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November 22, 2019 11244-06

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Subject: Jurisdictional Delineation Report for the Proposed Rodeo Creek Gulch Storm Drain Project, Santa Cruz County, California

Dear Ms. Bigley:

This report presents the findings of a jurisdictional delineation of aquatic resources conducted by Dudek along three alternative alignments of a new storm water pipeline between Chanticleer Avenue and Mattison Lane and terminate at outfalls just west of Rode Creek Gulch within the City of Santa Cruz (the project site). The purpose of this investigation was to evaluate the presence and extent of aquatic resources that may be subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and/or the California Department of Fish and Wildlife (CDFW). The investigation included an analysis of Rodeo Creek Gulch, into which the proposed storm water drainage outlet would flow.

This report is intended to satisfy formal documentation according to the delineation guidelines and protocols stipulated by the USACE under Section 404 of the federal Clean Water Act (CWA), and the CDFW under Section 1600-1607 of the California Fish and Game Code.

1 Study Area Location and Description

The proposed storm drain would be installed along the westbound lane of Soquel Avenue and would terminate at an outlet along the west bank of Rodeo Gulch. Dudek evaluated the anticipated impact area, plus a 300-foot buffer totaling approximately 32.69 acres (“the study area”) (Figure 1). The study area is approximately 1.25 miles from the Pacific Ocean and is not within the California coastal zone.

The study area consists of a highly disturbed and previously developed parcel in an urbanized setting. The surrounding area is substantially developed and is dominated by commercial land uses, streets, and parking lots. The study area primarily supports ruderal and ornamental plant species bordering riparian oak woodland. Elevations range from approximately 50 to 100 feet above mean sea level (AMSL).

The study area is located in Section 9 of Township 11 South, Range 1 West, of the Soquel, California 7.5-minute U.S. Geological Survey quadrangle (Figure 1). The project site includes the construction footprint associated with the installation of a new storm drain extending from Assessor’s Parcel Number 029-021-47 (between Chanticleer Avenue and Mattison Lane; Soquel Property), along Soquel Avenue, and terminating within the west bank of Rodeo Creek Gulch.

2 Summary of Regulations

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The USACE Regulatory Program regulates activities pursuant to Section 404 of the CWA; the CDFW regulates activities under the Fish and Game Code Sections 1600–1616; and the RWQCB regulates activities under Section 401 of the CWA and the Porter–Cologne Water Quality Control Act (Porter–Cologne Act).

The USACE regulates "discharge of dredged or fill material" into "waters of the United States," which includes tidal waters, interstate waters, and all other waters that are part of a tributary system to interstate waters or to navigable "waters of the United States," the use, degradation, or destruction of which could affect interstate or foreign commerce or which are tributaries to waters subject to the ebb and flow of the tide (33 CFR, Part 328.3(a)), pursuant to provisions of Section 404 of the CWA. The USACE generally takes jurisdiction within rivers and streams to the "ordinary high water mark" (OHWM) determined by erosion, the deposition of vegetation or debris, and changes in vegetation. The USACE defines jurisdictional wetlands as areas that contain hydrophytic vegetation, hydric soils, and wetland hydrology, in accordance with the procedures established in the Corps Wetland Delineation Manual (USACE 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). The EPA and USACE published a final rule (33 CFR, Part 328) defining the scope of waters protected under the CWA in response to several U.S. Supreme Court rulings including the U.S. v. Riverside Bayview Homes, 474 U.S. 121 (1985; Riverside); Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, 531 U.S. 159 (2001; SWANCC); and Rapanos v. United States, 547 U.S. 715 (2006; Rapanos). As a result of the final rule, EPA and USACE agencies define "waters of the United States" to include eight categories of jurisdictional waters: traditional navigable waters (TNW), interstate waters, territorial seas, impoundments of jurisdictional waters, tributary waters, adjacent waters, case-by-case determination that require a significant nexus (combined), and case-by-case determination that requires a significant nexus (individually).

In accordance with Section 1600 et seq. of the California Fish and Game Code (Streambed Alteration), the CDFW regulates activities which "will substantially divert, obstruct, or substantially change the natural flow or bed, channel or bank, of any river, stream, or lake designated by the Department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit." The CDFW takes jurisdiction to the top of bank of the stream, or the limit of the adjacent riparian vegetation, referred to in this report as "streambed and associated riparian habitats." Applications to the CDFW must include a complete certified California Environmental Quality Act (CEQA) document.

The RWQCB regulates "discharging waste, or proposing to discharge waste, within any region that could affect the water of the state" (Water Code Section 13260 (a)), pursuant to provisions of the Porter–Cologne Act. "Waters of the State" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code Section 13050 (e)). Before the USACE will issue a CWA Section 404 permit, applicants must receive a CWA Section 401 Water Quality Certification from the RWQCB. If a CWA Section 404 permit is not required for the project, the RWQCB may still require a permit (i.e., Waste Discharge Requirement) under the Porter–Cologne Act. Applications to the RWQCB must include a complete certified CEQA document.

3 Methods

Data regarding aquatic resources present within the study area were obtained through a review of pertinent literature and field assessment; both are described in detail below.

3.1 Literature Review

Prior to visiting the study area, potential and/or historic drainages and aquatic features were investigated based on a review of the following: USGS topographic maps (1:24,000 scale), aerial photographs, the National Wetland Inventory (NWI) database (USFWS 2016), and the Natural Resource Conservation Service (NRCS) Web Soil Survey (2015). In addition, hydrologic information from gauge stations within the vicinity of the study area was obtained.

3.2 Jurisdictional Delineation – Field Assessment

Following the initial data collection, Dudek biologists Sheldon Leiker and Lasthenia Michele Lee performed a formal (routine) wetlands delineation within the study area on May 22, 2019. All areas that were identified as being potentially subject to the jurisdiction of the USACE, RWQCB, and CDFW were field verified and mapped.

The USACE wetlands delineation was performed in accordance with the Corps Wetlands Delineation Manual (USACE 1987), Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008), A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Lichvar and McColley 2008), and recent changes to 33 CFR, Part 328 provided by the USACE and EPA on the geographic extent of jurisdiction based on the U.S. Supreme Court's interpretation of the CWA. Non-wetland waters of the United States were delineated based on the limits of an OHWM. During the jurisdictional delineation, drainage features were examined for evidence of an OHWM, saturation, permanence of surface water, wetland vegetation, and nexus to a traditional navigable water of the United States. If any of these criteria were met, transects were run to determine the extent of each regulatory agency's jurisdiction.

Transects were taken approximately every 300 feet or greater if streambed conditions were unchanged. Data on transect widths, dominant vegetation present within the drainage and in the adjacent uplands, and channel morphology were recorded on field forms. In areas where USACE jurisdictional wetlands were suspected, data on vegetation, hydrology, and soils were collected along transects.

Areas regulated by the RWQCB are generally coincident with the USACE, but include features isolated from navigable waters of the United States that have evidence of surface water inundation. The CDFW jurisdiction was defined to the bank of the stream/channels or to the limit of the adjacent riparian vegetation.

Drainage features were mapped during the field observation to obtain characteristic parameters and detailed descriptions using standard measurement tools. The location of transects, upstream and downstream extents of each feature, and sample points were collected in the field using a 1:2,400 scale (1 inch = 200 feet) aerial photograph, topographic base, and Global Positioning System (GPS) equipment with sub-meter accuracy. Dudek geographic information system (GIS) technician Curtis Battle digitized the jurisdictional extents based on the GPS data and transect width measurements into a project-specific GIS using ArcGIS software.

4 Results

Dudek used the methods described above to determine the presence or absence of USACE, RWQCB, and CDFW jurisdiction within the study area. One main drainage, Rodeo Creek Gulch, was investigated within the study area as a potential jurisdictional resource. The determination of aquatic resource jurisdiction within the study area was supported by information obtained from the USGS topographic map, Web Soil Survey, USFWS NWI map, and field assessment. Information obtained from each source is described below.

4.1 USGS Topographic and Watershed Map Review

The USGS 7.5-minute Soquel, California topographic map (1994) was utilized to identify natural and man-made features occurring within the vicinity of the study area. Information obtained from the map included contour lines, streets, streams, railroad lines, and vegetation. The Soquel map was based on 1954 aerial photography that was photorevised in 1994. The study area was generally mapped as undeveloped land with a few buildings in the northwestern portion of the study area. Soquel Avenue and California State Route 1 are directly to the north of the study area crossing Rodeo Creek Gulch. The main stem of Rodeo Creek runs along the eastern edge of the study area. No other aquatic features or significant structural features are identified on the map within the study area's boundaries.

The study area occurs within the Aptos-Soquel Subarea (403.13) of the Santa Cruz Hydrologic Area (403.10), which occurs within the larger Big Basin Hydrologic Unit (CCRWQCB 2019; Figure 2). According to the USGS, the project site occurs within the Arana Gulch-Rodeo sub-watershed of the Soquel Creek – Frontal Monterey Bay (HUC10-1806000103) watershed and larger San Lorenzo – Soquel watershed (USGS HUC8: 18060001).

The study area is part of the (San Lorenzo - Soquel) Hydrologic Unit Code 18060001. The hydrology of the site has been influenced by anthropogenic sources including the Hwy 1 and Soquel Ave and adjacent residential and commercial developments. Sources of hydrology in the study area include precipitation and runoff from the adjacent mountain slopes and impervious surfaces such as roadways and parking lots. Rodeo Creek is approximately 4 miles long. It begins near 1750 North Rodeo Gulch Road and flows through Rodeo Creek Gulch southward into Corcoran Lagoon.

4.2 Soil Survey Review

The U.S. Department of Agriculture, NRCS's Web Soil Survey for Santa Cruz County, California (2019) was consulted and identified three soil associations as occurring throughout the study area: the Lompico-Felton complex, 30 to 50 percent slopes, MLRA 4B; Watsonville loam, 2 to 15 percent slopes; Aquents, flooded. Each of these soil types is described in further detail, below. A map of the soils within the study area can be found in Figure 3 of this report.

Lompico-Felton complex, 30 to 50 percent slopes: The soils of the Lompico-Felton complex occur on mountain slopes and ridges. This soil is not very deep with a restrictive bedrock layer between 20 to 40 inches and is very well drained. Lompico-Felton complex soils are well drained and have moderately slow subsoil permeability. Lompico-Felton complex soil is not listed as hydric (USDA 2019).

Watsonville loam, 2 to 15 percent slopes: Watsonville loam soils occur primarily on marine terraces. The soil is relatively shallow and reaches a restrictive layer of an abrupt textural change about 18 inches below ground surface.

Watsonville loam soils are somewhat poorly drained with an alluvium parent material. Watsonville loam soils are listed as hydric (USDA 2019).

Aquents, flooded: Aquents are wet entisols which typically occur on recent alluvial plains, beaches, and valleys or on steep slopes where erosion is rapid. The depth to the water table is typically between 10 to 39 inches and the soils are poorly drained. Aquents are listed as hydric (USDA 2019).

4.3 National Wetlands Inventory Review

The National Wetlands Inventory identifies much of the site as Palustrine Forested wetland that is temporarily flooded (PFOA) which is comprised of Freshwater Forested/Shrub Wetland (Figure 3). This system encompasses all nontidal wetlands dominated by woody vegetation that is 20 feet or taller including woody wetlands, forested swamp, and shrub bogs.

4.4 Field Assessment

A portion of the Rodeo Creek Gulch and its adjacent wetland were investigated within the eastern portion of the study area during this assessment. Rodeo Creek Gulch is a natural drainage that supports perennial flows and originates near Rodeo Creek Gulch Road in the Santa Cruz Mountains. From its headwaters, the drainage continues for approximately 4 miles in a southerly direction before it empties into the Corcoran Lagoon. The mainstem and active channel of the drainage (including the OHWM) occurs just to the east of the study area. However, the western portion of the riparian canopy and an adjacent wetland occur within the study area and were the focus of this jurisdictional delineation. Figure 4 illustrates the location and extent of jurisdiction within the study area, and Table 1 summarizes the amount of jurisdiction calculated within the study area.

Table 1 – Summary of Jurisdictional Features

Feature	Width (feet)		Area (acres)		Nature
	USACE	RWQCB/CDFW	USACE	RWQCB/CDFW	
Rodeo Gulch Creek	26-130	10-385	2.82	7.61	Perennial
Total			**2.82**	**7.61**	

* Adjacent wetland is located within the Rodeo Creek Gulch system

The following descriptions are detailed accounts of the potentially jurisdictional features investigated within the study area. The wetland indicator status was assigned to each species using the National Wetland Plant List (California) (Lichvar et al. 2016), as shown in Table 1. The wetland indicator status of each plant species observed within the OHWM is provided for easy reference (Table 2).

Table 2 – Summary of Wetland Indicator Status

Category	Probability
Obligate Wetland (OBL)	Almost always occur in wetlands (estimated probability of >99%)
Facultative Wetland (FACW)	Usually occur in wetlands (estimated probability of 67% to 99%)
Facultative (FAC)	Equally likely to occur in wetlands/non-wetlands (estimated probability of 34% to 66%)
Facultative Upland (FACU)	Usually occur in non-wetlands (estimated probability 67% to 99%)
Obligate Upland (UPL)	Almost always occur in non-wetlands (estimated probability >99%)
No Indicator (NI)	—

Rodeo Creek Gulch

The riparian canopy of Rodeo Creek Gulch within the study area is characterized by a dense oak woodland vegetation community that transitions from an active streambed terrace to a gently sloping bank. Dominant species that characterized the overstory included coast live oak (*Quercus agrifolia*), California bay (*Umbellularia californica*), red willow (*Salix laevigata*), and arroyo willow (*Salix lasiolepis*). The shrub layer was dominated by willows, poison oak (*Toxicodendron diversilobum*), Himalayan blackberry (*Rubus armeniacus*), California blackberry (*Rubus ursinus*), and snowberry (*Symphoricarpos* spp); and the herbaceous layer included water-parsley (*Oenanthe sarmentosa*), curly dock (*Rumex crispus*), smartweed (*Polygonum* spp), Mexican rush (*Juncus mexicanus*), and stinging nettle (*Urtica dioica*). Species within the adjacent uplands included giant wild rye (*Elymus condensatus*), perennial rye grass (*Festuca perennis*), soft brome (*Bromus hordeaceus*), wild oat (*Avena fatua*), Harding grass (*Phalaris aquatic*), Maltese star-thistle (*Centaurea melitensis*), smooth cat's ear (*Hypochaeris glabra*), wild radish (*Raphanus raphanistrum*), coast live oak, Tasmanian bluegum (*Eucalyptus globulus*), and English ivy (*Hedera helix*). Representative photographs of the drainage are provided in Attachment B.

The CDFW and RWQCB jurisdictional width encompassed the lateral extent of the oak woodland canopy within the study area and ranged from 10 to 385 feet. A total of 7.61 acres of CDFW and RWQCB jurisdiction, all of which would be considered state wetlands, occur within the study area.

Adjacent Wetland

The western bank of Rodeo Creek Gulch within the study area supported an active streambed terrace that contained a seasonally ponded, adjacent wetland. Approximately 4 to 6 inches of surface water were observed within this local depressional area. Plant species that dominated the perimeter of the ponded area included water-parsley (OBL), curly dock (FAC), smartweed (OBL/FACW), Mexican rush (FACW), stinging nettle (FAC) red and arroyo willow saplings (FACW), poison oak (FACU), Himalayan blackberry (FAC), California blackberry (FAC), and snowberry (FAC).

Due to the dominance of hydrophytic vegetation and surface water hydrology along the western stream terrace of Rodeo Creek Gulch, two data stations were established to determine the extent of federal jurisdictional wetlands (Attachment A; Data Sheets #1-2). Two soil pits were excavated onsite. The first soil pit (1a) was located near the edge of hydrophytic vegetation where the soil was somewhat saturated, and the second soil pit (1b) was located upslope of the first in an area with dry soil and upland vegetation. Soil within test pit 1a consisted of a muck layer on the surface with loam from 1-17 inches below ground surface (refusal at water table) with a color od 10YR 4/1

in the Munsell (2009) Soil Charts (Data Sheet 1a). This soil meets the definition of hydric soils and therefore met the USACE definition of a jurisdictional wetland. Soil within test pit 1b consisted of silt loam from 0-20 inches below ground surface with a color 10YR 3/1 on the Munsell (2009) Soil Charts (Data Sheet 1b). This soil does not meet the definition of hydric soils signifying the end of the wetland at the edge of the hydropytic vegetation. Federal jurisdictional wetlands were determined present whenever there was a dominance of hydrophytic vegetation within the study area. Areas along Rodeo Creek Gulch that were determined to meet the USACE three-parameter test for classification as a wetland total approximately 2.82 acres of wetland.

5 Conclusion

The purpose of this report is to identify and delineate all jurisdictional wetland and non-wetland waters of the United States, and jurisdictional streambeds as regulated by the USACE, RWQCB, and CDFW within the study area. This report represents existing conditions only, and does not address any activities proposed within the study area. Information contained within this report will be utilized to determine the location and extent of possible jurisdictional impacts associated with any future maintenance or development proposed within the study area.

The study area supports the riparian canopy of one perennial drainage (Rodeo Creek Gulch) and one adjacent federal wetland. In total, the study area contains 2.82 acres of USACE jurisdictional wetlands and 7.61 acres of CDFW and RWQCB jurisdictional streambed and associated riparian habitat, all of which would be considered state wetlands. The USACE jurisdiction overlaps and is a subset of the CDFW acreage. However, final determinations of jurisdictional extents cannot be made until the resource agencies have verified the findings of this investigation.

Any proposal that involves impacting jurisdictional drainages within the study area through filling, stockpiling, conversion to a storm drain, channelization, bank stabilization, road or utility line crossings, maintenance, or any other modification would require permits from the USACE, the RWQCB, and the CDFW before any earth-moving activities could commence. Both permanent and temporary impacts are regulated and would trigger the need for these permits. Processing of the RWQCB's CWA Section 401 and CDFW's Fish and Game Code Section 1600 permits can occur concurrently with the USACE's CWA Section 404 permit process and can utilize the same information and analysis. The USACE will not issue its authorization until the RWQCB completes the CWA Section 401 permit.

If you have any questions regarding the contents of this report, please call me at 831.291.7448.

Sincerely,

Ryan Henry
Project Manager/Biologist

Sheldon Leiker
Project Scientist

Att.: *Figures 1 – 4*
A – Wetland Determination Data Forms
B – Site Photographs

cc: *Stephanie Strelow, Dudek*

6 References Cited

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

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X. http://wetland-plants.usace.army.mil/

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USDA (U.S. Department of Agriculture). 1995. Hydric Soils of California. USDA, Natural Resources Conservation Service. December 1995.

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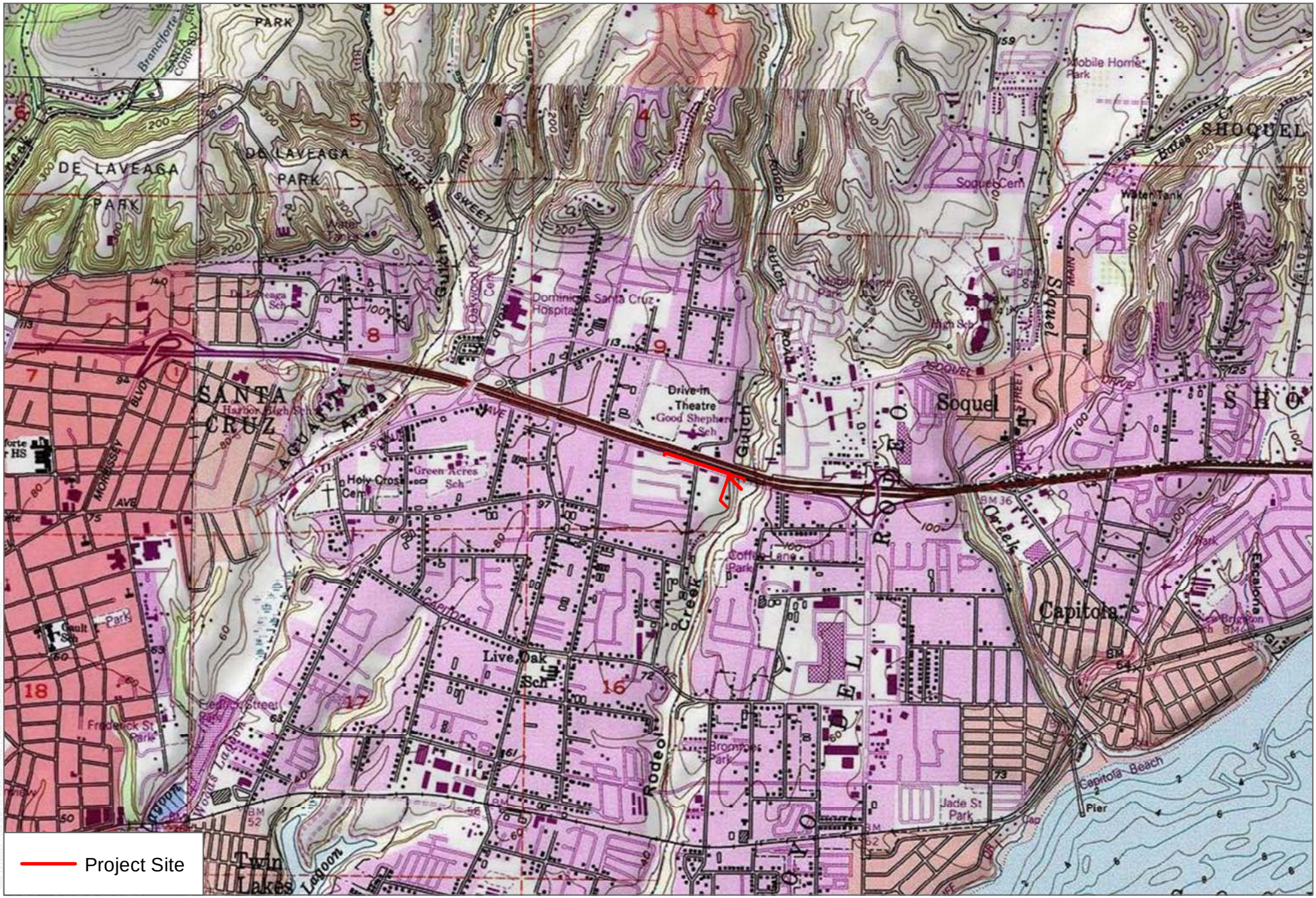


SOURCE: USGS, 2018

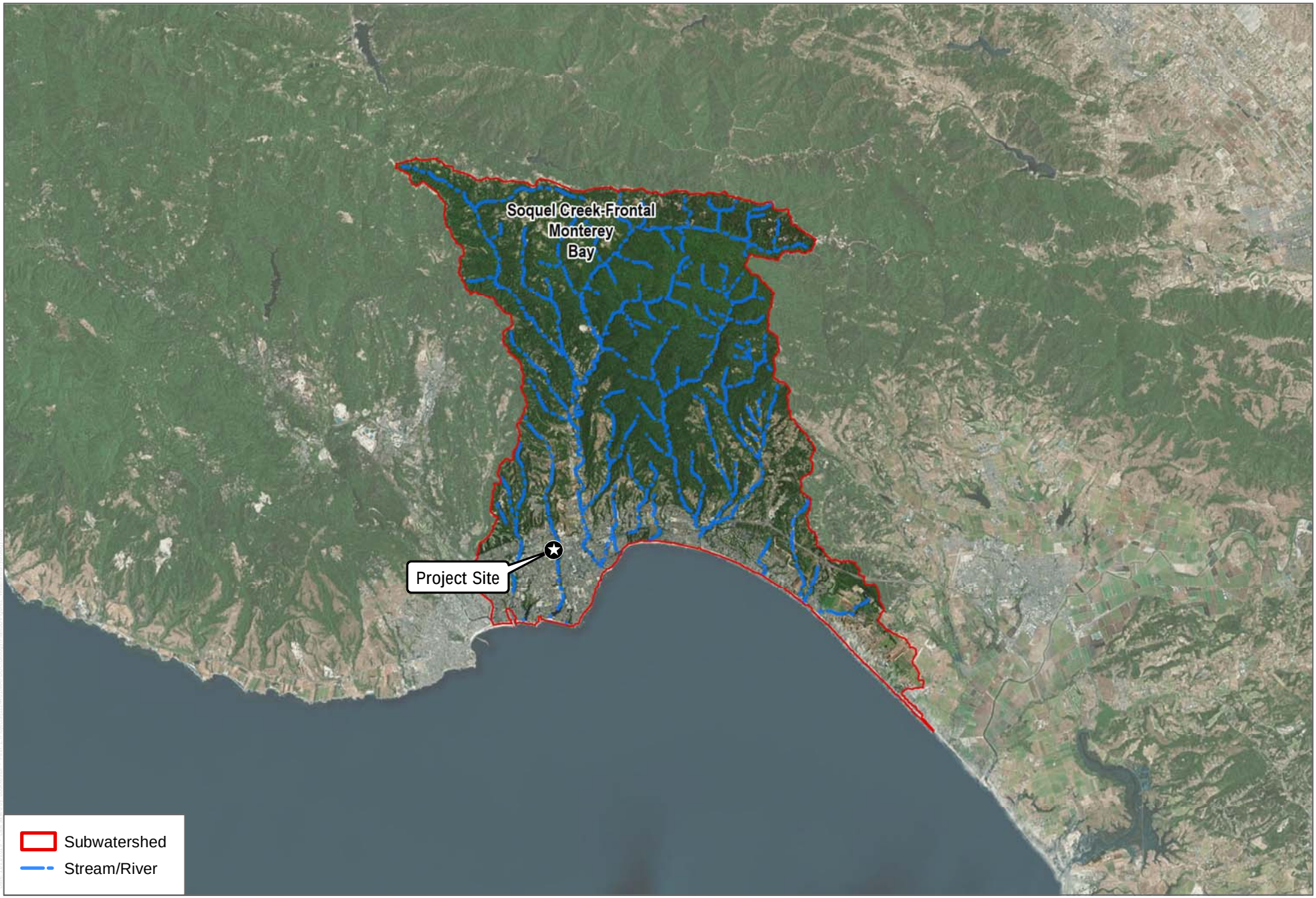
DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

Rodeo Gulch Storm Drain Project



SOURCE: ESRI, 2018
NHD, 2018
USGS, 2018

DUDEK

0 9,000 18,000 Feet

FIGURE 2

Watershed & Hydrology

Rodeo Gulch Storm Drain Project

SOURCE: ESRI 2018
USDA 2018
USFW 2018

DUDEK

0 100 200 Feet

FIGURE 3

USDA Soils and NWI

Rodeo Gulch Storm Drain Project

SOURCE: ESRI, 2018

DUDEK

0 100 200 Feet

FIGURE 4

Jurisdictional Resources

Rodeo Gulch Storm Drain Project

Attachment A

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Rodeo Gulch/ Kaiser City/County: Santa Cruz, Ca Sampling Date: 5/22/19

Applicant/Owner: State: CA Sampling Point: 1a

Investigator(s): Sheldon Leiker Section, Township, Range:

Landform (hillslope, terrace, etc.): floodplain, terrene Local relief (concave, convex, none): concave Slope (%): 1-3

Subregion (LRR): C - Mediterranean California Lat: 36.98288 Long: -121.97172 Datum:

Soil Map Unit Name: 143—Lompico-Felton complex, 30 to 50 percent slopes, MLRA 4B NWI classification: PFOA

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 ○	
Hydric Soil Present?	Yes ○	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks: Area is located adjacent to two major roadways (hwy 1/ Soquel Ave) and receives flow from the drainage outfall the runs beneath the roadway

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	10	Yes	FACW
2.			
3.			
4.			
Total Cover:	10 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Oenanthe sarmentosa*	60	Yes	OBL
2. *Polygonum spp*	2	No	FACW
3. *Cyperus eragrostis*	1	No	FACW
4. *Rumex crispus*	1	No	FAC
5. *grass spp*	1	No	
6.			
7.			
8.			
Total Cover:	65 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 35 % % 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: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	13	x 2 =	26
FAC species	1	x 3 =	3
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	74 (A)		89 (B)

Prevalence Index = B/A = 1.20

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.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: wetland follows the oenanthe vegetation line

SOIL

Sampling Point: 1a

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[3]	Remarks
1-17	10YR 4/1	100			C	M	loam	muck layer at surface

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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[4]:

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◯ No ◯

Remarks: hit water table

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☒ Thin Muck Surface (C7)
- ☐ 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): 10.5

Saturation Present? (includes capillary fringe) Yes ◉ No ◯ Depth (inches): 6

Wetland Hydrology Present? Yes ◉ No ◯

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Rodeo Gulch/ Kaiser | City/County: Santa Cruz, Ca | Sampling Date: 5/22/19

Applicant/Owner: | State: CA | Sampling Point: 1b

Investigator(s): Sheldon Leiker | Section, Township, Range:

Landform (hillslope, terrace, etc.): hillslope | Local relief (concave, convex, none): convex | Slope (%): 10

Subregion (LRR): C - Mediterranean California | Lat: 36.98293 | Long: -121.97173 | Datum: WGS84

Soil Map Unit Name: 143—Lompico-Felton complex, 30 to 50 percent slopes, MLRA 4B | NWI classification:

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 ◉	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks: Area is located adjacent to two major roadways (hwy 1/ Soquel Ave) and receives flow from the drainage outfall the runs beneath the roadway

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus agrifolia*	25	Yes	Not Listed
2.			
3.			
4.			
Total Cover:	25 %		
Sapling/Shrub Stratum			
1. *Toxicodendron diversilobum*	10		Not Listed
2. *Rubus ursinus*	40	Yes	FACU
3. *Rubus armeniacus*	30	Yes	FACU
4.			
5.			
Total Cover:	80 %		
Herb Stratum			
1. *Symphoricarpos albus*	3	No	FACU
2. *Hedera helix*	1	No	Not Listed
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	4 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % | % 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	73	x 4 =	292
UPL species	36	x 5 =	180
Column Totals:	109 (A)		472 (B)

Prevalence Index = B/A = 4.33

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.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

SOIL

Sampling Point: 1b

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[3]	Remarks
1-20	10YR 3/1	100			C	M	silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: roots

Depth (inches): 20

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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:

Attachment B

Rodeo Creek Gulch Site Photographs

	
Photo 1. CDFW jurisdictional boundary within the study area.	Photo 2. CDFW jurisdictional boundary within the study area.
	
Photo 3. CDFW jurisdictional boundary within the study area.	Photo 4. CDFW jurisdictional boundary within the study area.

Photo 5. Wetland within the study area.

Photo 6. Wetland within the study area.

Photo 7. Wetland within the study area.

Photo 8. Wetland within the study area.

Photo 9. Wetland within the study area.

Photo 10. Wetland within the study area.

Photo 11. Soil test pit one excavated as part of the jurisdictional delineation.

Photo 12. Soil test pit two as part of the jurisdictional delineation.

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