

Wetland Delineation  
For  
**Timberline**  
Placer County, California

27 September 2007

Prepared For:  
**Western Care Construction Company**



**ECORP Consulting, Inc.**  
ENVIRONMENTAL CONSULTANTS

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## **INTRODUCTION**

On behalf of Western Care Construction Company, Inc., ECORP Consulting, Inc. (ECORP) conducted a wetland delineation of the 93±-acre Timberline site, located immediately north of Bell Road and approximately 0.75 miles west of Highway 49 (Figure 1. *Project Site and Vicinity*). The site corresponds to a portion of Section 29, Township 13 North, Range 8 East of the "Auburn, California" 7.5-minute quadrangle (U.S. Department of the Interior, Geological Survey 1981). The approximate center of the site is located at 38° 56' 45" North and 121° 06' 35" West within the Upper Coon-Upper Auburn Watershed (#18020127, U.S. Department of the Interior, Geological Survey 1978).

This report describes potential waters of the United States, including wetlands, identified within the site that may be regulated by the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act. The information presented in this report provides data required by the USACE Sacramento District's *Minimum Standards for Acceptance of Preliminary Wetland Delineations* (U.S. Army Corps of Engineers 2001). 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.

### **APPLICANT:**

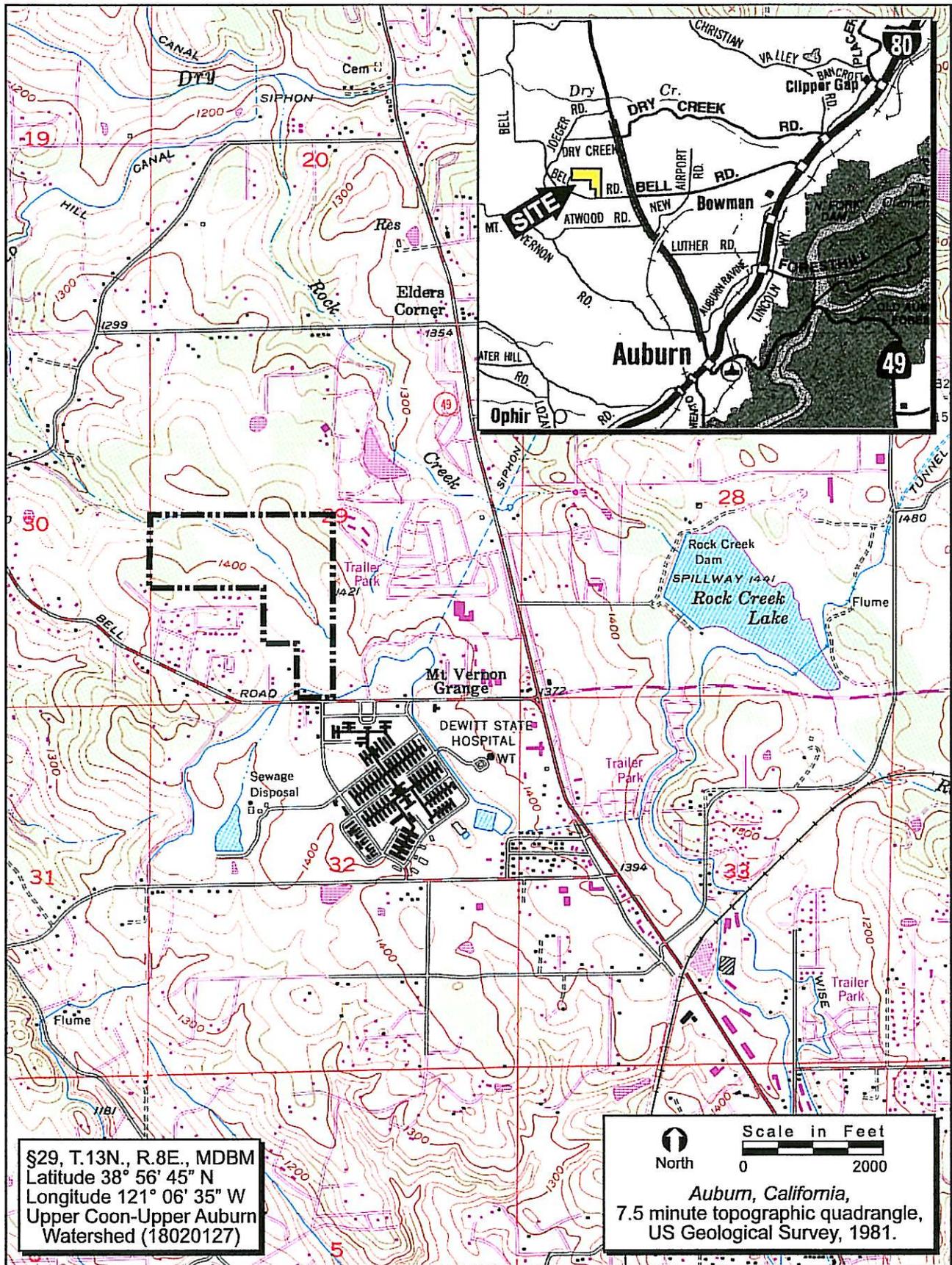
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### **Existing Site Conditions**

The project site is an undeveloped parcel situated in the city of Auburn, and occurs on gently rolling topography at elevations ranging from 1320 to 1400 feet above mean sea level. The project is primarily comprised of oak woodland and non-native annual grassland, but also includes riparian woodland and seasonally wet areas found in ephemeral drainages, wetland



**FIGURE 1. Project Site and Vicinity**

swales, and other low-lying areas. An unlined Nevada Irrigation District (NID) canal splits the subject property into two equal sized portions, and a small unnamed ephemeral "blue line" drainage crosses the central portion of the property. Adjacent land uses include apartment buildings to the east, and residential homes to the north, south, and west of the project area.

Wetland surveys were conducted in late spring/early summer of 2004 and late summer of 2007. Average annual rainfall in the area is approximately 24.5 inches per year (Sacramento Bee 2001-2007). The total rainfall in the 2003-2004 rainy season was 16.65 inches, and the total rainfall in the 2006-2007 rainy season was 24.57. During both survey years, wetland features on-site were dry with the exception of one ephemeral drainage. Vegetation was dry at the time of the survey; however, most vegetation was identifiable to species

The non-native annual grassland community is comprised primarily of non-native, naturalized Mediterranean grasses. These include soft brome (*Bromus hordeaceus*), ryegrass (*Lolium multiflorum*), Mediterranean barley (*Hordeum marinum*), and medusahead grass (*Taeniatherum caput-medusae*). Other herbaceous species in this community include common vetch (*Vicia sativa*), valley tassels (*Castilleja attenuata*), rose clover (*Trifolium hirtum*), and cut-leaved geranium (*Geranium dissectum*).

Blue oak (*Quercus douglasii*) and interior live oak (*Quercus wislizenii*) are the dominant tree species within the oak woodland community, but also include other oak species such as valley oak (*Quercus lobata*). A variety of annual grasses, and forbs occur in the understory. These include slender wild oak (*Avena barbata*), soft brome, ripgut brome (*Bromus diandrus*), and goose grass (*Galium aparine*), and cut leaved geranium.

The riparian scrub vegetation community occurs in association with two ephemeral drainages on-site. The riparian vegetation is comprised primarily of willow species (*Salix* spp.) and Himalaya blackberry (*Rubus armeniacus*). Blue oaks and interior live oaks are also interspersed throughout the community. Himalaya blackberry forms dense thickets along the margins of these two drainages, and is the dominant understory species. Other species observed in the understory include sedge (*Carex* sp.), dock (*Rumex* sp.), creeping spike rush (*Eleocharis macrostachya*), and rush (*Juncus* sp.).

Wetland vegetation within the project area occurs within the bank-to-bank extent of the ephemeral drainage features described, and in several low-lying areas associated with ephemeral wetland swales and other low lying areas.

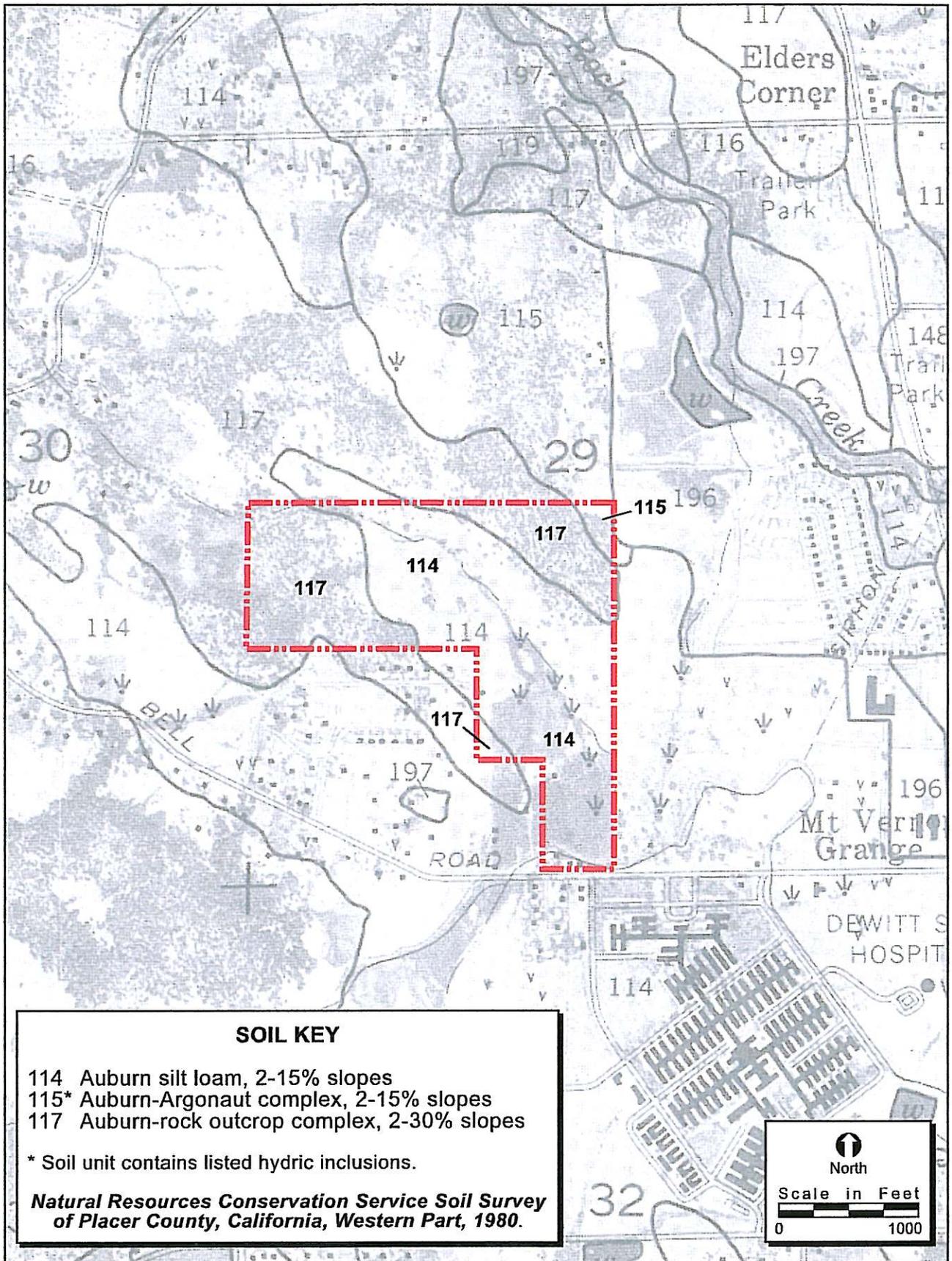
Aquatic features on-site include ephemeral drainages, seasonal wetlands, seasonal wetland swales, and a marsh. These features are further described in the Results section. There are no previously-mapped National Wetlands Inventory (NWI) features for this site.

According to the *Soil Survey of Placer County Western Part, California* (U.S. Department of Agriculture, Soil Conservation Service 1980), three soil units, or types, have been mapped for the site (Figure 2. *Natural Resources Conservation Service Soil Types*). These are: (114) Auburn silt loam, 2 to 15 percent slopes, (115) Auburn-Argonaut complex, 2 to 15 percent slopes, and (117) Auburn-Rock outcrop complex, 2 to 30 percent slopes. The components of these three soil types are not considered to be hydric soils. However, the Auburn-Argonaut complex soil unit contains listed hydric inclusions.

## **METHODS**

This wetland delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Region Supplement) (U.S. Army Corps of Engineers 2006). The boundaries of potential waters of the U.S. were delineated through aerial photograph interpretation and standard field methodologies (i.e., paired data set analyses), and all wetland data were recorded on Arid West Region - Wetland Determination Data Forms (Attachment A). A color aerial photograph (1"=100' scale, Globe Explorer 2006) was used to assist with mapping and ground-truthing (Attachment B). *Munsell Soil Color Charts* (Kollmorgen Instruments Co. 1990) and the *Soil Survey of Placer County,*

*California* (U.S. Department of Agriculture, Soil Conservation Service 1980) were used to aid in identifying hydric soils in the field. *The Jepson Manual* (Hickman, ed. 1993) was used for plant nomenclature and identification.



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

Field surveys were conducted on 205 June 2004; 1, 8 and 16 July 2004; and 31 August 2007 by ECORP biologists Tom Scofield and Debra Sykes. Mr. Scofield and Ms. Sykes walked the entire 93±-acre site to determine the location and extent of potential waters of the U.S. within the property. Eighty paired data point locations and three single point locations were sampled to evaluate whether or not the vegetation, hydrology, and soils data supported a determination of wetland or non-wetland status. At each paired location, 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. The data collected at each single point location was used to support a non-wetland determination. The total area of the wetlands and other waters within the site was recorded in the field using a post-processing capable global positioning system (GPS) unit with sub-meter accuracy (Trimble GeoXT).

### **Waters of the United States**

This report describes potential waters of the U.S., including wetlands, which may be regulated by the USACE under Section 404 of the Clean Water Act. 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.

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”. The ordinary high water mark 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 ordinary high water mark is no longer perceptible.

### **Routine Determinations**

To be determined a wetland; the following three criteria should be met:

- 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; and
- Hydric soils are present.

### *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 data 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, U.S. Army Corps of Engineers 2006).

Dominant plant species observed at each data point were then classified according to their indicator status (probability of occurrence in wetlands) (Table 1), in accordance with the U.S. Fish and Wildlife Service's (USFWS) National List of Vascular Plant Species That Occur in

Wetlands: California (Region 0) (Reed 1988). 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), then the site was considered to be dominated by hydrophytic vegetation. Pursuant to the Arid West Region Supplement, plus (+) and minus (-) modifiers were not used (e.g., FAC-, FAC, and FAC+ plants are all considered to be FAC). Plant species not listed in Reed 1988 were assumed to be upland (UPL) species.

**Table 1 – Classification of Wetland-Associated Plant Species<sup>1</sup>**

<b>Plant Species Classification</b>	<b>Abbreviation</b>	<b>Probability of Occurring in Wetland</b>
Obligate	OBL	>99%
Facultative Wetland	FACW	66-99%
Facultative	FAC	33-66%
Facultative Upland	FACU	1-33%
Upland	UPL	<1%
No indicator status	NI	Insufficient information to determine status
Plants That Are Not Listed (assumed upland species)	NL	Does not occur in wetlands in any region.

<sup>1</sup> Source: Reed 1988

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 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.

### *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 (USDA-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 data 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).

### *Hydrology*

Wetlands, by definition, 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.

## **RESULTS**

A total of 3.230 acres of potential waters of the U.S have been mapped for this site (Table 2). The wetland determination data forms are included in Attachment A, and a list of plant species observed on-site is included in Attachment C. A discussion of the wetlands and other waters is presented below, and wetland delineation maps are presented in Figure 3 and Attachment D.

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**Table 2 – Potential Waters of the U.S.**

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<b>Type</b>	<b>Acreage<sup>1</sup></b>
<i>Wetlands</i>	
Seasonal Wetland	0.048
Seasonal Wetland Swale	2.060
Marsh	0.060
<i>Other Waters</i>	
Ephemeral Drainage	<u>1.062</u>
<b>Total:</b>	<b>3.230</b>

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<sup>1</sup> Acreages represent a calculated estimation and are subject to modification following the Corps' verification process.

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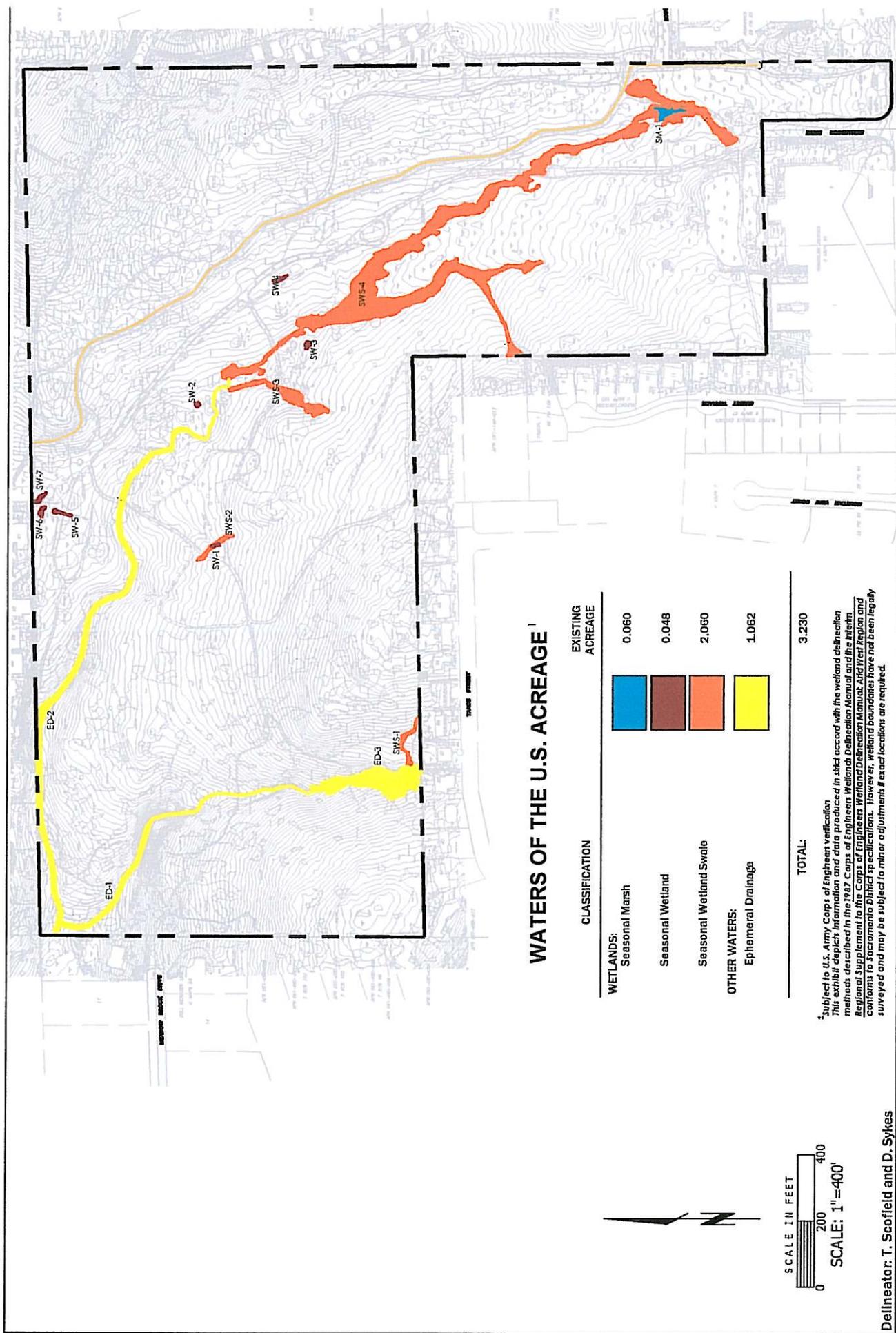
## **Wetlands**

### *Seasonal Wetland*

Seasonal wetlands are ephemerally wet due to accumulation of surface runoff and rainwater within low-lying areas. Inundation periods tend to be relatively short and they are commonly dominated by non-native annual, and sometimes perennial, hydrophytic species. Seven seasonal wetlands were mapped on-site within the north-central portion of the site. Plant species identified within the seasonal wetlands included slender popcorn-flower (*Plagiobothrys stipitatus*), Carter's buttercup (*Ranunculus bonariensis*), ryegrass (*Lolium multiflorum*), Fitch's spikeweed (*Hemizonia fitchii*), dallis grass (*Paspalum dilatatum*), annual rabbit's-foot grass (*Polypogon monspeliensis*), rough cocklebur (*Xanthium strumarium*), panicked willow-herb (*Epilobium brachycarpum*), prickly lettuce (*Lactuca serriola*), and curly dock (*Rumex crispus*). Vegetation within the seasonal wetlands was determined to be hydrophytic due to passage of the dominance text.

Indicators of hydrology within the seasonal wetlands on-site include Surface Soil Cracks, Water Stained Leaves, Biotic Crust, and FAC-Neutral Test.

The soil matrix color in SW-1 was 10YR4/2 with 20% redox concentrations colored 10YR5/8. This soils was determined to be hydric based on the presence of field indicator F3 (Depleted Matrix). Soil matrix color in the upland adjacent to SW-1 was 10YR4/3 without redox features. The soil matrix color in SW-6 was 10YR4/2 with 10% redox concentrations colored 10YR5/6.



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 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual and Wet Region and conforms to Sacramento District regulations. However, wetland boundaries have not been regularly surveyed and may be subject to minor adjustments if exact locations are required.

Delineator: T. Scofield and D. Sykes

**FIGURE 3. Wetland Delineation**



This soil was determined to be hydric based on the presence of field indicator F3 (Depleted Matrix). Soil matrix color in the upland adjacent to SW-6 was 10YR3/4 without redox features.

### *Seasonal Wetland Swale*

Seasonal wetland swales are linear wetland features that do not exhibit an ordinary high water mark. Several seasonal wetland swales are found throughout the property. Vegetation found within the seasonal wetland swales on-site include ryegrass, annual rabbit's-foot grass, panicked willow-herb, curly dock, Mexican rush (*Juncus mexicanus*), common large monkey-flower (*Mimulus guttatus*), tall flatsedge (*Cyperus eragrostis*), velvet grass (*Holcus lanatus*), dallis grass, prickly lettuce, rip-gut brome, and medusahead grass. Vegetation within the seasonal wetland swales was determined to be hydrophytic due to passage of the dominance test.

Indicators of hydrology within the seasonal wetland swales on-site include Water-Stained Leaves, Biotic Crust, and FAC-Neutral Test.

The soil matrix color within SWS-4 was 10YR3/2 with 20% redox concentrations colored 10YR5/8 from the surface to four inches, and 10YR3/2 with 5% redox concentrations colored 10YR5/8 from four inches to eight inches. This soil was determined to be hydric based on the presence of field indicator F6 (Redox Dark Surface). Soil matrix color in the upland adjacent to SWS-4 was 10YR3/3 without redox features. The soil matrix color within another portion of SWS-4 was 2.5YR4/2 with 30% redox concentrations colored 7.5YR7/6. This soil was determined to be hydric based on the presence of field indicator F3 (Depleted Matrix). Soil matrix color in the upland adjacent to SWS-4 was 10YR3/4 without redox features. The soil matrix color within another portion of SWS-4 10YR3/2 with 5% redox concentrations colored 7.5YR5/8. This soil was determined to be hydric based on the presence of field indicator F6 (Redox Dark Surface). Soil matrix color in the upland adjacent to SWS-x9x was 10YR3/3 without redox features.

### *Seasonal Marsh*

One seasonal marsh is found in the southern portion of the property along a dirt road. Vegetation found within the marsh includes broad-leaf cattail (*Typha latifolia*), dallis grass, panicked willow-herb, smartweed (*Polygonum hydropiperoides*), barnyard grass (*Echinochloa crus-gali*), Baltic rush (*Juncus balticus*), common large monkey-flower, and soft rush (*Juncus effusus*). Vegetation within the marsh was determined to be hydrophytic due to passage of the dominance test

Indicators of hydrology within the marsh include Surface Soil Cracks, Water-Stained Leaves, Biotic Crust, and FAC-Neutral Test.

The soil matrix color within Marsh-XX was 10YR4/2 with 10% redox concentrations colored 10YR4/6. This soil was determined to be hydric based on the presence of field indicator F3 (Depleted Matrix). Soil matrix color in the upland adjacent to Marsh-xx was 10YR3/4 without redox features.

### **Other Waters**

#### *Ephemeral Drainage*

Ephemeral drainages are linear features that exhibit an ordinary high water mark. These are seasonal features that typically convey runoff for short periods of time, immediately following rain events and are not influenced by groundwater. The channel tends to be unvegetated due to the scouring effects of flowing water. Plants observed in the ephemeral drainages include iris-leaved rush (*Juncus xiphioides*), creeping spikerush, velvet grass, curly dock, Mexican rush, panicked willow-herb, ryegrass, hairy willow-herb (*Epilobium ciliatum*), and swamp smartweed. Overstory trees and shrubs include Himalayan blackberry and blue oak.

The limits of the ephemeral drainage(s) was/were delineated at the ordinary high water mark, which was identified based on water marks, scour, and shifts in vegetation.

The soil matrix color within ED-xx was 10YR4/2 with redox concentrations colored 7.5YR5/8. Soil in ED-xx was determined to be hydric based on the presence of field indicator F3 (Depleted Matrix). Soil matrix colors in upland areas adjacent to ED-xx were of higher chroma including 10YR3/4 without redox features. Soil matrix color within ED-XX was 10YR2/2 without redox features. Soil in ED-xx did not meet the criteria for hydric soils.

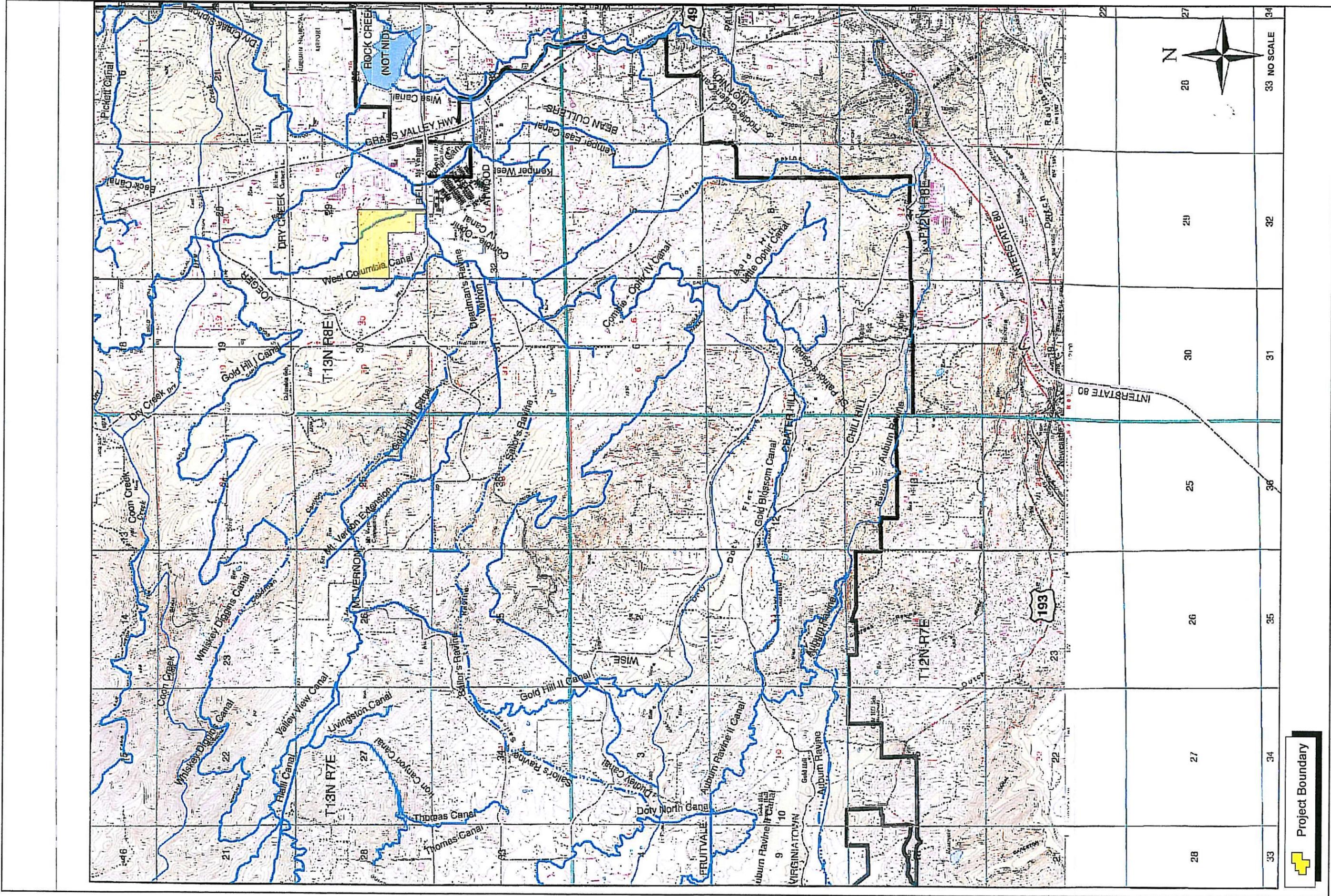
## **INTERSTATE COMMERCE**

The seasonal wetlands and marsh are tributary to the seasonal wetland swales on-site, and the seasonal wetland swales are tributary to the ephemeral drainages on-site. The ephemeral drainages exit the site in the northwestern corner, and are tributary to Dry Creek. Dry Creek is tributary to the Sacramento River via Coon Creek and the Main Drainage canal. The Sacramento River is considered navigable water. Thus, the wetlands and other waters may be considered connected with and/or adjacent to a waters of the U.S., and would therefore be subject to interstate and/or foreign commerce.

## **CONCLUSION**

A total of 3.230 acres of potential waters of the U.S. have been mapped on-site. These acreages represent a calculated estimation of the jurisdictional area within the site, and are subject to modification following the USACE verification process. The NID canal is a constructed canal built in uplands, that is regularly maintained and terminates 100 yards before reaching Dry Creek (Figure 4. NID Canal Location). Previous correspondence with the Corps for other properties in the vicinity of the Timberline Property determined that this feature is not regulated water (North Fork Associates 2007, Corps# 200600848). As such, the NID canal is also treated as a non-jurisdictional feature for this property.

Fill within jurisdictional features would require permitting pursuant to Section 404 and 401 of the federal Clean Water Act. Previous correspondence with the Corps regarding this ditch (Little, 1992), determined that this feature is not a regulated wetland.



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**Figure 4. NID Canal Locations**  
 2007-158 Timberline Project

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