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July 18, 2022 Project 00949.00004.001

Thad Johnson
Pappas Investments
2020 L Street, 5th Floor
Sacramento, CA 95811

**Subject: Aquatic Resources Delineation and Preliminary Jurisdictional Determination Addendum for the Holesapple (Crestview) Property Project (also known as Winding Ranch) in Carmichael, California**

Dear Mr. Johnson:

This letter, and associated attachments, addresses an addendum to the *Delineation of Waters of the United States for the Crestview Property* that was prepared by ECORP Consulting, Inc. (ECORP) in May 2015. For the purposes of this letter, the Holesapple (Crestview) Property Project (also known as Winding Ranch) will hereafter be referred to as Project.

The project site is located in Sacramento County approximately 1.75 miles southeast of Interstate 80 in the unincorporated community of Carmichael. The project site is located in a developed suburban area. It is bound by Winding Way to the north and Manzanita Avenue to the west, both high-traffic streets, to the east by Rampart Drive, Mary Lynn Lane, and high-density apartment complexes, and on the south by Jan Drive. The site is located on the U.S. Geological Survey (USGS) *Citrus Heights*, California 7.5-minute topographic quadrangles (Latitude -121.326085 North, Longitude 38.646039 West, NAD 83) (Figure 1, *Vicinity Map*).

## BACKGROUND

In response to the expansion of the Project footprint, HELIX Environmental Planning, Inc. (HELIX) was contracted to assess a 0.5-acre parcel (Sacramento County APN 24-50011-018) for aquatic resources, as well as areas expanded from a previous Study Area boundary. In addition to delineating aquatic resources on the 0.5-acre parcel, Pappas Investments (Client) requested that an updated aquatic resources map be prepared to update the 2015 delineation that was conducted by ECORP, which was issued a Preliminary Jurisdictional Determination by the U.S. Army Corps of Engineers (USACE) in June 2015 (SPK-2011-00364).

## METHODS

Prior to conducting the field survey, HELIX staff reviewed the *Delineation of Waters of the United States for the Crestview Property* prepared by ECORP (Attachment A) in May 2015, as well as aerial imagery, USFWS National Wetland Inventory data, and Natural Resources Conservation Service (NRCS) web soil survey data. Potential wetland areas identified in the preliminary desktop assessment of the site were investigated in the field by HELIX biologist Greg Davis on June 8, 2022, and HELIX Professional Wetland Scientist (PWS #2354) Patrick Britton on June 29, 2022, to determine the presence/absence of wetlands in accordance with the *Corps of Engineers Wetlands Delineation Manual*, the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0), and the USACE *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States*.

## RESULTS

No aquatic resources were observed within the 0.5-acre parcel during the survey conducted on June 8, 2022. Wetland Ditch (WD)-1 was expanded from 0.047-acre to 0.048-acre in the southern portion of the new Study Area boundary during the survey conducted on June 29, 2022. The aquatic resources delineation map from ECORP has been modified to include the 0.5-acre parcel, as well as other expansion areas (see HELIX's Aquatic Resources Delineation Map in Attachment B).

Data points characterizing upland sites within the 0.5-acre parcel were taken and recorded on data forms that are included in Attachment C of this letter.

## CONCLUSION

This letter will be included as a supporting attachment to the regulatory permit submittals regarding the findings within the expansion areas of the Project footprint. Additional supporting information is included in the Aquatic Resources Delineation Report from ECORP in Attachment A of this letter, as well as in the updated Aquatic Resources Delineation Map in Attachment B.

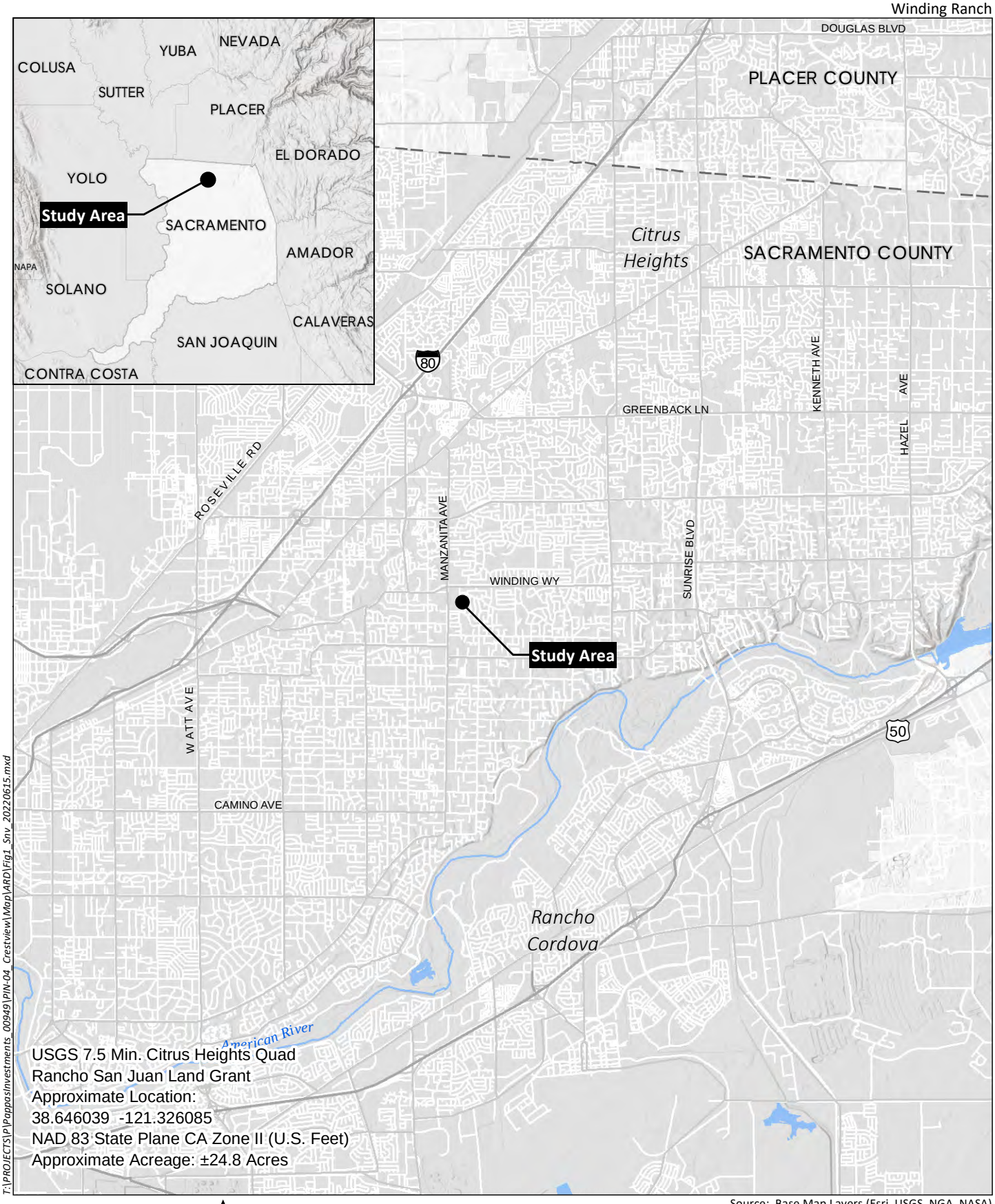
If you have any questions regarding the enclosed findings, please contact me at (916) 435-1202 or email GregD@helixepi.com.

Sincerely,

Greg Davis
Biologist

**Attachments:**

Figure 1: Vicinity Map
Attachment A: ECORP *Delineation of Waters of the United States for the Crestview Property*
Attachment B: Aquatic Resources Delineation Map, June 5, 2022
Attachment C: HELIX Supplemental Aquatic Resources Delineation Data Forms




USGS 7.5 Min. Citrus Heights Quad
Rancho San Juan Land Grant
Approximate Location:
38.646039 -121.326085
NAD 83 State Plane CA Zone II (U.S. Feet)
Approximate Acreage: ±24.8 Acres

T:\PROJECTS\P\PappasInvestments_00949\PIN-04_Crestview\Map\ARD\Fig1_Snv_20220615.mxd

0 1.5 Miles

Source: Base Map Layers (Esri, USGS, NGA, NASA)

HELIX Environmental Planning

# Vicinity Map

Figure 1

# Attachment A

ECORP *Delineation of Waters of the United States for the Crestview Property*

# Delineation of Waters of the United States
# For the
# Crestview Property

Sacramento County, California

Prepared For:

**Wells Fargo Bank, N.A. and Heather Holesapple, as Co-Trustees**

**For the Richard Holesapple Revocable Trust**

May 8, 2015

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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# 1.0 INTRODUCTION

On behalf of Wells Fargo Bank, N.A. and Heather Holesapple, as Co-Trustees for the Richard Holesapple Revocable Trust, ECORP Consulting, Inc. (ECORP) conducted a delineation of Waters of the United States (U.S.) for the ±23.25-acre Crestview Property (Property), south of Winding Way, East of Fair Oaks Boulevard, and north of Lincoln Avenue in Carmichael, Sacramento County, California (Figure 1. *Project Location and Vicinity*). The Property corresponds to an unsectioned portion of the San Juan Land Grant of the "Citrus Heights, California" 7.5-minute quadrangle (U.S. Department of Interior, U.S. Geological Survey [USGS] 1992). The approximate center of the Property is located at 38° 38' 48.29" North and 121° 19' 38.84" West within the Lower American Watershed (HUC #18020111, USGS 1978).

The Property was previously authorized to permanently fill 0.16 acre of Waters of the U.S. under a Nationwide Permit Number 39 (Commercial and Institutional Developments) SPK-2011-00364; however, since the permit expired in 2012 a new delineation of Waters of the U.S. was conducted. This report describes potential Waters of the U.S., including wetlands, identified within the Property that may be regulated by the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act (CWA) and the Central Valley Regional Water Quality Control Board (RWQCB), pursuant to Section 401 of the CWA. The information presented in this report provides data required by the USACE Sacramento District's Minimum Standards for Acceptance of Preliminary Wetland Delineations and in accordance with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE 2001, USACE 2008). The potential Waters of the U.S. boundaries depicted in this report represent a calculated estimation of the jurisdictional area within the site and are subject to modification following the USACE verification process.

# 2.0 REGULATORY SETTING

## 2.1 Waters of the United States

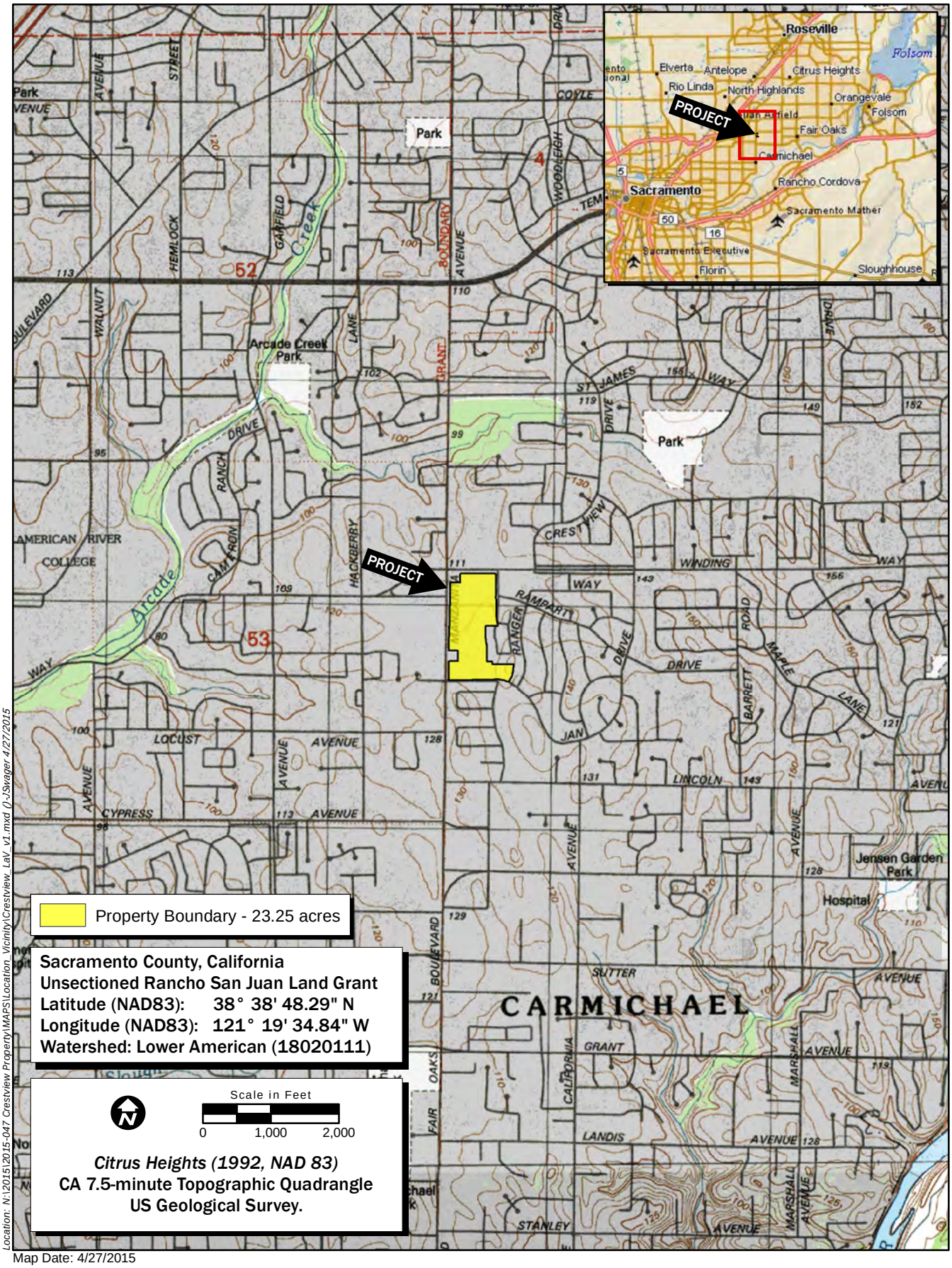
This report describes potential Waters of the U.S., including wetlands that may be regulated by the USACE under Section 404 of the CWA.

### *2.1.1 Wetlands*

Wetlands are "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 CFR 328.3(b), 51 FR 41250, November 13, 1986]. Wetlands can be perennial or intermittent and isolated or adjacent to other Waters.

### *2.1.2 Other Waters*

Other Waters are non-tidal, perennial, and intermittent watercourses and tributaries to such watercourses [33 CFR 328.3(a), 51 FR 41250, November 13, 1986]. The limit of USACE jurisdiction for non-tidal watercourses (without adjacent wetlands) is defined in 33 CFR 328.4(c)(1) as the "ordinary high water mark".




Location: N:\2015\2015-047 Crestview Property\MAPS\Location_Vicinity\Crestview_LaV_v1.mxd (J.Swager 4/27/2015

Map Date: 4/27/2015

Service Layer Credits: Copyright:© 2014 DeLorme

**Figure 1. Project Location and Vicinity**

*2015-047 Crestview Property*

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The ordinary high water mark (OHWM) is defined as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" [33 CFR 328.3(e), 51 FR 41250, November 13, 1986]. The bank-to-bank extent of the channel that contains the water flow during a normal rainfall year generally serves as a good first approximation of the lateral limit of USACE jurisdiction. The upstream limits of other waters are defined as the point where the OHWM is no longer perceptible.

## 2.2 Federal Clean Water Act

The USACE regulates discharge of dredged or fill material into Waters of the U.S. under Section 404 of the CWA. "Discharges of fill material" is defined as the addition of fill material into Waters of the U.S., including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes, and subaqueous utility lines [33 C.F.R. §328.2(f)]. In addition, Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into Waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Substantial impacts to wetlands, i.e., over 0.5 acre of impact, may require an individual permit from the USACE. Projects that only minimally affect wetlands, i.e., less than 0.5 acre of impact, may meet the conditions of one of the existing USACE Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions and is issued by the RWQCB.

## 2.3 Jurisdictional Assessment

Pursuant to the U.S. Environmental Protection Agency (USEPA) and USACE memorandum regarding CWA jurisdiction, issued following the United States Supreme Court's decision in the consolidated cases Rapanos v. United States and Carabell v. United States (herein referred to as Rapanos), the agencies will assert jurisdiction over the following Waters: "traditionally navigable" Waters (TNWs), all wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are "relatively permanent" (RPW) (i.e., tributaries that typically flow year-round or have continuous flow at least seasonally), and wetlands that directly abut such tributaries (USEPA and USACE 2007).

Waters requiring a significant nexus determination by the USACE and USEPA to establish jurisdiction include non-navigable tributaries that are not relatively permanent, wetlands adjacent to non-navigable tributaries that are not relatively permanent, and wetlands adjacent to but do not directly abut a relatively permanent non-navigable tributary (USEPA and USACE 2007). The jurisdictional determination is a fact-based evaluation to establish whether a Water has a significant nexus with a TNW. The significant nexus analysis assesses the flow characteristics and functions of the non-navigable tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of downstream TNWs (USEPA and USACE 2007).

## 2.4 Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of storm water runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, with any region that could affect the water of the state" (Water Code 13260[a]).

# 3.0 METHODS

This jurisdictional delineation of potential Waters of the U.S. was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Region Supplement) (USACE 2008). The boundaries of potential Waters of the U.S. were delineated through aerial photograph interpretation and standard field methods (i.e., paired data set analyses) and all wetland data were recorded on Arid West Region – Wetland Determination Data Forms, provided in Attachment A. A color aerial photograph (1"=75' scale, USGS 2011) was used to assist with mapping and ground-truthing, provided as Attachment B. The extent of the potential Waters of the U.S., including wetlands, within the Property was recorded in the field using a post-processing capable global positioning system (GPS) unit with sub-meter accuracy (Trimble GeoXT). In addition, the USACE's Six County Aquatic Resources Inventory (SCARI) was queried for previously-mapped features on-site. Munsell Soil Color Charts (Kollmorgen Instruments Co. 1990) and the Soil Survey of Sacramento County, California (NRCS 2015) were used to aid in identifying hydric soils in the field. The Jepson Manual, Second Edition (Baldwin, et al., editors. 2012) was used for plant nomenclature and identification.

A field survey was conducted on 20 April 2015 by ECORP biologists Krissy Walker and Emily Mecke. Ms. Walker and Ms. Mecke systematically surveyed the entire ±23.25-acre Property to determine the location and extent of potential Waters of the U.S. including wetlands within the Property. Paired locations were sampled to evaluate whether or not the vegetation, hydrology, and soils supported a determination of wetland or non-wetland status. At each sampling point pair, one point was located such that it was within the estimated wetland area, and the other point was situated outside the limits of the estimated wetland area.

## 3.1 Routine Determinations for Wetlands

The following three criteria must be met to be determined a wetland:

- A majority of dominant vegetation species are wetland associated species
- Hydrologic conditions exist that result in periods of flooding, ponding, or saturation during the growing season
- Hydric soils are present

### *3.1.1 Vegetation*

Hydrophytic vegetation is defined as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanent or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present (Environmental Laboratory 1987). The definition of wetlands includes the phrase "a prevalence of vegetation typically adapted for life in saturated soil conditions." Prevalent vegetation is characterized by the dominant plant species comprising the plant community (Environmental Laboratory 1987). The dominance test is the basic hydrophytic vegetation indicator and was applied at each sampling point location. The "50/20 rule" was used to select the dominant plant species from each stratum of the community. The rule states that for each stratum in the plant community, dominant species are the most abundant plant species (when ranked in descending order of coverage and cumulatively totaled) that immediately exceed 50 percent of the total coverage for the stratum, plus any additional species that individually comprise 20 percent or more of the total cover in the stratum (HQUSACE 1992, USACE 2008).

Dominant plant species observed at each sampling point were then classified according to their indicator status (probability of occurrence in wetlands) (Table 1), North American Digital Flora: National Wetland Plant List (Lichvar et al. 2014). The site was considered to be dominated by hydrophytic vegetation if the majority (greater than 50 percent) of the dominant vegetation on a site are classified as obligate (OBL), facultative wetland (FACW), or facultative (FAC).

Table 1. Classification of Wetland-Associated Plant Species[1]

| Plant Species Classification | Abbreviation | Probability of Occurring in Wetland |
|---|---|---|
| Obligate | OBL | Almost always occur in wetlands |
| Facultative Wetland | FACW | Usually occur in wetlands, but may occur in non-wetlands |
| Facultative | FAC | Occur in wetlands and non-wetlands |
| Facultative Upland | FACU | Usually occur in non-wetlands, but may occur in wetlands |
| Upland | UPL | Almost never occur in wetlands |
| Plants That Are Not Listed (assumed upland species) | N/L | Does not occur in wetlands in any region. |

[1]Source: Lichvar et al. 2014

In instances where indicators of hydric soil and wetland hydrology were present but the plant community failed the dominance test, the vegetation was re-evaluated using the prevalence index. The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot, where each indicator status category is given a numeric code (OBL=1, FACW=2, FAC=3, FACU=4, and UPL=5) and weighting is by abundance (percent cover). If the plant community failed the prevalence index, the presence/absence of plant morphological adaptations to prolonged inundation or saturation in the root zone was evaluated.

### *3.1.2 Soils*

A hydric soil is defined as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (NRCS 2003). Indicators that a hydric soil is present include, but are not limited to, histosols, histic epipedon, hydrogen sulfide, depleted below dark surface, sandy redox, loamy gleyed matrix, depleted matrix, redox dark surface, redox depressions, and vernal pools.

A soil pit was excavated to the depth needed to document an indicator, to confirm the absence of indicators or until refusal at each sampling point. The soil was then examined for hydric soil indicators. Soil colors were determined while the soil was moist using the *Munsell Soil Color Charts* (Kollmorgen Instruments Co. 1990).

### *3.1.3 Hydrology*

By definition, wetlands are seasonally or perennially inundated or saturated at or near (within 12 inches of) the soil surface. Primary indicators of wetland hydrology include, but are not limited to: visual observation of saturated soils, visual observation of inundation, surface soil cracks, inundation visible on aerial imagery, water-stained leaves, oxidized rhizospheres along living roots, aquatic invertebrates, water marks (secondary indicator in riverine environments), drift lines (secondary indicator in riverine environments), and sediment deposits (secondary indicator in riverine environments). The occurrence of one primary indicator is sufficient to conclude that wetland hydrology is present. If no primary indicators are observed, two or more secondary indicators are required to conclude wetland hydrology is present. Secondary indicators include but are not limited to: drainage patterns, crayfish burrows, FAC-neutral test, and shallow aquitard. The occurrence of at least one primary indicator or two secondary indicators is required to confirm the presence of wetland hydrology.

## 4.0 RESULTS

## 4.1 Existing Site Conditions

The Property is comprised of level to gently rolling terrain and is located in the Sacramento Valley subregion of the California Floristic Province (Baldwin, et al., editors. 2012). This area is characterized by a Mediterranean climate, which is comprised of hot and dry summer months and cool and wet winter months. The Property is situated at an elevation range of approximately 115 feet to 140 feet above mean sea level. The Property does not appear to have been disked or grazed in several years.

During the 2014-2015 wet season (October 1, 2014 through March 31, 2015) 9.31 inches of precipitation was recorded in Sacramento prior to the field survey (Accuweather.com 2015). The average annual rainfall for Sacramento County is 18.15 inches (Western Regional Climate Center 2015). Precipitation recorded for the water year (October 1, 2014 through March 31, 2015) was 64 percent for the American River Basin and 85 percent for the Sacramento Valley Floor as compared to the historic average (CDEC 2015). The most recent significant storm event prior to the delineation occurred between February 6 and February 9, 2015 with a total of 2.29 inches of rain over the course of 3 days. Small amounts of precipitation have been recorded in March and April between this event and the date that the field work was conducted (Accuweather.com 2015).

The majority of the Property is composed non-native annual grassland. Plant species observed in the non-native annual grassland include oat (*Avena* sp.), ripgut brome (*Bromus diandrus*), cut-leaved geranium (*Geranium dissectum*), prickly lettuce (*Lactuca serriola*), foxtail barely (*hordeum murinum*), and winter vetch (*Vicia villosa*). Potential wetlands are located in the northwestern and south central portion of the Property. These aquatic features are described in detail in Section 4.2 - Potential Waters of the U.S.

### *4.1.1 Six County Aquatic Resources Inventory*

No features mapped by USACE's SCARI occur on-site. The closest mapped feature is approximately ½ mile north of the Property (USACE, Sacramento District 2010).

### *4.1.2 Soils*

According to the Web Soil Survey (NRCS 2015), two soil units, or types, have been mapped within the Property (Table 2 and Figure 2. *Natural Resources Conservation Service Soil Types*). These include: (227) Urban Land; and (229) Urban land – Xerarents-Fiddyment complex, 0 to 8 percent slopes. Both of these soil units are not considered hydric (NRCS 2006).

Table 2. Natural Resources Conservation Service Soil Types

| Soil Unit | Hydric | Hydric Components (NRCS 2006) |
|---|---|---|
| 227- Urban Land | No | N/A |
| 229 – Xerarents-Fiddyment complex, 0 to 9 percent slopes | No | N/A |

## 4.2 Potential Waters of the U.S.

A total of 0.164 acre of seasonal wetland swale was mapped on the Property (Figure 3. *Jurisdictional Delineation*). The Arid West wetland determination data forms are included as Attachment A, an aerial photograph of the site is included in Attachment B, and a list of plant species observed on-site is included in Attachment C. A discussion of the wetlands is presented below.

### *4.2.1 Wetlands*

**Seasonal Wetland Swale**

Seasonal wetland swales are linear wetland features that do not exhibit an OHWM. These are typically inundated for short periods during and generally only immediately after rain events, but usually maintain soil saturation for longer periods into the growing season.

Vegetation

The dominant plant species found within the seasonal wetland swale included swamp smartweed (*Persicaria hydropiperiodes*) (see Attachment A). Other plants found within the seasonal wetland swale included common cattail (*Typha latifolia*), cut-leaf geranium (*Geranium dissectum*), goose grass (*Galium aparine*), harding grass (*Phalaris aquatic*), soft brome (Bromus hodeaceus), wild grape (*Vitis californica*), wild radish (*Raphanus raphanistrum*), common fig (*Ficus carica*), valley oak (*Quercus lobata*), and cork oak (*Quercus suber*). Hydrophytic vegetation was determined to be present in both of the sampling points (01 and 03) within seasonal wetland swales due to the passage of the dominance test.


Location: N:\2015\2015-047 Crestview Property\MAPS\Soils_and_Geology\Soils\Crestview_Soils_v1.mxd (JDS) JSwager 4/22/2015

Map Date: 4/22/2015
Photo Source: USGS 2013

**Figure 2. Natural Resources Conservation Service Soil Types**

*2015-047 Crestview Property*

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# Figure 3.
# Jurisdictional Delineation [2]


## Map Features

- Property Boundary [1]
- Culvert
- Three Criteria Sampling Point

**Wetlands - 0.164 acres** [2]

- Seasonal Wetland Swale - 0.164 acres

[1] *Boundary Source: Sacramento County GIS Parcels. Boundary is approximate.*

[2] *Subject to U.S. Army Corps of Engineers verification*
*This exhibit depicts information and data produced in strict accord with the wetland delineation methods described in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region and conforms to Sacramento District specifications. However, feature boundaries have not been legally surveyed and may be subject to minor adjustments if more accurate locations are required. The summary values for each feature have been rounded to the nearest round number or 1/100 decimal. Summation of these values in the table may not equal the total reported.*

## Three Criteria Sampling Points

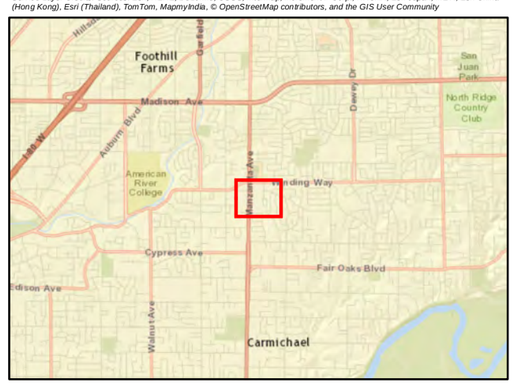
*Waters of the U.S.*

| Sample Point | Latitude/Longitude |
|---|---|
| 01 | 38.646739/-121.326907 |
| 03 | 38.645148/-121.326329 |

*Upland*

| Sample Point | Latitude/Longitude |
|---|---|
| 02N | 38.646744/-121.326847 |
| 04N | 38.645125/-121.326376 |

*Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community*

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Location: N:\2015\2015-047 Crestview Property\MXPS\Wetland_Mapping\Wetland_Delineation\v1\Crestview_WDv1_20150422_11x17.mxd (JDS)-JSwager 4/22/2015

*2015-047 Crestview Property*

Scale in Feet
0 200

Photo Date: USGS 2011
Delineators: K. Walker, E. Mecke
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

Map Date: 4/22/2015

Soils

The soil matrix color from the surface to a depth of 4 inches within sampling point 01 was 10YR 2/1 (without redox features). The soil matrix color from a depth of 4 inches to a depth 16 inches was 10YR 3/3 with 15% redox concentrations located in pore linings colored 7.5YR 4/6. Soils within sampling point 01 were not determined to be hydric based on hydric soil indicators; however, because there is so much urban runoff (e.g., asphalt) these soil are problematic and assumed hydric because there is an obvious seasonal wetland swale in this location. The soil matrix color from the surface to a depth of 6 inches in the upland area (02N) adjacent to sampling point 01 was 10YR3/6 (without redox features); refusal was encountered at greater than 6 inches in depth (Attachment A). Soils within this upland sampling point (02N) were determined not to be hydric.

The soil matrix color from the surface to a depth of 16 inches within sampling point 03 was 7.5YR 2.5/2 (without redox features). Soils within sampling point 03 were not determined to be hydric; however, as stated above because there is so much urban runoff (e.g., asphalt, sedimentation) these soil are problematic and assumed hydric because there is an obvious seasonal wetland swale in this location. The soil matrix color from the surface to a depth of 6 inches in the upland area (04N) adjacent to sampling point 03 was 7.5YR 2.5/2 (without redox features) (Attachment A). Soils within the upland sampling point were determined not to be hydric.

Hydrology

Wetland hydrology indicators observed within the seasonal wetland swale included Saturation (A3), sediment deposits (B2, nonriverine), drift deposits (B3, nonriverine), and oxidized rhizospheres along living roots (C3) (Attachment A). Wetland hydrology indicators were not found in the upland areas adjacent to the seasonal wetland swales.

## 5.0 JURISDICTIONAL ASSESSMENT

The potential wetlands and upland areas on-site drain to the northwest to culverts on the western and northern boundaries of the Property. These culverts flow into Arcade Creek via a storm drain system. Therefore, potential wetlands on-site would likely be considered tributary to Arcade Creek, a perennial creek that flows from east to west to the southwest of the Property. Because Arcade Creek flows for three or more months of the year, it would likely be considered relatively permanent water (RPW). Arcade Creek is a tributary to the American River via Steelhead Creek. The USACE Sacramento District has identified the American River as a navigable water.

As a RPW tributary to a Navigable Water, Arcade Creek would be subject to USACE jurisdiction, along with Waters of the U.S. that abut Arcade Creek. Therefore, the potential Waters of the U.S. on the Property would likely be jurisdictional pursuant to the USEPA and USACE memorandum regarding CWA jurisdiction following the Rapanos decision (USEPA and USACE 2007).

## 6.0 CONCLUSION

A total of 0.164 acre of potential Waters of the U.S. has been mapped on-site. This acreage represents a calculated estimation of the jurisdictional area within the Property and is subject to modification following

the USACE verification process. Fill within jurisdictional features would require permitting pursuant to Section 404 and 401 of the federal CWA.

# 7.0 REFERENCES

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## LIST OF ATTACHMENTS

# ATTACHMENT A

Wetland Determination Data Forms - Arid West Region

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Crestview City/County: Carmichael Sampling Date: 4/20/15

Applicant/Owner: see report State: CA Sampling Point: 1

Investigator(s): K. Walke, E Meeke Section, Township, Range: N/A

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

Subregion (LRR): C Lat: 38.646739 Long: -121.326907 Datum: NAD83

Soil Map Unit Name: 229 - Urban land - xerarents - Fiddyment complex, 0 to 8 percent slopes NWI classification: none

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

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

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

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

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

Remarks:

seasonal wetland swale.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 4x4) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | _____ = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: _____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | _____ = Total Cover | | |
| **Herb Stratum** (Plot size: _____) | | | |
| 1. Perstraria hydropiperoides | 80% | Y | OBL |
| 2. Geranium dissectum | 5% | N | UPL |
| 3. Gallum aparine | 10% | N | FACU |
| 4. Phalaris aquatica | 2% | N | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 97 = Total Cover | | |
| **Woody Vine Stratum** (Plot size: _____) | | | |
| 1. | | | |
| 2. | | | |
| | _____ = Total Cover | | |

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

**Dominance Test worksheet:**

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

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

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

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 80 | x 1 = | 80 |
| FACW species | _____ | x 2 = | _____ |
| FAC species | _____ | x 3 = | _____ |
| FACU species | 12 | x 4 = | 48 |
| UPL species | 5 | x 5 = | 25 |
| Column Totals: | 97 (A) | | 153 (B) |

Prevalence Index = B/A = 1.58

**Hydrophytic Vegetation Indicators:**

X Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No _____

Remarks:

Hydrophytic vegetation is present.

## SOIL

Sampling Point: 1

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 10YR 3/1 | 100 | | | | | sandy clay loam | |
| 4-16 | 10YR 3/3 | 85 | 7.5YR 4/6 | 15 | C | PL | 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)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

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

Remarks:

Soil was not determined to be hydric based on hydric soil indicators; however, because there is so much urban runoff these soils are problematic and assumed hydric b/c there is an obvious swale in this location.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

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

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

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 2

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

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

Remarks:

Wetland hydrology is present.

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Crestview City/County: Carmichael Sampling Date: 4/20/15

Applicant/Owner: see report State: CA Sampling Point: 2N

Investigator(s): K. Walker, E. Mecke Section, Township, Range: N/A

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

Subregion (LRR): C Lat: 38.646744 Long: -121.326847 Datum: NAD83

Soil Map Unit Name: 229 - Urban land - Xerarents - Fiddyment complex, 0 to 8 percent slopes NWI classification: none

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

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

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

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

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

Remarks:

Upland adjacent to seasonal wetland swale (data point 01).

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: _____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | _____ = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: _____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | _____ = Total Cover | | |
| **Herb Stratum** (Plot size: 4x4') | | | |
| 1. Bromus hordeaceus | 1 | N | FACU |
| 2. Avena sp. | 20 | N | UPL |
| 3. Rumex crispus | 2 | N | FAC |
| 4. Hordeum murinum | 5 | N | FACU |
| 5. Bromus diandrus | 3 | N | UPL |
| 6. Vicia villosa | 3 | N | UPL |
| 7. Medicago polymorpha | 3 | N | FACU |
| 8. Phalaris aquatica | 65 | Y | FACU |
| | 102 = Total Cover | | |
| **Woody Vine Stratum** (Plot size: _____) | | | |
| 1. | | | |
| 2. | | | |
| | _____ = Total Cover | | |

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

**Dominance Test worksheet:**

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

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

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

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | _____ | x 1 = | _____ |
| FACW species | _____ | x 2 = | _____ |
| FAC species | 2 | x 3 = | 6 |
| FACU species | 74 | x 4 = | 296 |
| UPL species | 26 | x 5 = | 130 |
| Column Totals: | 102 (A) | | 432 (B) |

Prevalence Index = B/A = 4.24

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes _____ No X

Remarks:

Hydrophytic vegetation is not present.

## SOIL

Sampling Point: aN

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 3/2 | 100 | | | | | silty 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)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

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

Remarks:

refusal, hydric soil is not present

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

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

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

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

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

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

Remarks:

wetland hydrology is not present.

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Crestview City/County: Carmichael Sampling Date: 4/20/15

Applicant/Owner: see report State: CA Sampling Point: 3

Investigator(s): K. Walker, E. Mecke Section, Township, Range: N/A

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

Subregion (LRR): C Lat: 38.695148 Long: -121.324329 Datum: NAD 83

Soil Map Unit Name: 229 - Urban land - Xerarents - Fiddyment complex, 0 to 8 percent slopes NWI classification: none

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

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

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

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

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

Remarks:

seasonal wetland swale.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | ____ = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | ____ = Total Cover | | |
| **Herb Stratum** (Plot size: 4x4) | | | |
| 1. Persicaria hydropiperoidies | 25 | Y | OBL |
| 2. Typha latifolia | 10 | N | OBL |
| 3. Unk. grass | 60 | Y | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 95 = Total Cover | | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | ____ = Total Cover | | |

% Bare Ground in Herb Stratum 8 % Cover of Biotic Crust ____

**Dominance Test worksheet:**

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

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

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

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 35 | x 1 = | 35 |
| FACW species | ____ | x 2 = | ____ |
| FAC species | 60 | x 3 = | 180 |
| FACU species | ____ | x 4 = | ____ |
| UPL species | ____ | x 5 = | ____ |
| Column Totals: | 95 (A) | | 215 (B) |

Prevalence Index = B/A = 2.26

**Hydrophytic Vegetation Indicators:**

X Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks:

Grass unidentifiable but assumed to be a FAC species based on the hydrology and associated identifiable species.

## SOIL

Sampling Point: 3

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-16 | 7.5YR2.5/1 | 100 | | | | | sandy 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)
- X Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

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

Remarks:

Soils not determined to be hydric based on hydric soil indicators; however, because there is so much urban runoff these soils are problematic and assumed hydric b/c there is an obvious SWS in this location.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

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

Water Table Present? Yes ✓ No ___ Depth (inches): 3

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

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

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

Remarks:

Wetland hydrology present.

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Crestview City/County: Carmichael Sampling Date: 4/20/15

Applicant/Owner: see report State: CA Sampling Point: 4N

Investigator(s): K. Walker, E Meeke Section, Township, Range: N/A

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

Subregion (LRR): C Lat: 38.645125 Long: -121.326376 Datum: NAD83

Soil Map Unit Name: 229- Urban land - xerarents - Fiddyment complex NWI classification: none
0 to 8 percent slopes

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

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

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

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

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

Remarks:

Upland adjacent to seasonal wetland swale (data point 03)

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | _____ = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: _____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | _____ = Total Cover | | |
| **Herb Stratum** (Plot size: _____) | | | |
| 1. Bromus diandrus | 30 | Y | UPL |
| 2. Bromus hordeaceus | 10 | N | FACU |
| 3. Avena sp. | 40 | Y | UPL |
| 4. Convolvus arvensis | 2 | N | UPL |
| 5. Geranium dissectum | 10 | N | UPL |
| 6. Erodium botrys | 5 | N | FACU |
| 7. Latuca serriola | 15 | N | FACU |
| 8. Galium aparine | 2 | N | FACU |
| | 114 = Total Cover | | |
| **Woody Vine Stratum** (Plot size: _____) | | | |
| 1. | | | |
| 2. | | | |
| | _____ = Total Cover | | |

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

**Dominance Test worksheet:**

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

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

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

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 32 | x 1 = | 32 |
| FACW species | _____ | x 2 = | _____ |
| FAC species | _____ | x 3 = | _____ |
| FACU species | _____ | x 4 = | _____ |
| UPL species | 82 | x 5 = | 410 |
| Column Totals: | 114 (A) | | 442 (B) |

Prevalence Index = B/A = 3.8

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes _____ No X

Remarks:

Hydrophytic vegetation is not present.

## SOIL

Sampling Point: 4N

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 7.5YR 2.5/2 | 100 | | | | | Silty 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)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

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

Remarks:

Refusal, hydric soils are not present.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

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

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

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

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

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

Remarks:

Wetland hydrology is not present.

# ATTACHMENT B

Aerial Photograph of the Property

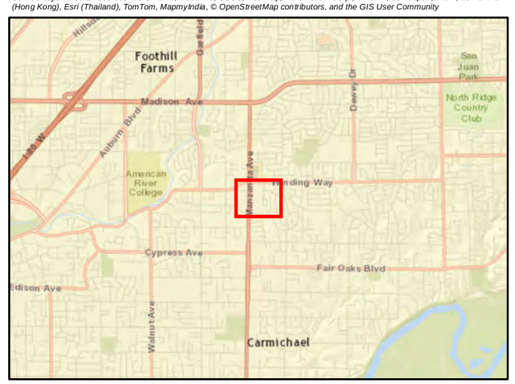
# Attachment B
# Aerial Photo

WINDING WAY
WINDMILL WAY
RAMPART DR
MARY LYNN LN
MANZANITA AVE
RANGER WAY
STONEY WAY
MARBLE WAY
KIMBERLY HILL CT
JAN DR
SALMAAN DR
JAN DR

## Map Features

Property Boundary [1]

*Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community*




ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Location: N:\2015\2015-047 Crestview Property\MAPS\Wetland_Mapping\Wetland_Delineation\v1\Crestview_WDv1_20150422_11x17_Aerial.mxd (JDS) JSwager 4/22/2015

*2015-047 Crestview Property*

Scale in Feet
0 200

Photo Date: USGS 2011
[1] Sacramento County GIS Parcels. Boundary is approximate.
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

Map Date: 4/22/2015

# ATTACHMENT C

Plant Species Observed On-Site

**Plants Observed On-Site, April 20, 2015**

| Scientific Name | Common Name |
|---|---|
| **ASTERACEAE** | **SUNFLOWER FAMILY** |
| *Cichorium intybus** | Chicory |
| *Lactuca serriola** | Prickly lettuce |
| **CONVOLVULACEAE** | **MORNING-GLORY FAMILY** |
| *Convolvulus arvensis** | Morning glory |
| **CYPERACEAE** | **SEDGE FAMILY** |
| *Carex* sp. | Sedge |
| **FABACEAE** | **LEGUME FAMILY** |
| *Vicia villosa** | Winter vetch |
| *Medicago polymorpha** | Bur clover |
| **FAGACEAE** | **OAK FAMILY** |
| *Quercus lobata* | Valley oak |
| *Quercus douglasii* | Blue oak |
| *Quercus suber** | Cork oak |
| **GERANIACEAE** | **GERANIUM FAMILY** |
| *Geranium dissectum** | Cut-leaved geranium |
| *Erodium botrys** | Filaree |
| **JUGLANDACEAE** | **WALNUT FAMILY** |
| *Juglans* sp.* | Walnut |
| **MORACEAE** | **MULBERRY FAMILY** |
| *Morus* sp. | Mulberry |
| **POACEAE** | **GRASS FAMILY** |
| *Avena* sp.* | Oat |
| *Bromus Diandrus** | Ripgut brome |
| *Bromus hordeaceus** | Soft brome |
| *Hordeum murinum** | Barley |
| *Phalaris aquatica** | Harding grass |
| **POLYGONACEAE** | **BUCKWHEAT FAMILY** |
| *Persicaria hydropiperoides* | Swamp smartweed |
| *Rumex crispus** | Curly dock |

**Plants Observed On-Site, April 20, 2015 Continued.**

| Scientific Name | Common Name |
|---|---|
| **TYPHACEAE** | **CATTAIL FAMILY** |
| *Typha latifolia* | Broad-leaf cattail |
| **RUBIACEAE** | **MADDER FAMILY** |
| *Galium aparine* | Goose grass |
| **VITACEAE** | **GRAPE FAMILY** |
| *Vitis californica* | California wild grape |

# ATTACHMENT D

Wetland Delineation Shape Files

**(to be included with USACE submittal only)**

# Attachment B

Aquatic Resources Delineation Map,
June 5, 2022

**Other Features**

- Upland Data Point
- Culvert
- Drop Inlet
- Contours (1ft)
- Ditch/Canal - 0.035 acre/1,466 LF
- Study Area - 24.80 Acres

## AQUATIC RESOURCES INDIVIDUAL FEATURE

| Seasonal Wetland Ditch | | | |
|---|---|---|---|
| **Label** | **Acres** | **Latitude** | **Longitude** |
| WD-1 | 0.117 | 38.647592 | -121.326914 |
| WD-2 | 0.048 | 38.644983 | -121.326226 |
| **Subtotal** | **0.165** | | |


## NOTES

- The boundaries and jurisdictional status of all waters shown on this map are preliminary and subject to verification by the U.S. Army Corps of Engineers.
- Delineation conducted by Foothills and Associates on 3/15/11 and 4/19/11 by KDW.
- Delineation conducted by ECORP on 6/30/2015. updated by G. Davis on 6/9/2022 and P. Britton on 6/29/2022.
- Aquatic resources were mapped by HELIX using a Juniper Geode GNSS submeter GPS unit.
- This delineation utilizes the USACE 1987 three-parameter methodology and Arid West Supplement to delineate jurisdictional waters of the U.S.
- The Hydrologic Unit Code for this site is 18020111.
- Topographic contour interval is 1 foot.
- Coordinate System: State Plane Zone II.
- Projection: Lambert Conic Conformable.
- Datum: North American Datum 1983.

Aerial Imagery Date: 6/03/2021
Aerial Imagery Source: Google Earth

Document Path: T:\PROJECTS\PapasInvestments_00949\PIN-04_CrestviewMap\ARDAttB_ARD_20220615.mxd

HELIX Environmental Planning

USACE REGULATORY FILE #: SPK-2011-00364
VERIFIED BY: TBD
DATE OF VERIFICATION: TBD

REVISIONS

| DATE | DESCRIPTION | BY |
|---|---|---|
| | | |
| | | |
| | | |

0 150 300
Feet

1 inch = 150 feet

N

Drawn By: JCD

# AQUATIC RESOURCES DELINEATION MAP

**Winding Ranch Project**

City of Carmichael, Sacramento County, California

*July 5, 2022*

Attachment B

# Attachment C

## HELIX Supplemental Aquatic Resources Delineation Data Forms

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Holesapple/Crestview/Winding Ranch Project City/County: Carmichael/Sacramento Sampling Date: 6/9/2022

Applicant/Owner: Pappas Investments State: CA Sampling Point: 1

Investigator(s): Greg Davis Section, Township, Range: Unsectioned Rancho San Juan Land Grant

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): C Lat: 38.648876 Long: -121.327143 Datum: NAD83

Soil Map Unit Name: 227 - Urban Land NWI classification: None

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

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

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

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

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

Remarks:

Site is located in a small, upland swale.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 25' x 25') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | = Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 10' x 10')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | = Total Cover | | |
| **Herb Stratum (Plot size: 10' x 10')** | | | |
| 1. Avena barbata | 70 | Y | NI |
| 2. Bromus diandrus | 30 | Y | NI |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 100 = Total Cover | | |
| **Woody Vine Stratum (Plot size: 10' x 10')** | | | |
| 1. | | | |
| 2. | | | |
| | = Total Cover | | |

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

**Dominance Test worksheet:**

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

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

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

**Prevalence Index worksheet:**

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

Prevalence Index = B/A = _____

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes _____ No ✓

Remarks:

Hydrophytic vegetation was not present at this site.

## SOIL

Sampling Point: 1

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 3/2 | 100 | - | - | - | - | L | gravelly |
| 2-12 | 10YR 3/3 | 100 | - | - | - | - | L | gravelly |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

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

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

**Indicators for Problematic Hydric Soils[3]:**

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

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

**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

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

Remarks:

Hydric soils were not observed at this site.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

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

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

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

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

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

Remarks:

No wetland hydrology indicators were observed at this site.

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Holesapple/Crestview/Winding Ranch Project City/County: Carmichael/Sacramento Sampling Date: 6/9/2022

Applicant/Owner: Pappas Investments State: CA Sampling Point: 2

Investigator(s): Greg Davis Section, Township, Range: Unsectioned Rancho San Juan Land Grant

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

Subregion (LRR): C Lat: 38.648943 Long: -121.327144 Datum: NAD83

Soil Map Unit Name: 227 - Urban Land NWI classification: None

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

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

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

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

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

Remarks:

Site is located adjacent to Winding Way at the downslope end of a small swale.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 25' x 25') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | = Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 10' x 10')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | = Total Cover | | |
| **Herb Stratum (Plot size: 10' x 10')** | | | |
| 1. Avena barbata | 50 | Y | NI |
| 2. Phyla nodiflora | 40 | Y | FACW |
| 3. Cichorium intybus | 5 | | FACU |
| 4. Convolvulus arvensis | 5 | | NI |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 100 = Total Cover | | |
| **Woody Vine Stratum (Plot size: 10' x 10')** | | | |
| 1. | | | |
| 2. | | | |
| | = Total Cover | | |

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

**Dominance Test worksheet:**

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

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

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

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: |
|---|---|
| OBL species 0 | x 1 = 0 |
| FACW species 40 | x 2 = 80 |
| FAC species 0 | x 3 = 0 |
| FACU species 5 | x 4 = 20 |
| UPL species 50 | x 5 = 250 |
| Column Totals: 100 (A) | 350 (B) |

Prevalence Index = B/A = 3.5

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes _____ No ✓

Remarks:

Hydrophytic vegetation was not present at this site.

## SOIL

Sampling Point: 2

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 3/2 | 100 | - | - | - | - | L | very gravelly |
| 6- | REFUSAL | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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: Gravel/rock

Depth (inches): 6

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

Remarks:

Hydric soils were not observed at this site.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

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

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

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

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

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

Remarks:

No wetland hydrology indicators were observed at this site.