the USACE under Section 404 of the Clean Water Act (CWA). Permission to enter the Study Area to complete field verification by USACE must be verified in writing by the Applicant and Applicant's Agent prior to access.

1.1 Project Applicant and Agent

Applicant	Agent
Thomas Law Group ATTN: Nick Avdis 455 Capitol Mall, Suite 801 Sacramento, CA 95814	Bargas Environmental Consulting LLC ATTN: Kevin Ghalambor 3604 Fair Oaks Boulevard, Suite 180 Sacramento, CA 95864

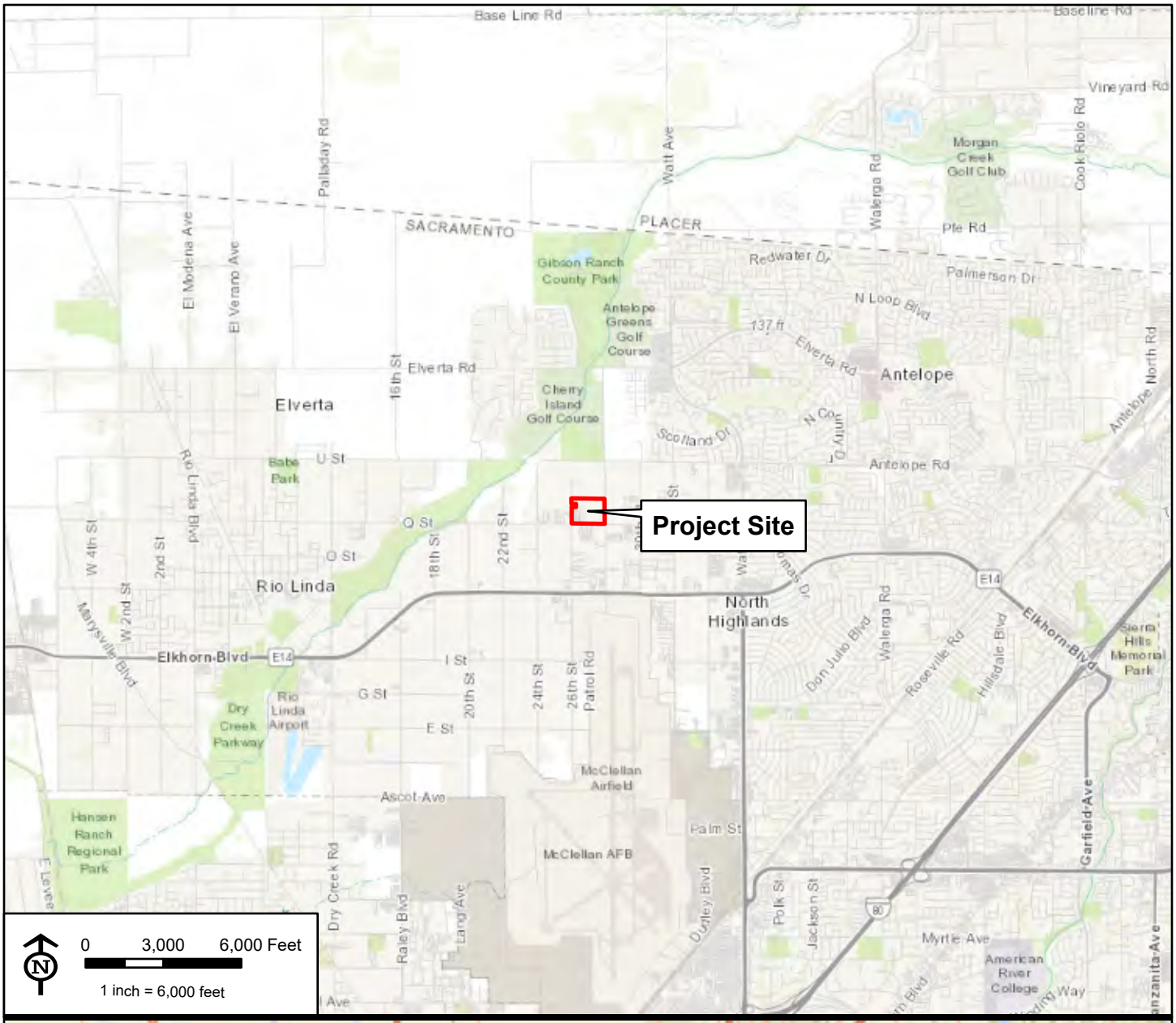
1.2 Project Location

The Study Area is approximately 27.6 acres in size and located west of 28th Street, north of Q Street, and east of 26th Street, approximately 0.27-mile south of U Street in the census designated place of Rio Linda in unincorporated Sacramento County, California (**Exhibits 1** and **2**). The Study Area is comprised of six APNs including 208-0022-001, 208-0022-002, 208-0012-015, 208-0012-016, 208-0012-017, and 208-0012-020. The approximate center point of the Project is at coordinates 38.699191°, -121.403734° and is located within the Del Paso Land Grant.

From Sacramento, the Study Area may be accessed via Interstate 5 North to Interstate 80 East. Take exit 91 and turn left on Raley Boulevard (turns into 16th Street) and follow it north for approximately 3.2 miles. Turn right onto Elkhorn Boulevard and continue for approximately 1.6 miles. Turn left onto 28th Street and continue for approximately 0.5 miles to the project site.

1.3 Project Description

This study was conducted in support of potential future parcel rezoning.



Source: ESRI ArcGIS Online Basemap - World Topographic Map, World Street Map

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Public Land Survey System (PLSS):
Mount Diablo Meridian, Township 010N, Range 5E, Section 00

USGS Quad(s): Rio Linda (1973)

Watershed: Lower American (18020111)

Project Site Coordinates: -121.404°W 38.699°N

Exhibit 1
Project Site and Vicinity

28th Street and Q Street

Map Created: 6/20/2022, Map Revised: N/A, Bargas Project Number: 1483-21

Source: Bing Maps Hybrid

0 250 500 Feet

1 inch = 500 feet

BARGAS Environmental Consulting

Study Area (27.6-acres)

Exhibit 2
Study Area

28th Street and Q Street

Map Created: 6/20/2022, Map Revised: N/A, Bargas Project Number: 1483-21

2 Regulatory Setting

The regulatory setting is framed by current enabling legislation and case law. Under Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill materials into "waters of the U.S." Jurisdictional waters of the U.S. include "territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide; tributaries; lakes and ponds, and impoundments of jurisdictional waters; and adjacent wetlands" (33 Code of Federal Regulations [CFR] § 328.3). Certain waters of the U.S. are considered "special aquatic sites" because they are generally recognized as having ecological value; such sites include sanctuaries and refuges, wetlands, mudflats, vegetated shallows, and riffle and pool complexes (40 CFR § 230). Special aquatic sites are defined by the U.S. Environmental Protection Agency (USEPA) and may be afforded additional consideration in a project's permit process. The USACE also regulates navigable waters under Section 10 of the Rivers and Harbors Act of 1899. Navigable waters are defined as "… those waters of the U.S. that… are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce" (33 CFR § 322.2). Projects that place fill in jurisdictional wetlands and non-wetland waters of the U.S. require a permit from the USACE under Section 404 of the CWA. The USACE issues nationwide permits for specific types of activities with minimal individual or cumulative adverse environmental impacts. Individual permits are required for large and/or complex projects or projects that exceed the impact threshold for nationwide permits. Recent federal rulemaking has modified how the USACE defines certain waters of the U.S. The most pertinent rules are summarized below.

Wetlands are defined under 33 C.F.R. 328.3(c)(16) as:

> *Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.*

The limits of USACE jurisdiction in non-tidal waters extends to the Ordinary High-Water Mark (OHWM) which is defined under 33 CFR 328.3(c)(7) as:

> *…That line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

Non-wetland features include:

> *…Upland and lowland areas that are neither deep water aquatic habitats, wetlands nor other special aquatic sites. They are seldom or never inundated, or if frequently inundated, they have saturated soils for only a brief period of time during the growing season. If these features are vegetated, they normally support species that are predominantly adapted to aerobic soil conditions (USACE 1987).*

The Environmental Protection Agency (EPA) and Army Corps of Engineers published a proposed revised definition of "waters of the United States" on December 7, 2021, in response to President Biden's Executive Order 13990

(86 Federal Register 7037) and after Pascua Yaqui Tribe v. EPA in which the U.S. District Court of the District of Arizona "vacated and remanded" the Navigable Waters Protection Rule (86 Federal Register 69372). The proposed revision has not been finalized at the time of this report, but since the district court vacated the Navigable Water Protection Rule on August 30, 2021, the agencies have halted implementing the Navigable Waters Protection Rule and have interpreted the definition that is consistent with the pre-2015 regulations and the Supreme Court cases of Rapanos vs. United States and Carabell vs. United States (USEPA 2008), meaning the USACE will assert jurisdiction over traditional navigable waters (TNW) and the following types of features determined to have "significant nexus" to a TNW:

- wetlands adjacent to TNWs
- non-navigable tributaries of TNWs that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally
- wetlands that directly abut non-navigable tributaries of TNWs

3 Methodology

This report has been prepared per the USACE South Pacific Division Regulatory Program minimum standards (USACE 2016). In addition, the following manuals and guidance were used to delineate waters of the U.S. and wetlands that are potentially subject to USACE jurisdiction under Section 404 of the CWA:

- *Corps of Engineers Wetland Delineation Manual* (USACE 1987);
- *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West (Version 2.0)* (USACE 2008a);
- *A Field Guide to the Identification of Ordinary High-Water Mark in the Arid West Region of the Western United States, A Delineation Manual* (2008b).

Prior to conducting the field aquatic resources delineation, the following information sources were reviewed:

- Aerial imagery of the Study Area and vicinity (Google 2022; Microsoft 2022);
- U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory (NWI) (USFWS 2022) to determine if surface waters and wetlands have been mapped on or adjacent to the Study Area;
- U.S. Geological Survey's National Hydrography Dataset (NHD) (USGS 2022) to determine if hydrological features have been mapped on or adjacent to the Study Area;
- U.S. Department of Agriculture National Resource Conservation Service (NRCS) soil survey maps and unit descriptions (NRCS 2022) to map and describe soil(s) within the Study Area.

3.1 Delineation Survey and Field Conditions

Bargas biologists Krystal Pulsipher and Tatiana Torrez conducted the aquatic resources delineation on Thursday, May 5, 2022, from 0800 to 1730, Wednesday June 1, 2022, from 0745 to 1700, and Thursday June 2, 2022, from 0745 to 1130. Weather conditions ranged from being mostly cloudy with a light breeze at 59°F to being sunny and clear at 90°F. The delineation consisted of walking meandering transects throughout the Study Area to identify wetlands or waterways potentially under the jurisdiction of the USACE. Where wetlands were suspected to be present based on aerial signatures and conditions observed in the field, soil pits were excavated to a depth of approximately 18 inches or until an impermeable layer was reached. The three wetland criteria (hydrophytic vegetation, hydric soils, and wetland hydrology) were evaluated following the USACE protocol for the Arid West (USACE 2008a). The locations of the soil pits, photo points, and wetland features were noted on aerial images of the Study Area. Mapped soil types in the Study Area were determined using the NRCS Web Soil Survey, Custom Soil Resource Report (NRCS 2022). A standard Munsell® Soil Color Chart was used to determine soil matrix and mottle colors (Kollmorgen Instruments Company 2000) in the field. Where present, the OHWM for all potential non-wetland waters of the U.S. present were delineated. Plant community names follow *A Manual of California Vegetation: Second Edition* (CNPS 2022), where applicable. Plant nomenclature followed Jepson eFlora (2021). The *USACE National Wetland Plant List (NWPL), version 3.4* (USACE 2020), was used to determine the status of observed plants as wetland indicator species. Datasheets are presented in **Appendix D**. Site photographs are presented in **Appendix B**.

3.2 Mapping

Wetland boundaries within the Study Area were surveyed and mapped using an EOS Arrow 100 Global Positioning System (GPS) technology receiver paired with the EOS Tools Pro and ESRI ArcMap Collector applications. This GPS

is capable of real-time differential correction and sub-meter accuracy. The GPS data were downloaded through ArcGIS Online and converted into ESRI shapefile format. The geographic coordinate system used to reference the data was Universal Transverse Mercator (UTM–Zone 10), North American Datum (NAD83) in meters.

Each wetland was assessed by determining the wetland feature/upland edges and by observing the mandatory wetland indicators at selected points along each transect as defined by the 1987 Manual (USACE 1987), the Regional Supplemental Manual (USACE 2008a), and Guide to OHWM (USACE 2008b). Potential wetland boundaries were mapped at a level of accuracy of less than one meter. Soil pits were hand-excavated to obtain soil data for wetlands. Data were overlaid on an aerial photograph provided by ESRI ArcGIS World Imagery. The ESRI data and GIS software were used to calculate the acreage of each polygon. Mapping requirements, as set forth by *Updated Map and Drawing Standards for the South Pacific Division Regulatory Program* (USACE 2016a) and the *Information Requested for Verification of Corps Jurisdiction* in the San Francisco District (USACE 2016b) were followed.

3.3 Determination Method

All data forms and sheets are presented in **Appendix D**. Data for each potential wetland were collected using the USACE Wetland Determination Data Form – Arid West Region (USACE 2013). Data forms were completed at representative locations to determine whether suspect features qualify as jurisdictional wetlands or other waters of the U.S. Wetlands were determined based on the presence of the three factors that define wetlands – the presence of dominant hydrophytic vegetation, the presence of hydric soils, and wetland hydrology indicators.

Data for each potential stream were collected using the *USACE Arid West Ephemeral and Intermittent Streams OHWM Datasheet* (USACE 2008b, 2010). Data for each stream feature were collected at representative cross sections with observations on sediment texture and vegetation characteristics summarized for each floodplain unit present. The OHWM for each stream feature were determined based upon the presence of certain indicators which can include a change in average sediment texture, vegetation species, vegetation cover, and breaks in bank slope.

4 Environmental Setting

The 27.6-acre Study Area is within the census-designated place of Rio Linda in unincorporated Sacramento, California, in an area characterized by rural residential and commercial land uses. Industrial and/or commercial land uses are present to the east, west, and south of the Study Area, with rural residential land uses present to the north, northwest, southwest, and northeast. Elevation ranges from approximately 70 feet to 85 feet, with the elevation decreasing from south to north. The northwestern parcel (APN 208-0012-015) of the Study Area currently contains an industrial equipment yard, and the adjacent parcel (APN 200-0012-020) to the southeast contains a house and driveway. The southwestern parcel (APN 208-0012-001) of the Study Area currently contains an RV and mini-storage facility with ornamental landscaping on the southern and western borders. The southeastern (APN 208-0022-002) and northeaster (APN 208-0012-017) parcels are undeveloped and grazed by livestock. Google Earth historical aerials show the presence of a residential home in the northeast quadrant of the pasture prior to February 2018. The aerial image from October 2020 suggests the pasture may have been graded. Representative site photographs are presented in **Appendix B**.

4.1 Vegetation Communities

The western half of the Study Area can be characterized as urban / developed land cover. Along the western and southwestern borders there is ornamental landscaped vegetation that appears to be regularly managed. Five vegetation communities were observed in the undeveloped eastern half of the Study Area. A list of plant species, and their NWPL indicator status, observed in the Study Area is presented in **Appendix A**.

4.1.1 Wild Oats and Annual Brom Grassland

The majority of undeveloped half can best be described as Wild Oats and Annual Brome Grassland (*Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance; CNPS 2022). The dominant grass species observed in this community include Wild Oat (*Avena fatua;* NL), Rescue Grass (*Bromus catharticus;* NL), Ripgut Grass (*B. diandrus;* NL), Soft Chess (*B. hordeaceus;* FACU), Medusa Head (*Elymus caput-medusae;* NL), Beardless Wild-Rye (*E. triticoides;* FAC), and Rye Grass (*Festuca perennis*, formerly *Lolium perenne;* FAC). Herbaceous forbs also observed include Stinkwort (*Dittrichia graveolens;* NL), Hawkbit (*Leontodon saxatilis;* FACU), and Common Toad Rush (*Juncus bufonius;* FACW).

4.1.2 Perennial Rye Grass Fields

The vegetation community observed in all three seasonal wetland swales (SWS-1, SWS-2, SWS-3) and four of the five seasonal wetlands (SW-1, SW-2, SW-3, SW-4) can best be described as Perennial Rye Grass Fields (*Lolium perenne* Herbaceous Semi-Natural Alliance; CNPS 2022). The vegetation observed within the aquatic features have been more heavily impacted by livestock grazing activities at the time the surveys were completed, causing them to be generally more sparsely vegetated. Some of the plant species observed are more closely associated with natural vegetation community alliances observed in less disturbed seasonal wetlands and vernal pools present in the Central Valley. The dominant species observed include Hyssop Loosestrife (*Lythrum hyssopifolia;* OBL), Beardless Wild-Rye, Seaside Barley (*Hordeum murinum;* FAC), Coyote Thistle (*Eryngium vaseyi;* FACW), and Toad Rush. The prevalence of non-native plant species and species that are able to tolerate dryer conditions indicates the vegetation communities present are likely in a transitional period of shifting from a natural vegetation community that would have been dominated by native water-loving species to a semi-natural upland community.

Grazing pressures and drought brought on by climate change are likely contributing to this shift in vegetation communities.

4.1.3 Pale Spike Rush Marsh

The vegetation community observed within one seasonal wetland (SW-5) located along a seasonal wetland swale (SWS-2) can best be described as Pale Spike Rush Marsh (*Eleocharis macrostachya* Herbaceous Alliance; CNPS 2022). The dominant plant species observed was Spike Rush (*Eleocharis macrostachya;* OBL) with Coyote Thistle observed within the periphery of the feature.

4.1.4 Eucalyptus – Tree of Heaven – Black Locust Groves

The northeast quadrant of the pasture contains tree cover. The majority of the tree cover can best be characterized as Eucalyptus – Tree of Heaven – Black Locust (*Eucalyptus* spp. - *Ailanthus altissima* - *Robinia pseudoacacia* Woodland Semi-Natural Alliance). The dominant species observed was Tree of Heaven (*Ailanthus altissima;* FACU) with Black Locust (*Robinia pseudoacacia;* FACU) also observed to be present. Other non-native species observed include American Sycamore and White Poplar.

4.1.5 Valley Oak Woodland and Forest

A few smaller patches of Valley Oak Woodland and Forest (*Quercus lobata* Woodland Alliance) were also observed in the northeast quadrant of the pasture. The dominant species observed was Valley Oak (*Quercus lobata;* FACU) with Interior Live Oak (*Q. wislizeni;* NL) also observed.

4.2 Soils

Mapped soil types in the Study Area were determined using the NRCS Web Soil Survey (NRCS 2022). **Table 1** below identifies the soil type by series and subgroup, map symbol, and hydric characteristics. The soils mapped in the Study Area are presented in **Exhibit 3** and the NRCS Custom Soil Resource Report is presented in **Appendix C**.

Table 1. Soil Types within the Study Area

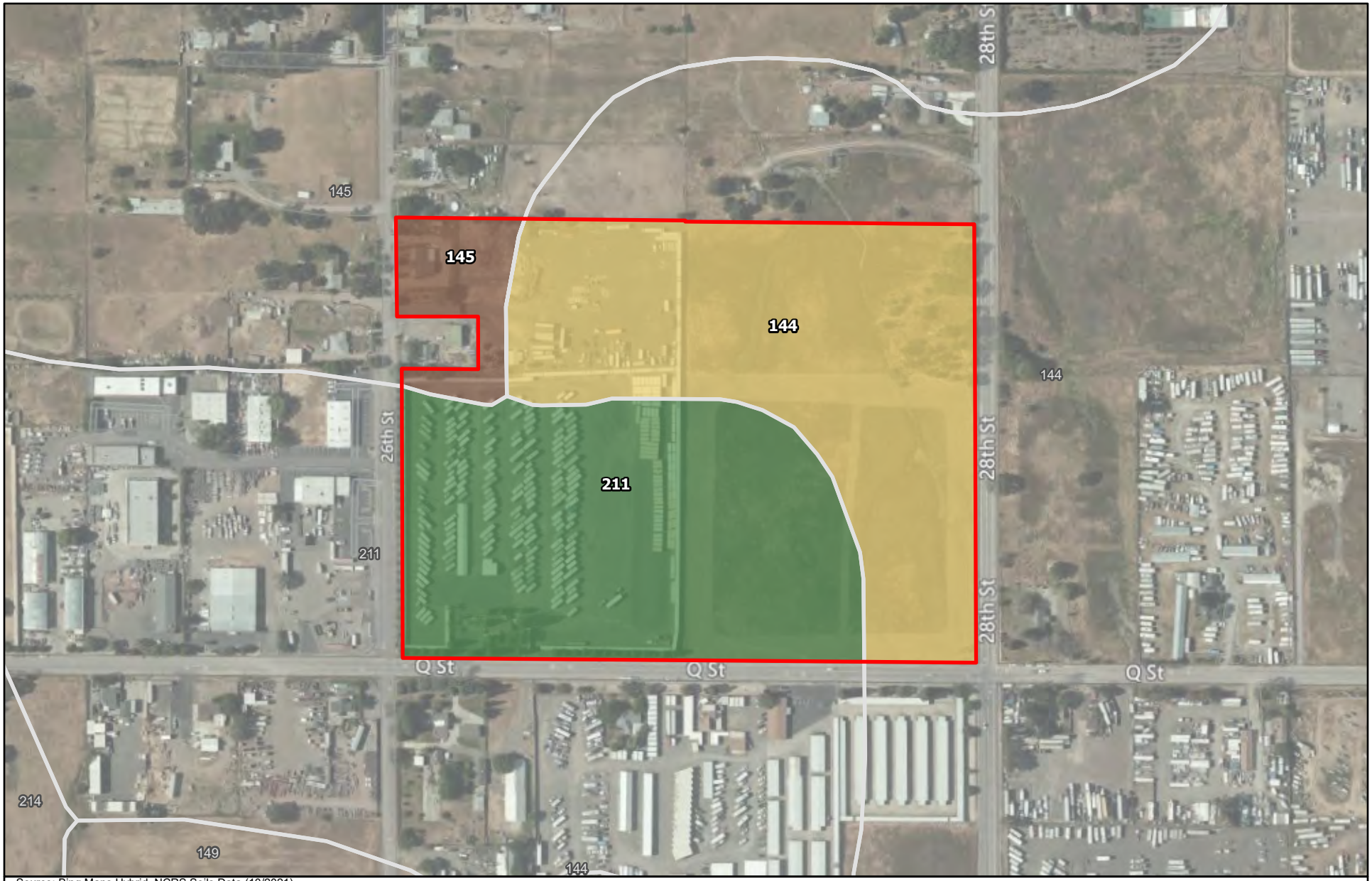
Soil Series	Map Symbol	Parent Material	Drainage Class	Hydric Rating
Fiddyment fine sandy loam, 0 to 1 percent slopes	143	Residuum weathered from sedimentary rock	Well drained	No
Fiddyment fine sandy loam, 1 to 8 percent slopes	145	Residuum weathered from sedimentary rock	Well drained	No
San Joaquin fine sandy loam, 0 to 3 percent slopes	211	Alluvium derived from granite	Well drained	No

Source: NRCS 2022

4.3 Hydrology

The Study Area is situated within the Gibson Lake-Dry Creek subwatershed (HUC-12 180201110105) of the Lower American watershed (HUC-8 18020111; USGS 2022). The Study Area is located approximately 0.57 miles southeast of Dry Creek. The hydrologic regime in the Study Area is influenced by seasonal precipitation, stormwater runoff and sheet flow from adjacent lands, and overflow from the drainage ditches along the southern and eastern boundary of the Study Area. Seven wetland features (three seasonal wetland swales, five seasonal wetlands, roadside ditch) observed within the Study Area drain into a parcel north of and outside of the Study Area via two swales. Two aquatic features appear to be isolated and do not share a surface hydrologic connection to the swales

draining to the north. The two swales converge into a single linear feature on the property immediately north of the Study Area, draining to the northwest where it discharges to an unnamed intermittent stream approximately 810 feet north of the Study Area. The unnamed intermittent stream is a tributary of Dry Creek, a perennial stream located approximately 0.57 miles northwest of the Study Area. Dry Creek is tributary to the Natomas East Main Drainage Canal (Steelhead Creek) which in turn is a tributary of the American River. The American River discharges to the Sacramento River, a TNW under the jurisdiction of USACE.



Source: Bing Maps Hybrid, NCRS Soils Data (10/2021)

0 150 300 Feet

1 inch =300 feet

BARGAS Environmental Consulting

Study Area

Surrounding SSURGO Soils

SSURGO Soils

144,Fiddyment fine sandy loam, 0 to 1 percent slopes

145,Fiddyment fine sandy loam, 1 to 8 percent slopes

211,San Joaquin fine sandy loam, 0 to 3 percent slopes

Exhibit 3
Soils Map

28th Street and Q Street

Map Created: 6/20/2022, Map Revised: 6/22/2022, Bargas Project Number: 1483-21

5 Delineation Results

Survey efforts identified a total of 0.87 acres of aquatic features within the Study Area including three seasonal wetland swales, five seasonal wetlands, and one roadside ditch, as presented in **Exhibit 4** and **Table 2** below. Two upland swales (non-aquatic feature) were also observed within the Study Area and included on the exhibit and in the table. Two additional upland swales were observed just outside the western and southwestern Study Area boundaries and were included on the exhibit for reference. Wetland delineation data sheets are presented in **Appendix D**, and representative site photographs are presented in **Appendix B**.

Table 2. Features Observed in the Study Area

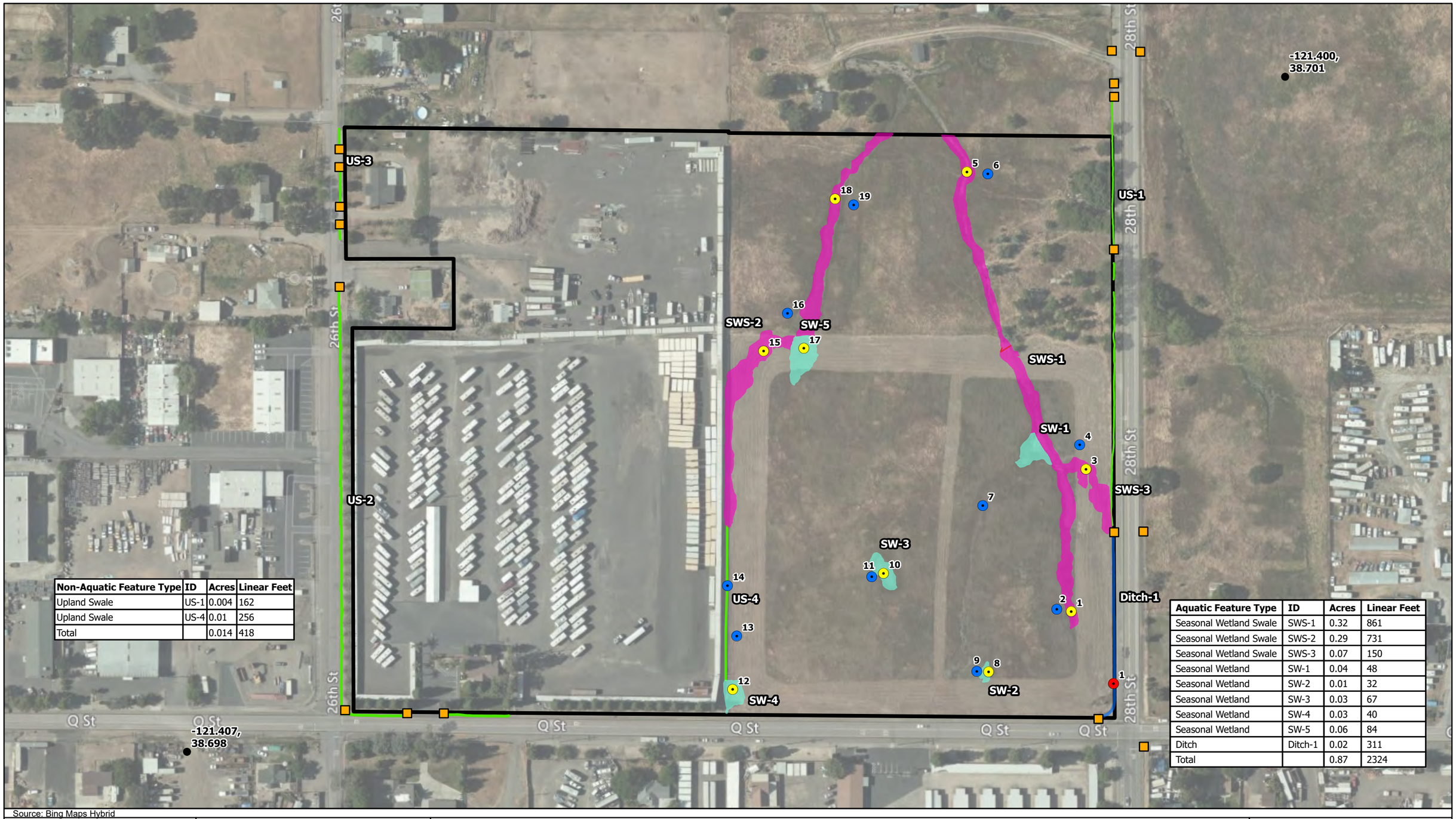
Feature Name	Classification	Area (acres)*	Length (linear feet)
Aquatic Features			
SWS-1	Seasonal Wetland Swale	0.32	861
SWS-2	Seasonal Wetland Swale	0.29	731
SWS-3	Seasonal Wetland Swale	0.07	150
SW-1	Seasonal Wetland	0.04	48
SW-2	Seasonal Wetland	0.01	32
SW-3	Seasonal Wetland	0.03	68
SW-4	Seasonal Wetland	0.03	40
SW-5	Seasonal Wetland	0.06	84
Ditch-1	Ditch	0.02	311
	Total:	**0.87**	**2324**
Non-aquatic Features			
US-1	Upland Swale	0.004	162
US-4	Upland Swale	0.01	256
	Total:	0.014	418

Source: Bargas 2022. *Acreages are calculated estimations that are subject to modification pending formal verification by USACE.

5.1 Aquatic Features

5.1.1 Seasonal Wetland Swales

SWS-1, SWS-2, and SWS-3 are seasonal wetland swales measuring approximately 0.68 acres combined in size with SWS-1 having the longest axis at 861 linear feet. All three requisite wetland criteria (hydrophytic vegetation, hydric soils, wetland hydrology) were observed at SP-1, SP-3, SP-5, SP-15, and SP-18, taken within the features. SWS-1 has one seasonal wetland (SW-1) along its length. SWS-2 has one seasonal wetland (SW-5) along its length and at the most north point is approximately 128 ft west of SWS-1. SWS-3 is located east of SWS-2 and appears to convey overflow from the roadside ditch along the eastern border of the Study Area (Ditch-1) to SWS-1.



Non-Aquatic Feature Type	ID	Acres	Linear Feet
Upland Swale	US-1	0.004	162
Upland Swale	US-4	0.01	256
Total		0.014	418

Aquatic Feature Type	ID	Acres	Linear Feet
Seasonal Wetland Swale	SWS-1	0.32	861
Seasonal Wetland Swale	SWS-2	0.29	731
Seasonal Wetland Swale	SWS-3	0.07	150
Seasonal Wetland	SW-1	0.04	48
Seasonal Wetland	SW-2	0.01	32
Seasonal Wetland	SW-3	0.03	67
Seasonal Wetland	SW-4	0.03	40
Seasonal Wetland	SW-5	0.06	84
Ditch	Ditch-1	0.02	311
Total		0.87	2324

Source: Bing Maps Hybrid

0 75 150 Feet

1 inch = 150 feet

BARGAS Environmental Consulting

Surveyor Name: Krystal Pulsipher and Tatiana Torrez
Map Date: 6/21/2022
Map Author: David Duncan
Date Revised: 6/22/2022
Aerial Source: Bing Maps Hybrid
Coordinate System:
NAD 1983 State Plane Zone II (US Feet)

Map Reference Point
Study Area (27.6-acres)
Culvert

Non-Aquatic Feature
Upland Swale (US)

Sample Points
Upland Sample Point
Wetland Sample Point
OHWM

Aquatic Features
Seasonal Wetland (SW)
Seasonal Wetland Swale (SWS)
Ditch

Exhibit 4
Aquatic Resource Delineation

28th Street and Q Street

Map Created: 6/20/2022, Map Revised: 6/22/2022, Bargas Project Number: 1483-21

5.1.1.1 Hydrophytic Vegetation

Hydrophytic vegetation was determined to be present by the Dominance Test for SWS-1 and SWS-2. The vegetation observed was dominated by Hyssop Loosestrife (OBL), Seaside Barley (FAC), Coyote Thistle (FACW), and Beardless Wild Rye (FAC), with large amounts of bare ground present.

Hydrophytic vegetation was determined to be present by the Problematic Hydrophytic Vegetation indicator for SWS-3. This feature was heavily trampled by livestock, containing numerous and relatively deep hoof prints compared to the adjacent upland areas, and, therefore, was almost completely devoid of vegetation. The sparse vegetation observed was dominated by Hyssop Loosestrife (OBL) and Spikeweed (*Centromadia fitchii*; FACU).

5.1.1.2 Hydric Soils

Hydric soil was determined to be present based upon observations of the Depleted Matrix (F3) indicator. The soils were observed to have a clay to clay loam texture.

5.1.1.3 Wetland Hydrology

The wetland hydrology indicators observed in SWS-1 included Oxidized Rhizospheres Along Living Roots (C3), Inundation Visible in Aerial Imagery (B7), and Saturation Visible in Aerial Imagery (C9). Potential saturation is visible in aerial imagery dated October 2020. Other years also include April 2018, April 2014, and April 2013. Inundation is visible in aerial imagery dated April 2012 and April 2004.

The wetland hydrology indicators observed in SWS-2 included Surface Soil Cracks (B6), Inundation Visible in Aerial Imagery (B7), Biotic Crust (B12), and Saturation Visible in Aerial Imagery (C9). Saturation is visible in aerial imagery dated May 2018. Other years also include February 2018 and April 2013. Inundation is visible in aerial imagery dated February 2018.

The wetland hydrology indicators observed in SWS-3 included Surface Soil Cracks (B6), Biotic Crust (B12), and Saturation Visible in Aerial Imagery (C9). Saturation is visible in aerial imagery dated October 2020. Other years also include April 2012 and April 2013. One source of hydrology appears to be overflow from an adjacent roadside ditch.

5.1.2 Seasonal Wetlands

SW-1 through -5 are seasonal wetlands measuring approximately 0.17 acres combined in size with SW-5 having the longest axis at 84 linear feet. All three requisite wetland criteria (hydrophytic vegetation, hydric soils, wetland hydrology) were observed at SP-8, SP-10, SP-12, and SP-17 taken within the features. SW-1 and SW-5 are hydrologically connected to seasonal wetland swales. An upland swale (US-4) likely provides hydrologic connection between SW-4 and the south end of SWS-2. SW-2 and SW-3 do not have any apparent surface water hydrologic connection to the other features mapped in the Study Area. As SW-1 was characteristically similar to SWS-1, a separate sample

5.1.2.1 Hydrophytic Vegetation

Hydrophytic vegetation was determined to be present by the Dominance Test for SW-2, SW-3, and SW-5. The vegetation observed at SW-2, and SW-3 was dominated by Hyssop Loosestrife (OBL), Seaside Barley (FAC), and Turkey Mullein (NL) with large amounts of bare ground present. The vegetation observed at SW-5 was dominated by Spike Rush (OBL) with Coyote Thistle (FACW) present within its periphery.

Hydrophytic vegetation was determined to be present by the Prevalence Index for SW-4. This feature is heavily impacted by grazing, contains a high density of deep hoof prints, and was almost completely devoid of vegetation. The vegetation observed was dominated by Coyote Thistle (FACW) and Beardless Wild Rye (FAC).

5.1.2.2 Hydric Soils

Hydric soil was determined to be present by based upon observations of the Depleted Matrix (F3) and Depleted Dark Surface (F7) indicators. The soils were observed to have a clay loam to silty clay texture.

5.1.2.3 Wetland Hydrology

The wetland hydrology indicators observed in SW-1 were determined to be characteristically similar to SWS-1 and included Oxidized Rhizospheres Along Living Roots (C3), Saturation Visible in Aerial Imagery (C9), and Inundation Visible in Aerial Imagery (B7). Potential saturation is visible in aerial imagery dated October 2020. Other years also include April 2018, April 2014, and April 2013. Inundation is visible in aerial imagery dated April 2012 and April 2004.

The wetland hydrology indicators observed in SW-2 included Surface Soil Cracks (B6), Oxidized Rhizospheres Along Living Roots (C3), and Saturation Visible in Aerial Imagery (C9). The most recent Google Earth aerial image where potential saturation is visible is dated October 2020. Other years also include May 2018 and April 2015.

The wetland hydrology indicators observed in SW-3 included Biotic Crust (B12), Saturation Visible in Aerial Imagery (C9), and Inundation Visible in Aerial Imagery (B7). The most recent Google Earth aerial image where potential saturation is visible is dated May 2018. Other years also include February 2018, April 2014, and April 2013. Inundation is visible in aerial imagery dated March 2015 and April 2012.

The wetland hydrology indicators observed in SW-4 included Biotic Crust (B12) and Surface Soil Cracks (B6). Saturation and inundation not clearly visible in aerial imagery.

The wetland hydrology indicators observed in SW-5 included Surface Soil Cracks (B6), Oxidized Rhizospheres Along Living Roots (C3), Saturation Visible in Aerial Imagery (C9), and Inundation Visible in Aerial Imagery (B7). The most recent Google Earth aerial image where potential saturation is visible in aerial imagery dated May 2018. Other years also include April 2014 and April 2013. Inundation is visible in aerial imagery dated February 2018.

5.1.3 Roadside Ditch

Ditch 1 measures approximately 0.02 acres and 311 linear feet in size. This feature is man-made and runs along the southeast border of the Study Area.

5.1.3.1 Hydrophytic Vegetation

This feature is primarily unvegetated and indicators of hydrophytic vegetation were not observed within the ditch.

5.1.3.2 Hydric Soils

Hydric soil was determined to be present based upon observations of Surface Soil Cracks (B6) and Biotic Crust (B12) at and below the OHWM, as well as a layer of fine silt on the surface, below OHWM.

5.1.3.3 Wetland Hydrology

This ditch exhibited OHWMs that averaged approximately 3 feet in width and 1 foot in depth. The bank averages approximately 7 feet wide and 3 feet deep. A metal culvert with a diameter ranging from approximately 18-24

inches was observed This feature receives ephemeral flow in the form of stormwater and irrigation runoff from adjacent fields and roads. Water was present at the time of the survey. A desktop review of available sources (Google 2021, USFWS 2021, USGS 2022) and the USGS topographic map indicate this feature is a source for a seasonal wetland swale (SWS-3). The wetland hydrology indicators included Surface Soil Cracks (B6), Saturation (A3) in some places, Biotic Crust (B12), Drift Deposits (B3), Sediment Deposits (B2), and Inundation Visible in Aerial Imagery (B7).

5.2 Non-aquatic Features

5.2.1 Upland Swales

Two upland swales were observed within the Study Area, measuring approximately 418 linear feet long with an area of 0.014 acres assuming a general width of 1 foot. US-1 runs parallel with the eastern border of the project, starting along the northern boundary, terminating approximately 380 feet south. US-4 is adjacent to both a seasonal wetland swale (SWS-2) and seasonal wetland (SW-4), located near the center of the project area.

5.2.1.1 Hydrophytic Vegetation

Indicators of hydrophytic vegetation were not observed within the upland swales.

5.2.1.2 Hydric Soils

Indicators of hydric soils were not observed within the upland swales.

5.2.1.3 Wetland Hydrology

Both upland swales lack an OWHM. US-4 is located south and adjacent to a seasonal wetland swale. The wetland hydrology indicators observed in US-4 included Biotic Crust (B12). Indicators of wetland hydrology were not observed in US-1. US-1 is manmade, used to transmit storm water flows from adjacent lands and is isolated from other features. A semi buried metal culvert with a diameter of approximately 12 inches was observed at US-1.

6 Conclusions

The Study Area contains three seasonal wetland swales, five seasonal wetlands, and one ditch with a total area of **0.87 acres**, and two upland swales with an area of **0.014 acres,** based on the field results. The two swales converge into a single linear feature on the property immediately north of the Study Area, draining to the northwest where it discharges to an unnamed intermittent stream approximately 810 feet north of the Study Area. The unnamed intermittent stream is a tributary of Dry Creek, a perennial stream located approximately 0.57 miles northwest of the Study Area. Dry Creek is tributary to the Natomas East Main Drainage Canal (Steelhead Creek) which in turn is a tributary of the American River. The American River discharges to the Sacramento River, a TNW under the jurisdiction of USACE. The three seasonal wetlands swales, five seasonal wetlands, and ditch will still need to go through a formal USACE field verification to confirm their status.

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Appendix A. Plant List

Scientific Name	Common Name	Wetland Indicator Status*
Aegilops triuncialis	Goatgrass	NL
Ailanthus altissima	Tree Of Heaven	FACU
Avena fatua	Wild Oat	NL
Bromus catharticus	Rescue Grass	NL
Bromus diandrus	Ripgut Grass	NL
Bromus hordeaceus	Soft Chess	FACU
Carduus pycnocephalus subsp. pycnocephalus	Italian Thistle	NL
Centromadia fitchii	Spikeweed	FACU
Convolvulus arvensis	Bindweed, Orchard Morning-Glory	NL
Croton setiger	Turkey Mullein	NL
Dittrichia graveolens	Stinkwort	NL
Eleocharis macrostachya	Common Spikerush	OBL
Elymus caput-medusae	Medusa Head	NL
Elymus triticoides	Beardless Wild-Rye	FAC
Erodium moschatum	Greenstem Filaree	NL
Eryngium vaseyi	Coyote-Thistle	FACW
Festuca perennis	Rye Grass	FAC
Ficus carica	Edible Fig	FACU
Gnaphalium palustre	Lowland Cudweed	FACW
Hordeum marinum subsp. gussoneanum	Seaside Barley	FAC
Hordeum murinum	Foxtail Barley	FACU
Juncus bufonius	Common Toad Rush	FACW
Leontodon saxatilis	Hairy Hawkbit	FACU
Lotus corniculatus	Bird's-Foot Trefoil	FAC
Lupinus nanus	Valley Sky Lupine	NL
Lythrum hyssopifolia	Hyssop Loosestrife	OBL
Marrubium vulgare	White Horehound	FACU
Navarretia sp.	Navarretia species	NL
Plantago lanceolata	Ribwort	FAC
Platanus occidentalis	American Sycamore	FAC
Polygonum aviculare	Knotweed, Knotgrass	FAC
Polypogon monspeliensis	Annual Beard Grass, Rabbitfoot Grass	FACW
Populus alba	Silver Poplar	NL
Quercus douglasii	Blue Oak	NL
Quercus lobata	Valley Oak	FACU
Quercus wislizeni	Interior Live Oak	NL
Robinia pseudoacacia	Black Locust	FACU
Rumex acetosella	Sheep Sorrel	FACU
Rumex crispus	Curly Dock	FAC
Trifolium barbigerum	Bearded Clover	FACW

Scientific Name	Common Name	Wetland Indicator Status*
Trifolium hirtum	Rose Clover	NL
Vicia villosa	Hairy Vetch, Winter Vetch	NL

*Wetland Indicator Status (USACE 2020):

- FACW = Facultative Wetland
- FAC = Facultative
- FACU = Facultative Upland
- UPL = Upland
- NL = Not Listed on the National Wetland Plant List, assumed Upland

Appendix B. Representative Site Photographs

Photo 1. SP-1; The southern end of SWS-1 mapped in the undeveloped half of the Study Area, looking northwest near the southeast corner.

Photo 2. SP-2; An upland point for SWS-1 mapped in the undeveloped portion of the Study Area looking east towards the feature.

Photo 3. SP-3 is located within SWS-3, mapped in the undeveloped half of the Study Area looking south.

Photo 4. SP-4; The upland point for SWS-3 mapped in the undeveloped portion of the Study Area looking southwest towards the feature.

Photo 5. SP-5 is located within SWS-1, mapped in the undeveloped half of the Study Area looking north towards the northern project boundary (fencing).

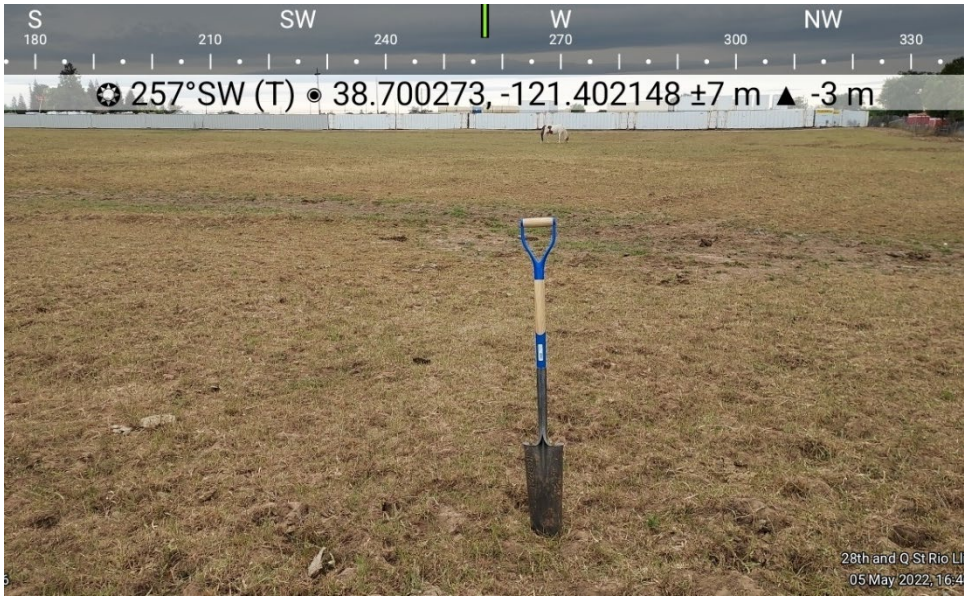

Photo 6. SP-6; The upland point for SWS-1 mapped in the undeveloped portion of the Study Area looking southwest towards the feature.

Photo 7. Overview of SWS-1 from near the northern boundary of the project, looking south.

Photo 8. Ditch-1, along the eastern project boundary, looking north.

Photo 9. SP-7; Collected within an area where potential wetland signature visible in aerial imagery but appears more upland in field observations. Hydrophytic vegetation and hydric soils observed, wetland hydrology not observed.

Photo 10. SP-8 is located within SW-2, mapped in the undeveloped half of the Study Area looking south towards the southern project boundary (fencing).

Photo 11. SP-9; The upland point for SW-2 mapped in the undeveloped portion of the Study Area looking southeast towards the feature.

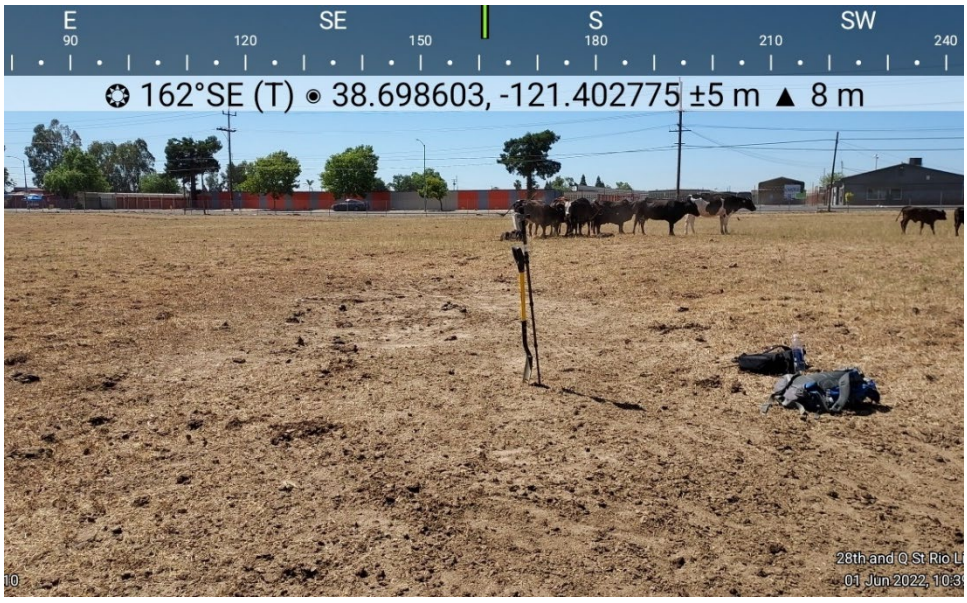

Photo 12. SP-10 is located within SW-3, mapped in the undeveloped half of the Study Area looking southeast.

Photo 13. SP-11; The upland point for SW-3 mapped in the undeveloped portion of the Study Area looking southeast.

Photo 14. SP-12 is located within SW-4, mapped in the undeveloped half of the Study Area looking north.

Photo 15. SP-13; The upland point for US-4 & SW-4 mapped in the undeveloped portion of the Study Area looking north, with US-4 directly to the west.

Photo 16. SP-14 is located within US-4, mapped in the undeveloped half of the Study Area looking north.

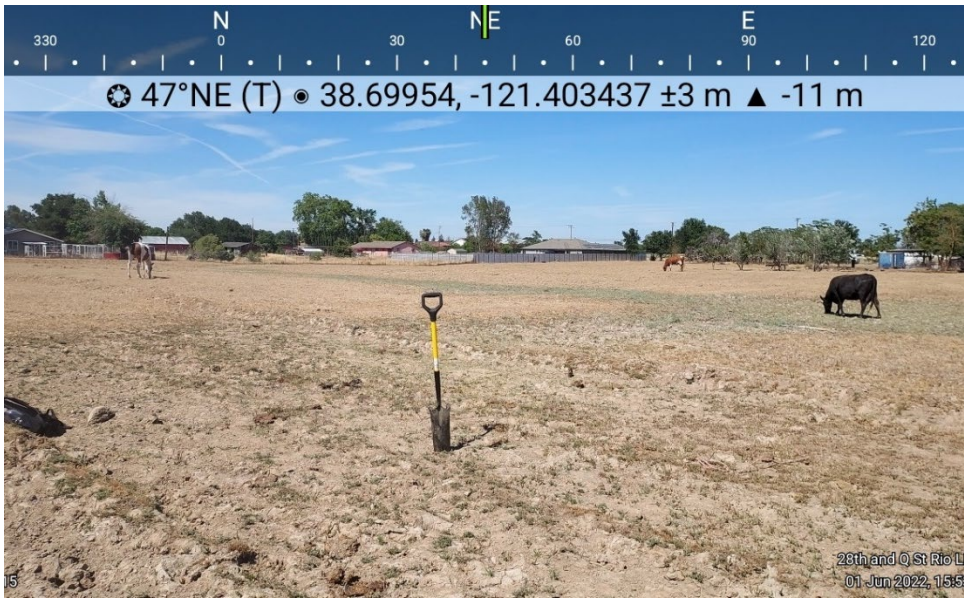

Photo 17. SP-15 is located within SWS-2, mapped in the undeveloped portion of the Study Area looking northeast.

Photo 18. SP-16; An upland point for SWS-2 & SW-5 mapped in the undeveloped portion of the Study Area looking southeast, towards SW-5.

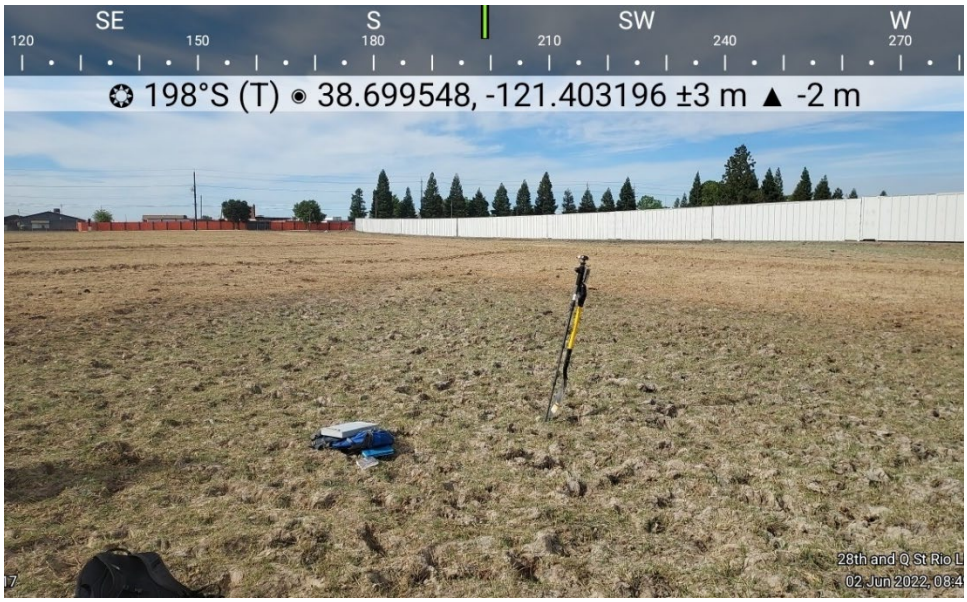

Photo 19. SP-17 is located within SW-5, mapped in the undeveloped portion of the Study Area looking south.

Photo 20. SP-18 is located within SWS-2, mapped in the undeveloped portion of the Study Area looking north.

Photo 21. SP-19; An upland point for SWS-2 mapped in the undeveloped portion of the Study Area looking southwest, towards SWS-2.

Photo 22. Ditch-1; Located along 28th Street, along the eastern project boundary, facing north.

Photo 23. Overview of US-1, located along 28th Street at the northeast corner of the Study Area, facing south.

Photo 24. SW-5 located along SWS-2, mapped in the undeveloped portion of the Study Area looking south.

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 Sacramento County, California

28th and Q Street Rio Linda

June 22, 2022

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 (28th and Q Street Rio Linda)

Map Scale: 1:2,550 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

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: Sacramento County, California
Survey Area Data: Version 20, Sep 3, 2021

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

Date(s) aerial images were photographed: May 11, 2019—May 12, 2019

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 (28th and Q Street Rio Linda)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
144	Fiddyment fine sandy loam, 0 to 1 percent slopes	13.4	47.4%
145	Fiddyment fine sandy loam, 1 to 8 percent slopes	1.9	6.8%
211	San Joaquin fine sandy loam, 0 to 3 percent slopes	12.9	45.8%
Totals for Area of Interest		**28.2**	**100.0%**

Map Unit Descriptions (28th and Q Street Rio Linda)

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.

Sacramento County, California

144—Fiddyment fine sandy loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: hhmm
Elevation: 50 to 280 feet
Mean annual precipitation: 19 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 230 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Fiddyment

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 22 inches: loam
H3 - 22 to 30 inches: sandy clay loam
H4 - 30 to 36 inches: indurated
H5 - 36 to 40 inches: weathered bedrock

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: 30 to 36 inches to duripan; 36 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C
Ecological site: R017XY902CA - Duripan Vernal Pools
Hydric soil rating: No

Minor Components

Unnamed, hardpan
Percent of map unit: 8 percent
Hydric soil rating: No

Unnamed, loamy subsoils
Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed, occasional flooded
Percent of map unit: 3 percent
Hydric soil rating: No

145—Fiddyment fine sandy loam, 1 to 8 percent slopes

Map Unit Setting
National map unit symbol: hhmn
Elevation: 50 to 280 feet
Mean annual precipitation: 19 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 230 to 300 days
Farmland classification: Not prime farmland

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

Description of Fiddyment

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 sedimentary rock

Typical profile
H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 15 inches: loam
H3 - 15 to 28 inches: sandy clay loam
H4 - 28 to 40 inches: indurated
H5 - 40 to 44 inches: weathered bedrock

Properties and qualities
Slope: 1 to 8 percent
Depth to restrictive feature: 28 to 40 inches to duripan; 40 to 44 inches to paralithic bedrock
Drainage class: Well drained

Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.7 inches)

Interpretive groups
Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: R017XD047CA - LOAMY CLAYPAN
Hydric soil rating: No

Minor Components

Orangevale
Percent of map unit: 3 percent
Hydric soil rating: No

Redding
Percent of map unit: 3 percent
Hydric soil rating: No

Andregg
Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed, deeper
Percent of map unit: 2 percent
Hydric soil rating: No

Unnamed, unloam subsoil
Percent of map unit: 2 percent
Hydric soil rating: No

Xerarents
Percent of map unit: 2 percent
Hydric soil rating: No

211—San Joaquin fine sandy loam, 0 to 3 percent slopes

Map Unit Setting
National map unit symbol: hhps
Elevation: 20 to 500 feet
Mean annual precipitation: 10 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of San Joaquin

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 13 inches: fine sandy loam
H2 - 13 to 30 inches: sandy clay loam
H3 - 30 to 35 inches: clay loam
H4 - 35 to 60 inches: indurated
H5 - 60 to 67 inches: stratified sandy loam to loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches; 35 to 60 inches to duripan
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Bruella

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

Hedge

Percent of map unit: 3 percent
Hydric soil rating: No

Fiddyment

Percent of map unit: 3 percent
Hydric soil rating: No

Dierssen

Percent of map unit: 3 percent

Hydric soil rating: No

Xerarents

Percent of map unit: 1 percent
Hydric soil rating: No

Durixeralfs

Percent of map unit: 1 percent
Hydric soil rating: No

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 05/05/22
Applicant/Owner: State: CA Sampling Point: SP-1
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): < 3 %
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.698332 Long: -121.401704 Datum: NAD83
Soil Map Unit Name: Fiddyment fine sandy loam 0 - 1 % slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:
Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-1 collected within south end of SWS-1. Boundaries primarily determined by vegetation species transition from Lythrum hyssopifolia (OBL) and Hordeum marinum (FAC) to Erodium moschatum (NL). Secondary indicators used for mapping the boundary include change in topography, intensity (i.e. depth, number, size) of cow hoof prints, and aerial signatures.

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: r = 5 ft)			
1. *Hordeum marinum*	25%	Y	FAC
2. *Lythrum hyssopifolia*	25%	Y	OBL
3. *Juncus bufonius*	15%		FACW
4. *Bromus hordeaceus*	7%		FACU
5. *Elymus triticoides*	5%		FAC
6. *Hordeum murinum*	2%		FACU
7. *Aegilops triuncialis*	1%		NL
8. *Elymus caput-medusae*	1%		NL
	see below	=Total Cover	
Woody Vine Stratum (Plot size:)			
1. *Vicia villosa*	1%		NL
2. *Centromadia fitchii*	1%		FACU
	83%	=Total Cover	
% Bare Ground in Herb Stratum 25%	% 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: 2/2 = 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species		x1 =
FACW species		x2 =
FAC species		x3 =
FACU species		x4 =
UPL species		x5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[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 X No

Remarks:
Species listed in Woody Vine Stratum are continuation of Herb Stratum.
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 41.5%, 0.2 = 16.6%

SOIL

Sampling Point: SP-1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5 YR 4/2	45%	Black	20%	C	M	clay loam	Mg concentrations
			2.5 YR 4/6	10%	C	PL		
			2.5 YR 4/6	25%	C	M		

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X 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: claypan?

Depth (inches): 12 inches

Hydric Soil Present? Yes X No ___

Remarks:

Pit dug to approximately 12 inches below surface until soil was too hard to dig.

SP-1 may be within edge of past fire break disking around pasture edges. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded.

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)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X 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)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Most recent Google Earth aerial image where potential saturation is visible is October 2020. Other years also include April 2015, February and April 2014, April 2013, April 2012, and more. Potential inundation visible in October 2009.

Intense (i.e. depth, number, size) cow hoof print activity present within feature.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 05/05/22
Applicant/Owner: State: CA Sampling Point: SP-2
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): upland Local relief (concave, convex, none): none Slope (%): 1 - 3%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.698342 Long: -121.401788 Datum: NAD83
Soil Map Unit Name: Fiddyment fine sandy loam 0 - 1 % slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks:
Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-2 collected in upland outside of SWS-1 where SP-1 collected.

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: r = 5 ft)			
1. *Elymus triticoides*	10%	Y	FAC
2. *Bromus hordeaceus*	5%	Y	FACU
3. *Bromus catharticus*	2%		NL
4. *Juncus bufonius*	2%		FACW
5. *Leontodon saxatilis*	2%		FACU
6. *Erodium moschatum*	1%		NL
7.			
8.			
	22%	=Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 80% % 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: **1/2 = 50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	
FACW species	**2**	x2 =	**4**
FAC species	**10**	x3 =	**30**
FACU species	**7**	x4 =	**28**
UPL species	**3**	x5 =	**15**
Column Totals:	**22** (A)		**77** (B)

Prevalence Index = B/A = **3.5**

Hydrophytic Vegetation Indicators:
_ Dominance Test is >50%
_ Prevalence Index is ≤3.0[1]
_ Morphological Adaptationd[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 X

Remarks:

NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 11%, 0.2 = 4.4%

SOIL

Sampling Point: SP-2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	7.5 YR 3/3	80%	5YR 4/6	20%	C	M	loam	

[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: N/A

Depth (inches): N/A

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

Remarks:
Pit dug to approximately 15 inches below surface, soil very dry.

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 X Depth (inches): ___

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

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

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

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 05/05/22
Applicant/Owner: State: CA Sampling Point: SP-3
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): < 3 %
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.698979 Long: -121.401613 Datum: NAD83
Soil Map Unit Name: Fiddyment fine sandy loam 0 - 1 % slopes NWI Classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:
Seasonal wetland swale 3 (SWS-3). Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. Boundaries primarily determined by shift in intensity (i.e. depth, number, size) of hoof prints and increase in vegetative cover. Feature directly abuts SWS-1.

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: r = 5 ft)			
1. *Lythrum hyssopifolia*	3%	Y	OBL
2. *Centromadia fitchii*	1%	Y	FACU
3. Unknown grass species	1%	Y	?
4.			
5.			
6.			
7.			
8.			
	5%	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 95% % Cover of Biotic Crust 10%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: (A)
Total Number of Dominant Species Across All Strata: (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:
OBL species	x1 =
FACW species	x2 =
FAC species	x3 =
FACU species	x4 =
UPL species	x5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:
Feature is extremely heavily impacted by grazing, high density of deep hoof prints. Almost completely unvegetated.
0.5 = 2.5%, 0.2 = 1%

SOIL

Sampling Point: SP-3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5 YR 4/1	77%	black	3%	C	M	clay loam	Mg concentrations
			2.5 YR 4/8	20%	C	M		
6-18	2.5 YR 3/1	85%	black	10%	C	M	clay loam	Mg concentrations
			2.5 YR 4/4	5%	C	M		

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X 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: N/A

Depth (inches): N/A

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

Remarks:
Pit dug to approximately 18 inches below surface grade. Second layer contained lots of manganese soft masses that appeared bead-like.
SP-3 within edge of past fire break disking around pasture edges.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- X 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)
- X 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)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

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

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

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

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

Remarks:
Most recent Google Earth aerial image where potential saturation is visible is October 2020. Other years also include April 2013, April 2012, and more. One source of hydrology appears to be overflow from an adjacent roadside ditch.
Intense (i.e. depth, number, size) cow hoof print activity present within feature.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 05/05/22
Applicant/Owner: State: CA Sampling Point: SP-4
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): upland Local relief (concave, convex, none): none Slope (%): 1 - 3%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.699090 Long: -121.401648 Datum: NAD83
Soil Map Unit Name: Fiddyment fine sandy loam 0 - 1 % slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks:
Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-4 collected in upland outside of SWS-3 where SP-3 collected.

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: r = 5 ft)			
1. *Elymus triticoides*	8%	Y	FAC
2. *Erodium moschatum*	5%	Y	NL
3. *Elymus caput-medusae*	5%		NL
4. *Leontodon saxatilis*	5%		FACU
5. *Bromus hordeaceus*	3%		FACU
6.			
7.			
8.			
	26%	=Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 80% % 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: **1/2 = 50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**8**	x3 =	**24**
FACU species	**8**	x4 =	**32**
UPL species	**10**	x5 =	**50**
Column Totals:	**26** (A)		**106** (B)

Prevalence Index = B/A = **4.1**

Hydrophytic Vegetation Indicators:
_ Dominance Test is >50%
_ Prevalence Index is ≤3.0[1]
_ Morphological Adaptationd[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 X

Remarks:
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 13%, 0.2 = 5.2%

SOIL

Sampling Point: SP-4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	7.5 YR 4/4	98%	7.5 YR 5/6	2%	C	M	loam	

[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: N/A

Depth (inches): N/A

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

Remarks:
Pit dug to approximately 5 inches below surface, soil very dry preventing further excavation.

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 X Depth (inches): ___

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

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

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

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 05/05/22
Applicant/Owner: State: CA Sampling Point: SP-5
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): < 3 %
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.700336 Long: -121.402293 Datum: NAD83
Soil Map Unit Name: Fiddyment fine sandy loam 0 - 1 % slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Remarks:
Seasonal Wetland Swale 1 (SWS-1). Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-5 collected within north end of SWS-1. Boundaries primarily determined by vegetation species transition from Eryngium vaseyi and Lythrum hyssopifolia to Bromus hordeaceus. Secondary indicators used for mapping the boundary include change in topography, intensity (i.e. depth, number, size) of cow hoof prints, and aerial signatures.

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: r = 5 ft)			
1. *Eryngium vaseyi*	5%	Y	FACW
2. *Elymus triticoides*	2%	Y	FAC
3. *Lythrum hyssopifolia*	2%		OBL
4. *Trifolium barbigerum*	1%		FACW
5. *Juncus bufonius*	<1%		FACW
6. *Bromus hordeaceus*	<1%		FACU
7. *Lotus corniculatus*	<1%		FAC
8. *Vicia villosa*	<1%		NL
	14%	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0%	=Total Cover	
% Bare Ground in Herb Stratum 90%	% 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: **2/2 = 100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:
OBL species	x1 =
FACW species	x2 =
FAC species	x3 =
FACU species	x4 =
UPL species	x5 =
Column Totals: (A)	(B)
Prevalence Index = B/A =	

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[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 X No

Remarks:
Feature is extremely heavily impacted by grazing, high density of deep hoof prints. Almost completely unvegetated.
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 7%, 0.2 = 2.8%

SOIL

Sampling Point: SP-5

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	7.5 YR 3/2	80%	Black	10%	C	M	clay	Mg concentrations
			5YR 5/8	10%	C	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)
- X 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: N/A

Depth (inches): N/A

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

Remarks:
Pit dug to approximately 18 inches below surface grade.

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)
- X 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)
- X 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)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

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

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

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

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

Remarks:
Most recent Google Earth aerial image where potential saturation is visible is October 2020. Other years also include April 2018, April 2014, April 2013, and more.
Inundation visible in April 2012 and April 2004.
Intense (i.e. depth, number, size) cow hoof print activity present within feature.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 05/05/22
Applicant/Owner: State: CA Sampling Point: SP-6
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): upland Local relief (concave, convex, none): none Slope (%): 1 - 3%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.700326 Long: -121.402171 Datum: NAD83
Soil Map Unit Name: Fiddyment fine sandy loam 0 - 1 % slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks:
Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-4 collected in upland outside of SWS-1 where SP-5 collected.

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: r = 5 ft)			
1. *Elymus triticoides*	10%	Y	FAC
2. *Bromus hordeaceus*	3%	Y	FACU
3. *Elymus caput-medusae*	1%		NL
4. Unknown grass species	1%		?
5.			
6.			
7.			
8.			
	15%	=Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 85% % 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: 1/2 = 50% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
_ Dominance Test is >50%
_ Prevalence Index is ≤3.0[1]
_ Morphological Adaptationd[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 X

Remarks:
Area is extremely heavily impacted by grazing, high density of shallow hoof prints.
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 7.5%, 0.2 = 3%

SOIL

Sampling Point: SP-6

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	7.5YR 3/3	85%	5YR 4/6	10%	C	M	clay loam	
			5YR 4/6	5%	C	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: N/A

Depth (inches): N/A

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

Remarks:
Pit dug to approximately 9 inches below surface, soil very dry and prevented further excavation

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 X Depth (inches): ___

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

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

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

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 06/01/22
Applicant/Owner: State: CA Sampling Point: SP-7
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): slight slope Local relief (concave, convex, none): slightly concave Slope (%): <3%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.698816 Long: -121.402207 Datum: NAD83
Soil Map Unit Name: Fiddyment fine sandy loam 0 - 1 % slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes	No X	

Remarks:
Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-7 collected within an area where potential wetland signature visible in aerial imagery but appears more upland in field observations.

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: r = 5 ft)			
1. *Elymus triticoides*	8%	Y	FAC
2. *Juncus bufonius*	8%	Y	FACW
3. *Dittrichia graveolens*	5%		NL
4. *Leontodon saxatilis*	5%		FACU
5. *Lytrhum hyssopifolia*	5%		OBL
6. *Centromadia fitchii*	<1%		FACU
7.			
8.			
	32	=Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 80% % 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: **2/2 = 100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	**5**	x1 = **5**
FACW species	**8**	x2 = **16**
FAC species	**8**	x3 = **24**
FACU species	**6**	x4 = **24**
UPL species	**5**	x5 = **25**
Column Totals:	**32** (A)	**94** (B)

Prevalence Index = B/A = **2.9**

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
Morphological Adaptationd[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 X No

Remarks:
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 16%, 0.2 = 6.4%

SOIL

Sampling Point: SP-7

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/2	75%	5YR 5/8	20%	C	M	clay loam	
			5YR 5/8	5%	C	PL		
5-12	10YR 4/2	75%	black	5%	C	M	clay loam	Mg concentrations (beads)
			5YR 5/8	20%	C	M		

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X 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: clay pan

Depth (inches): 12 inches

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

Remarks:
Pit dug to approximately 12 inches below surface, hit clay pan restrictive layer.

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)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

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

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

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

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

Remarks:
No field indicators observed.
Most recent Google Earth aerial image where potential saturation is visible is October 2020. Other years also include May 2018, April 2015, April 2013, and more.
Inundation not visible in available aerial imagery. Does not pass the FAC-Neutral Test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 06/01/22
Applicant/Owner: State: CA Sampling Point: SP-8
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1-2%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.698059 Long: -121.402186 Datum: NAD83
Soil Map Unit Name: Fiddyment fine sandy loam 0 - 1 % slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks: Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-8 collected within SW-2. Boundaries primarily determined by vegetation species transition from Lythrum hyssopifolia to Dittrichea graveolens. Secondary indicators used for mapping the boundary include change in topography, intensity (i.e. depth, number, size) of cow hoof prints, and aerial signatures.

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: r = 5 ft)			
1. *Lythrum hyssopifolia*	10%	Y	OBL
2. *Hordeum marinum*	5%	Y	FAC
3. *Eryngium vaseyi*	2%		FACW
4. *Centromadia fitchii*	1%		FACU
5. *Croton setiger*	1%		NL
6.			
7.			
8.			
	19%	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 85% % 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: 2/2 = 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	x1 =	
FACW species	x2 =	
FAC species	x3 =	
FACU species	x4 =	
UPL species	x5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[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 X No

Remarks:
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 9.5%, 0.2 = 3.8%

SOIL

Sampling Point: SP-8

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	75%	5YR 5/8	5%	C	PL	clay loam	PL along living roots

[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)
- X 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: clay pan

Depth (inches): 8 inches

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

Remarks:

Pit dug to approximately 8 inches below surface, hit clay pan restrictive layer.

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**)
- X 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)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X 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)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

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

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

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

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

Remarks:

Most recent Google Earth aerial image where potential saturation is visible is October 2020. Other years also include May 2018, April 2015, and more. Intense (i.e. depth, number, size) cow hoof print activity present within feature.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 06/01/22
Applicant/Owner: State: CA Sampling Point: SP-9
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): upland Local relief (concave, convex, none): none Slope (%): 1-3%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.698062 Long: -121.402255 Datum: NAD83
Soil Map Unit Name: Fiddyment fine sandy loam 0 - 1 % slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes	No X	

Remarks:
Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-9 collected upland to SP-8 and SW-2.

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: r = 5 ft)			
1. *Dittrichia graveolens*	15%	Y	NL
2. *Elymus caput-medusae*	8%	Y	NL
3. *Elymus triticoides*	5%		FAC
4. *Lytrhum hyssopifolia*	1%		OBL
5. *Leontodon saxatilis*	1%		FACU
6.			
7.			
8.			
	30%	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 75% % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)
Total Number of Dominant Species Across All Strata: **2** (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: **0/2 = 0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
_ Dominance Test is >50%
_ Prevalence Index is ≤3.0[1]
_ Morphological Adaptationd[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 X

Remarks:
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 15%, 0.2 = 6%

SOIL

Sampling Point: SP-9

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	60%	5YR	20%	C	M	loam	

[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)
- X 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: clay pan

Depth (inches): 12 inches

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

Remarks:
Pit dug to approximately 12 inches below surface, hit clay pan restrictive layer.

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 X Depth (inches): ___

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

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

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

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

Remarks:
No field indicators observed. Saturation and inundation not visible in current or historic aerials.
Does not pass the FAC-Neutral Test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 06/01/22
Applicant/Owner: State: CA Sampling Point: SP-10
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <2%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.698511 Long: -121.402793 Datum: NAD83
Soil Map Unit Name: San Joaquin fine sandy loam, 0 - 3% slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:
Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-10 collected within SW-3. Boundaries primarily determined by change in topography, intensity (i.e. depth, number, size) of cow hoof prints, and aerial signatures.

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: r = 5 ft)			
1. *Elymus triticoides*	5%	Y	FAC
2. *Lytrhum hyssopifolia*	1%	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	6%	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 94% % Cover of Biotic Crust 5%

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: **2/2 = 100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[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:
Feature almost completely unvegetated.
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 3%, 0.2 = 1.2%

SOIL

Sampling Point: SP-10

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/2	79%	7.5YR 5/8	15%	C	M	clay loam	
			7.5YR 5/8	5%	C	PL		
			black	1%	C	M		Mg concentrations (beads)
5-14	10YR 3/2	89%	10YR 3/4	10%	C	M	clay loam	
			black	1%	C	M		Mg concentrations (beads)

[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)
- X 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: N/A

Depth (inches): N/A

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- X 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)
- X 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)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

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

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

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

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

Remarks:

Most recent Google Earth aerial image where potential saturation is visible is May 2018. Other years also include February 2018, April 2014, April 2013, and more.

Inundation visible in March 2015 and April 2012.

Intense (i.e. depth, number, size) cow hoof print activity present within feature.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 06/01/22
Applicant/Owner: State: CA Sampling Point: SP-11
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): upland Local relief (concave, convex, none): none Slope (%): <3%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.698496 Long: -121.402861 Datum: NAD83
Soil Map Unit Name: San Joaquin fine sandy loam, 0 - 3% slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks:
Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-11 collected upland to SP-10 and SW-3.

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: r = 5 ft)			
1. *Bromus catharticus*	10%	Y	NL
2. *Elymus triticoides*	10%	Y	FAC
3. *Dittrichia graveolens*	5%		NL
4. *Juncus bufonius*	5%		FACW
5. *Elymus caput-medusae*	2%		NL
6.			
7.			
8.			
	32%	=Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 68% % 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: **1/2 = 50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	**0**
FACW species	**5**	x2 =	**10**
FAC species	**10**	x3 =	**30**
FACU species	**0**	x4 =	**0**
UPL species	**17**	x5 =	**85**
Column Totals:	**32** (A)		**125** (B)

Prevalence Index = B/A = **3.9**

Hydrophytic Vegetation Indicators:
_ Dominance Test is >50%
_ Prevalence Index is ≤3.0[1]
_ Morphological Adaptationd[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 X

Remarks:
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 16%, 0.2 = 6.4%

SOIL

Sampling Point: SP-11

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 4/3	85%	7.5YR 5/8	10%	C	PL	sandy loam	
			7.5YR 5/8	5%	C	M		

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): N/A

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

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

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

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

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 06/01/22
Applicant/Owner: State: CA Sampling Point: SP-12
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1-3%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.697986 Long: -121.403674 Datum: NAD83
Soil Map Unit Name: San Joaquin fine sandy loam, 0 - 3% slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:
Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-12 collected in SW-4, located within a fire break footprint. Boundaries primarily determined by change in topography, intensity (i.e. depth, number, size) of cow hoof prints, and aerial signatures.

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: r = 5 ft)			
1. *Lythrum hyssopifolia*	5%	Y	OBL
2. *Croton setiger*	5%	Y	NL
3. *Juncus bufonius*	1%		FACW
4.			
5.			
6.			
7.			
8.			
	11%	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 89% % Cover of Biotic Crust 10%

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: 1/2 = 50% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x1 =	5
FACW species	1	x2 =	2
FAC species	0	x3 =	0
FACU species	0	x4 =	0
UPL species	5	x5 =	25
Column Totals:	11 (A)		32 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:
- Dominance Test is >50%
- X Prevalence Index is ≤3.0[1]
- Morphological Adaptationd[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 X No

Remarks:
Sparse Eryngium vaseyi growing within edge of feature, outside of SP-12.
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 5.5%, 0.2 = 2.2%

SOIL

Sampling Point: SP-12

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	84%	5YR 5/6	15%	C	M	sandy clay loam	
			Black	1%	C	M		Mg concentrations (beads)
4-17	10YR 3/3	40%	10YR 5/2	60%	D	M	sandy 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)
- X 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: N/A

Depth (inches): N/A

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- X 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)
- X 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 X Depth (inches): ___

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

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

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

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

Remarks:
Saturation and inundation not clearly visible in aerial imagery.
Intense (i.e. depth, number, size) cow hoof print activity present within feature.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 06/01/22
Applicant/Owner: State: CA Sampling Point: SP-13
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): upland Local relief (concave, convex, none): none Slope (%): 1-3%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.69823 Long: -121.403647 Datum: NAD83
Soil Map Unit Name: San Joaquin fine sandy loam, 0 - 3% slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks:
Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-13 collected upland to SP-12 and SW-4. Investigative point also within fire break and close to a swale-like feature containing sparse Eryngium vaseyi.

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: r = 5 ft)			
1. *Croton setiger*	10%	Y	NL
2. *Dittrichia graveolens*	5%	Y	NL
3. *Elymus triticoides*	1%		FAC
4.			
5.			
6.			
7.			
8.			
	16%	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 90% % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)
Total Number of Dominant Species Across All Strata: **2** (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: **0/2 = 0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species		x1 =
FACW species		x2 =
FAC species		x3 =
FACU species		x4 =
UPL species		x5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- Morphological Adaptationd[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 X

Remarks:
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 8%, 0.2 = 3.2%

SOIL

Sampling Point: SP-13

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	100%					loam	

[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: N/A

Depth (inches): N/A

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

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

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

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

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 06/01/22
Applicant/Owner: State: CA Sampling Point: SP-14
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 1-2%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.698459 Long: -121.403699 Datum: NAD83
Soil Map Unit Name: San Joaquin fine sandy loam, 0 - 3% slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes X	No	

Remarks:
Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-14 collected within swale-like feature along western boundary at base slope for the adjacent property graded gravel pad.

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: r = 5 ft)			
1. *Croton setiger*	10%	Y	NL
2. *Eryngium vaseyi*	5%	Y	FACW
3. *Dittrichia graveolens*	1%		NL
4. *Erodium moschatum*	1%		NL
5. *unidentified herb*	1%		?
6.			
7.			
8.			
	18%	=Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 90% % 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: **1/2 = 50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	**0**
FACW species	**5**	x2 =	**10**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**13**	x5 =	**65**
Column Totals:	**18** (A)		**75** (B)

Prevalence Index = B/A = **4.2**

Hydrophytic Vegetation Indicators:
_ Dominance Test is >50%
_ Prevalence Index is ≤3.0[1]
_ Morphological Adaptationd[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 X

Remarks:
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 9%, 0.2 = 3.6%

SOIL

Sampling Point: SP-14

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	7YR 3/3	88%	7.5YR 5/6	10%	C	M	clay loam	
			black	2%	C	M		Mg concentrations (beads)

[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: N/A

Depth (inches): N/A

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

Remarks:
Pit dug to ~11 inches below surface, too dry to dig deeper

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)
- X 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 X Depth (inches): ___

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

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

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

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

Remarks:
Saturation and inundation not clearly visible in aerial imagery.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 06/01/22
Applicant/Owner: State: CA Sampling Point: SP-15
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 1-3%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.699526 Long: -121.403481 Datum: NAD83
Soil Map Unit Name: Fiddyment fine sandy loam 0 - 1 % slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks: Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-15 collected midway within SWS-2. Boundaries primarily determined by vegetation species transition from Lythrum hyssopifolia to Dittrichea graveolens. Secondary indicators used for mapping the boundary include change in topography, intensity (i.e. depth, number, size) of cow hoof prints, and aerial signatures.

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: r = 5 ft)			
1. *Lythrum hyssopifolia*	25%	Y	OBL
2. *Eryngium vaseyi*	3%		FACW
3. *Polypogon monspeliensis*	1%		FACW
4. *Juncus bufonius*	1%		FACW
5.			
6.			
7.			
8.			
	30%	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	
% Bare Ground in Herb Stratum 70%	% Cover of Biotic Crust 10%		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 1/1 = 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	x1 =	
FACW species	x2 =	
FAC species	x3 =	
FACU species	x4 =	
UPL species	x5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[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 X No

Remarks:
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 15%, 0.2 = 6%

SOIL

Sampling Point: SP-15

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	80%	7.5YR 5/6	20%	C	M	clay loam	

[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)
- X 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: N/A

Depth (inches): N/A

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

Remarks:
Pit dug to ~12 inches deep, too dry to dig deeper

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**)
- X Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- X 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)
- X 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)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

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

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

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

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

Remarks:
Most recent Google Earth aerial image where potential saturation is visible is May 2018. Other years also include April 2014, April 2013, and more.
Inundation visible in February 2018.
Intense (i.e. depth, number, size) cow hoof print activity present within feature.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 06/01/22
Applicant/Owner: State: CA Sampling Point: SP-16
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): upland Local relief (concave, convex, none): none Slope (%): <3%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.699698 Long: -121.403341 Datum: NAD83
Soil Map Unit Name: Fiddyment fine sandy loam 0 - 1 % slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks:
Remarks: Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-16 collected upland of SP-15 at SWS-2 and SP-17 at SW-5.

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: r = 5 ft)			
1. *Elymus triticoides*	5%	Y	FAC
2. *Elymus caput-medusae*	5%	Y	NL
3. *Juncus bufonius*	5%	Y	FACW
4.			
5.			
6.			
7.			
8.			
	15%	=Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 60% % 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: **3** (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: **2/3 = 100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	x1 =	
FACW species	x2 =	
FAC species	x3 =	
FACU species	x4 =	
UPL species	x5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = **#DIV/0!**

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[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 X No

Remarks:
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 7.5%, 0.2 = 3%

SOIL

Sampling Point: SP-16

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 4/3	100%					loam	

[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: N/A

Depth (inches): N/A

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

Remarks:
Pit dug to ~11 inches deep, to dry to dig deeper

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 X Depth (inches): ___

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

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

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

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 06/02/22
Applicant/Owner: State: CA Sampling Point: SP-17
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1-3%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.699537 Long: -121.403247 Datum: NAD83
Soil Map Unit Name: Fiddyment fine sandy loam 0 - 1 % slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks: Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-17 collected within SW-5. Boundaries primarily determined by change in topography, intensity (i.e. depth, number, size) of cow hoof prints, and aerial signatures.

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: r = 5 ft)			
1. *Eleocharis macrostachya*	30%	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	30%	=Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 70% % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 1/1 = 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	x1 =	
FACW species	x2 =	
FAC species	x3 =	
FACU species	x4 =	
UPL species	x5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:

SOIL

Sampling Point: SP-17

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2	65%	5YR 5/8	15%	C	PL	silty clay	along living roots
			5YR 5/8	10%	C	M		
			black	5%	C	M		Mg concentrations (beads)
6-13	10YR 4/2	80%	5YR 5/8	5	C	PL	silty clay	
			5YR 5/8	10	C	M		

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X 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: N/A

Depth (inches): N/A

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X 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)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

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

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

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

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

Remarks:

Most recent Google Earth aerial image where potential saturation is visible is May 2018. Other years also include April 2014, April 2013, and more.
Inundation visible in February 2018.
Intense (i.e. depth, number, size) cow hoof print activity present within feature.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 06/02/22
Applicant/Owner: State: CA Sampling Point: SP-18
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 13%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.700217 Long: -121.403059 Datum: NAD83
Soil Map Unit Name: Fiddyment fine sandy loam 0 - 1 % slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:
Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-18 collected within the north end of SWS-2. Boundaries primarily determined by change in topography, intensity (i.e. depth, number, size) of cow hoof prints, and aerial signatures.

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: r = 5 ft)			
1. *Eryngium vaseyi*	20%	Y	FACW
2. *Lythrum hyssopifolia*	10%	Y	OBL
3. *Navarretia* species	5%		?
4. *Bromus catharticus*	2%		NL
5. *Elymus triticoides*	2%		FACW
6. *Rumex acetosella*	2%		FACU
7. *Polygonum aviculare*	<1%		FAC
8.			
	42%	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 60% % Cover of Biotic Crust 5%

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: 2/2 = 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species		x1 =
FACW species		x2 =
FAC species		x3 =
FACU species		x4 =
UPL species		x5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[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 X No

Remarks:
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 21%, 0.2 = 8.4%

SOIL

Sampling Point: SP-18

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2		10YR 5/8	10%	C	PL	clay loam	
			10YR 5/8	20%	C	M		
			Black	3%	C	M		Mg concentrations (beads)
6-12	10YR 4/2	75%	10YR 5/8	5%	C	PL	clay	
			10YR 5/8	15%	C	M		
			Black	5%	C	M		Mg concentrations (beads)

[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)
- X 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** X **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- X 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)
- X 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)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? **Yes** X **No** _____

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

Remarks:

Most recent Google Earth aerial image where potential saturation is visible is May 2018. Other years also include February 2018, April 2013, and more. Intense (i.e. depth, number, size) cow hoof print activity present within feature.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 28th and Q Street City/County: Rio Linda, Sacramento County Sampling Date: 06/02/22
Applicant/Owner: State: CA Sampling Point: SP-19
Investigator(s): K. Pulsipher, T. Torrez Section, Township, Range: Del Paso Land Grant
Landform (hillslope, terrace, etc.): upland Local relief (concave, convex, none): none Slope (%): <3%
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.700189 Long: -121.402952 Datum: NAD83
Soil Map Unit Name: Fiddyment fine sandy loam 0 - 1 % slopes NWI Classification: n/a
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks:
Site consists of livestock grazing pasture, signs of intense grazing present (i.e. disturbed plants, heavy hoof trampling). Per Google Earth street view and aerials, boundary fence erected sometime in 2020 indicating grazing has only occurred within the past 2 years. Google Earth aerial image from October 2020 also suggests entire pasture may have been graded. SP-19 collected upland to SP-18 at the north end of SWS-2.

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: r = 5 ft)			
1. *Elymus triticoides*	15%	Y	FAC
2. *Dittrichia graveolens*	5%	Y	NL
3. *Trifolium hirtum*	5%	Y	NL
4. *Erodium moschatum*	5%	Y	NL
5. *Elymus caput-medusae*	2%		NL
6.			
7.			
8.			
	32%	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 70% % 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: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 1/4 = 25% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	x1 =	
FACW species	x2 =	
FAC species	x3 =	
FACU species	x4 =	
UPL species	x5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:
- Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- Morphological Adaptationd[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 X

Remarks:
NL = not listed in National Wetland Plant List, assumed upland.
0.5 = 17.5%, 0.2 = 7%

SOIL

Sampling Point: SP-19

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 3/3	100%					loam	

[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: N/A

Depth (inches): N/A

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

Remarks:
Pit dug to ~11 inches below surface, too dry to dig deeper

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 X Depth (inches): ___

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

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

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

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

Remarks:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: 28th and Q Street Rio Linda
Project Number:
Stream: Ditch-1
Investigator(s): K. Pulsipher, T. Torrez

Date: 06/02/2022 **Time:**
Town: Rio Linda **State:**
Photo begin file#: **Photo end file#:**

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

Y ☐ / N ■ Is the site significantly disturbed?

Location Details:
Man-made roadside ditch along west side of 28th St

Projection: **Datum:** WGS84
Coordinates:38.698002, -121.401467

Potential anthropogenic influences on the channel system:
Feature is a man-made roadside ditch for stormwater management.

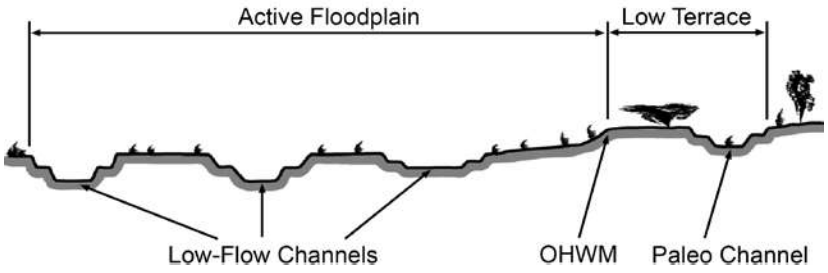
Brief site description:
The ditch is primarily unvegetated but exhibits a moderately well-defined bed and bank with OHWM and indicators of wetland hydrology (i.e. surface soil cracks, saturation in some places, biotic crust, drift deposits, sediment deposits). Coordinates above are for west top of bank.

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

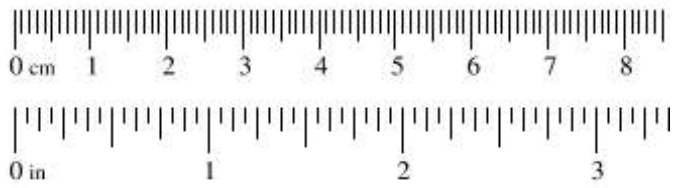


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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
   - ■ Digitized on computer
   - ■ GPS
   - ☐ Other:

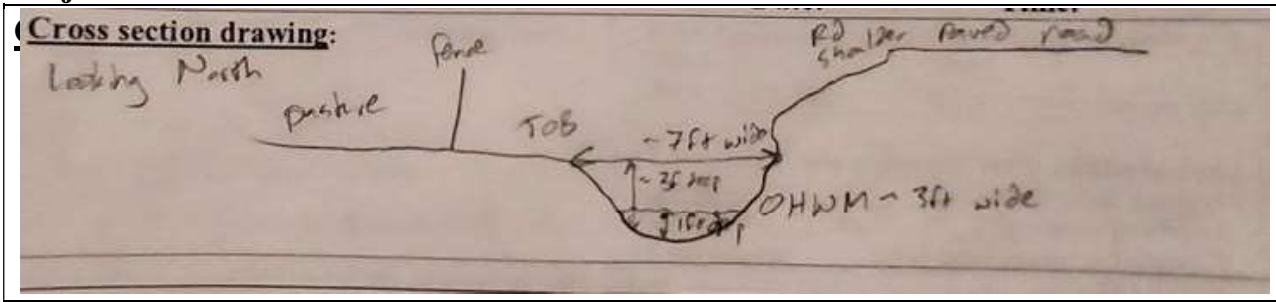
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 1439-21 **Cross section ID:** OHWM-1 **Date:** 06/02/2022 **Time:**

Cross section drawing:



OHWM

GPS point: 38.698002, -121.401461

Indicators:

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

Comments:

OHWM lat/long coordinates are for west bank. OHWM indicators observed were a break in slope, layer of fine silt on the surface below OHWM, surface soil cracks and biotic crust at and below OHWM. On average, OWHM width is ~3 ft and depth ~1 ft and top of bank is ~7 ft wide and ~3 ft deep.

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

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% 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:

N/A