

Wetland and Other Waters Delineation Report

Assessor's Parcel Numbers
015-111-006, 008, 012, and 013
Eureka, California

Prepared for:
Jim Paye

December 2021
021184



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QA/QC: JLS__

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Table of Contents

	Page
List of Illustrations	ii
Abbreviations and Acronyms	iii
1.0 Introduction	1
1.1 Purpose	1
1.2 Study Area	1
2.0 Project Description	1
3.0 Environmental Setting	2
3.1 Site Uses	2
3.2 Site Hydrology	2
3.3 National Wetlands Inventory	3
4.0 Vegetation	3
5.0 Geologic and Soil Composition	4
6.0 Regulatory Setting	7
6.1 Federal Laws	7
6.1.1 Section 401 and 404 of the Clean Water Act	7
6.1.2 Rivers and Harbors Appropriation Act of 1899	8
6.2 State Laws	8
6.2.1 Porter-Cologne Water Quality Control Act	8
7.0 Methods	9
7.1 Vegetation Methods	10
7.2 Soils Methods	10
7.3 Hydrology Methods	10
7.4 Ordinary High Water Mark Methods	11
8.0 Discussion and Results	11
8.1 TP1	12
8.2 TP2	12
8.3 TP3	13
8.4 TP4	13
8.5 TP5	13
8.6 TP6	14
8.7 TP7	14
8.8 TP8	15
8.9 TP9	15
8.10 TP10	16
8.11 TP11	16
9.0 Conclusions	17
10.0 Limitations	18
11.0 References Cited	18

Appendices

1. Site Photographs
2. National Wetlands Inventory and Soil Map
3. Wetland Determination Data Forms



List of Illustrations

Figures	Follows Page
1. Project Location Map	1
2. Wetland Delineation Map	1
Tables	On Page
1. WETS Rainfall Data, November 2021, Hydrological Analysis.....	2
2. Parameters Met at Each Test Pit, November 2021	17



Abbreviations and Acronyms

Terms of Measurement

in/hr	inches per hour
mmhos/cm	millimhos per centimeter

Additional Terms

APN	Assessor's Parcel Number
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	United States Environmental Protection Agency
FAC	facultative wetland plant species
FACU	facultative-upland plant species
FACW	facultative-wetland plant species
GPS	Global Positioning System
Ksat	most limiting layer to transmit water
MS	Master of Science
NOAA	National Oceanic and Atmospheric Administration
NGTOC	National Geospatial Technical Operations Center
NL	not listed wetland plant status
NR	no reference
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	obligate wetland plant species
OHWM	ordinary high water mark
redox	redoximorphic
RWQCB	Regional Water Quality Control Board
SWRCB	State Water Resources Control Board
TP	test pit
UPL	upland plant species
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey
WDRs	Waste Discharge Requirements
WETS	Climate Analysis for Wetlands Tables
WoS	Waters of the State
WoUS	Waters of the United States



1.0 Introduction

SHN has prepared this Wetland and Other Waters Delineation Report on Assessor's Parcel Numbers (APNs) 015-111-006, 008, 012, and 013 in Eureka, California (Figure 1). Fieldwork was performed by an SHN soil scientist, with a Master of Science (MS) degree in Soil Science, and an SHN wetland ecologist, with an MS degree in Biology, with 18 years of combined wetland and other waters delineation experience.

1.1 Purpose

The purpose of this report is to identify the presence or absence of potential wetlands and other waters of the State (WoS) or United States (WoUS) within the study area (Figure 2), as defined by the United States Army Corps of Engineers (USACE) three-parameter and Ordinary High Water Mark (OHWM) methodologies. The delineation of these features will help determine setbacks and will aid in the design, planning, and permitting for any project that may occur within the study area. The delineation will also help minimize impacts to potential wetland resources.

1.2 Study Area

The proposed project is situated approximately 1.5 miles southeast from downtown Eureka in Humboldt County, California (Figure 1). The site is within the U.S. Geological Survey (USGS) Eureka 7.5-minute quadrangle, N.E. ¼ of the N.W. ¼, Section 25, Township 5 North, Range 1 West, Humboldt Baseline and Meridian at latitude 40.791799° and longitude -124.134966° (Google Earth, 2021).

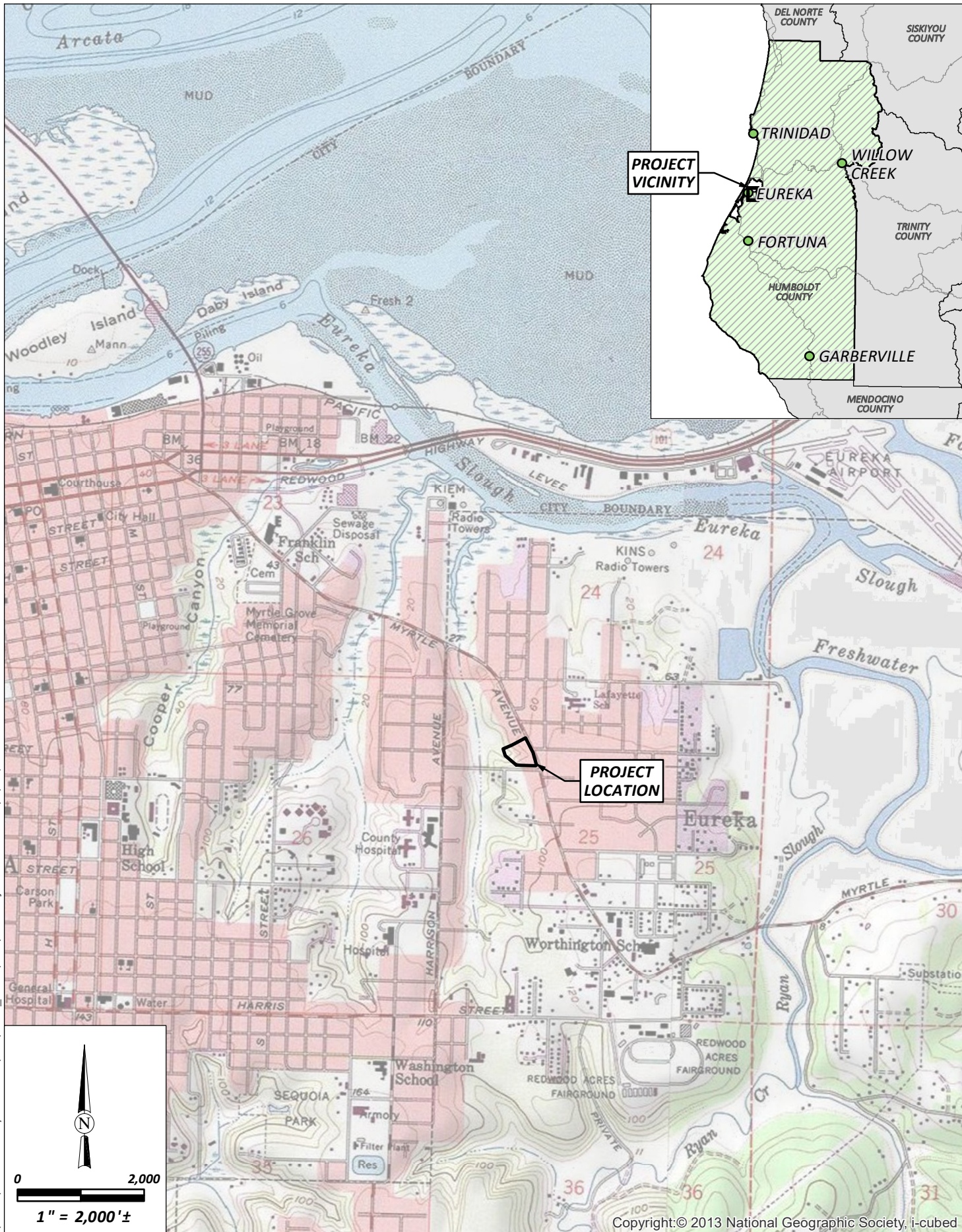
The study area exists within three parcels owned by Jim and Judy Paye (Assessor's Parcel Numbers [APN] 015-111-006, 012, and 013) as well as a portion of a county-owned parcel (APN 015-111-008) for a total study area of approximately 3.3 acres (Figure 2). The study area focuses on the eastern wetland boundary within the county-owned parcel (APN 015-111-008) as well as the entire area of the three parcels owned by Jim and Judy Paye, which would be the location of any proposed project hereon referred to as "proposed project area". All three parcels have existing single-family units and outbuildings (Figure 2; Appendix 1, Photos 1 and 2), while the county-owned parcel is vacant and dominated by primarily native vegetation. Currently, the proposed project area is dominated by non-native lawns and compacted driveways surrounding the single-family units and outbuildings, with woodland to the west. Dominant species within the woodland consist of coast redwood (*Sequoia sempervirens*), red alder (*Alnus rubra*), sword fern (*Polystichum munitum*), skunk cabbage (*Lysichiton americanus*), English ivy (*Hedera helix*), lady fern (*Athyrium filix-femina* var. *cyclosorum*) and pig-a-back plant (*Tolmeia menziesii*), among other species (Appendix 1, Photo 3).

2.0 Project Description

This wetland delineation was conducted to locate wetlands and determine wetland boundaries to establish appropriate buffers and setbacks. Results of this study will be used to properly design any proposed project to minimize impacts to wetlands occurring within the project area or the immediate vicinity.



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Jim Paye
Wetland Delineation
Eureka, California

Project Location

SHN 021184

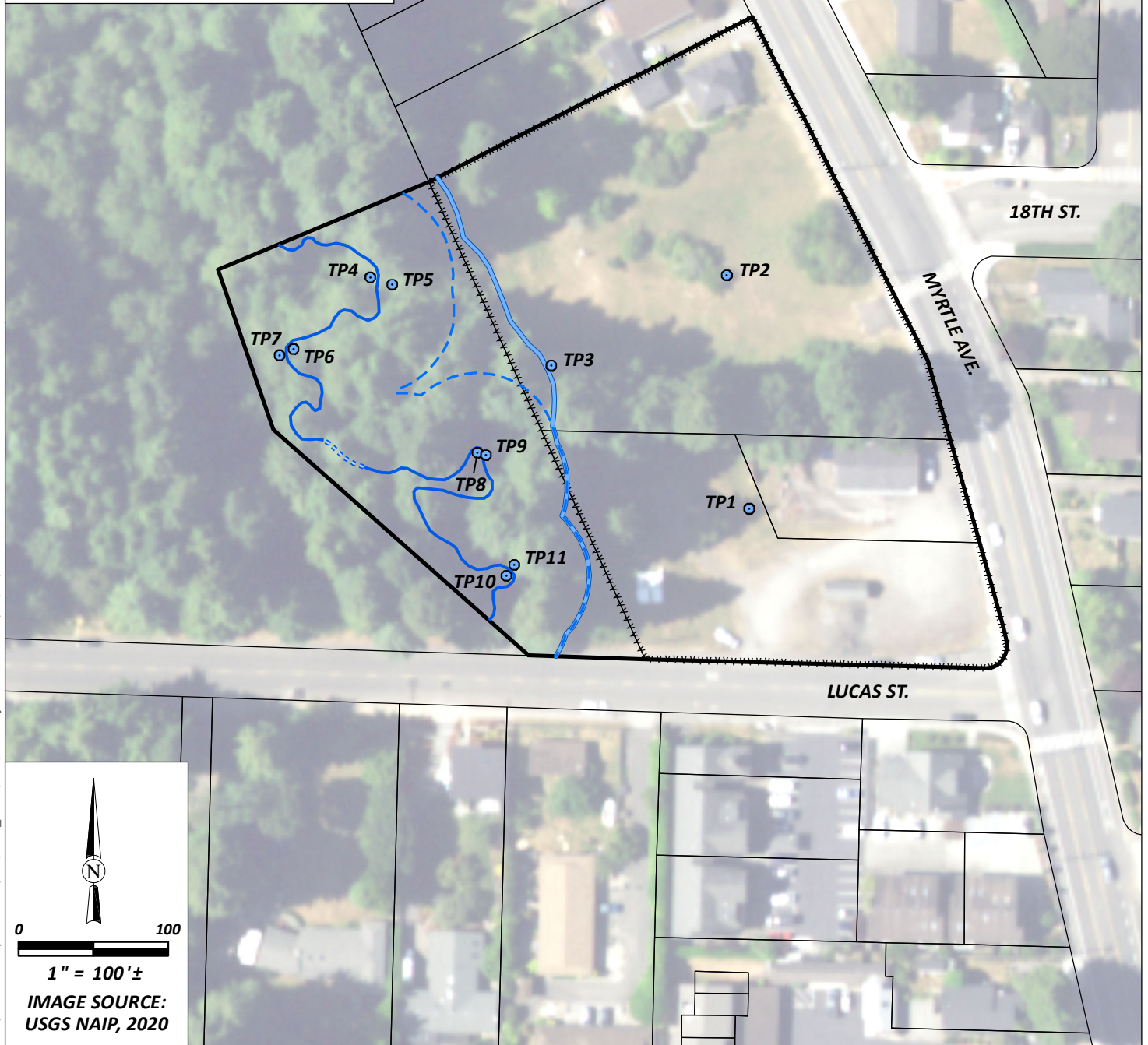
December 2021

WD_Fig1_ProjectLocation

Figure 1

EXPLANATION

-  **TEST PIT**
-  **SUBTERRANEAN FLOW**
-  **WETLAND EDGE**
-  **SEASONAL BUFFER (50 FT)**
-  **PROPOSED WETLAND BUFFER**
-  **PROPOSED PROJECT AREA**
-  **STUDY AREA**
-  **PARCEL BOUNDARIES (APPROX.)**



Jim Paye
Wetland Delineation
Eureka, California

Wetland Delineation Map

SHN 021184

December 2021

WD_Fig2_WetlandDelineation

Figure 2

3.0 Environmental Setting

3.1 Site Uses

Two of the three parcels are currently developed for rural residential use. APN 015-111-006 contains a single-family residence with detached garage and is surrounded by non-native lawns and orchard, with other landscaping. This residence would remain; however, the orchard and lawns would be developed in any proposed project. APN 015-111-012 contains a residential structure as well as several outbuildings. The parcel is primarily gravel with little to no vegetative cover. The third parcel, APN 015-111-013, contains a rental management office and is also primarily compacted gravel with little to no vegetative cover. Historically, the proposed project area appears to have the same residential components as seen today, with structures in about the same configuration since around 1990 (Google Earth, 2021). APN 015-111-008 is undeveloped and is not part of this project, but is included within the study area on account of the extensive wetlands that occur there.

3.2 Site Hydrology

The United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) Climate Analysis for Wetlands Table (WETS) method was used to review rainfall conditions for the previous three months prior to the test pit (TP) investigations (or the same month and two months prior if after the 15th (Table 1; USDA-NRCS, 2021a). The TP investigation occurred on November 11, 2021. The current 2021 rainfall data for October, September, and August (National Oceanic and Atmospheric Administration [NOAA], 2021) were compared to the 30-year rainfall average at the Woodley Island Weather Forecast Office in Eureka, California (1981-2010 data) for the same months. If the current rainfall of each month is between 30% and 70% of the 1981-2010 precipitation average, it is “normal” rainfall; if above 70%, it is ranked “wetter than normal” rainfall; if below 30%, it is ranked “drier than normal” rainfall. The WETS data indicates that the 2021 fall season, just prior to the delineation, is a “wetter than normal” rainfall for the study area.

**Table 1. WETS Rainfall Data, November 2021, Hydrological Analysis
Eureka, Humboldt County, California**

Month	WETS Condition	<30%	> 70%	Rainfall (in.)	Condition Value	Weight	Product Value
June 15, 2021 Test Pit Excavation							
October 2021	Above Normal	1.1	2.73	4.02	3	3	9
September 2021	Above Normal	0.18	0.67	1.24	3	2	6
August 2021	Below Normal	0.05	0.25	0.03	1	1	1
Total	Above Normal^a						16

^a A sum of 6-9 prior to site investigation is considered a drier than normal rainfall.

10-14 prior to site investigation is considered a normal rainfall.

15-18 prior to site investigation is considered a wetter than normal rainfall.

Sources: USDA-NRCS, 2021a; NOAA, 2021



3.3 National Wetlands Inventory

The United States Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI; USFWS, 2021) website maps the study area as upland. The adjacent riparian forest to the west and north is mapped as Palustrine (P), Forested (FO), Broad-leaved Deciduous (1), Temporarily Flooded (A) wetland (Appendix 2, NWI). This general categorization by the NWI is not intended for planning purposes because of the lack of ground-truthing. In the “Data Limitations, Exclusions and Precautions” disclaimer, it states that:

“The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high-altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.”
(USFWS, 2021)

The intent of this study is to verify NWI mapping using site-specific soil, hydrology, and vegetation analysis.

4.0 Vegetation

The wetland indicator status of plant species for this investigation was based on the *Western Mountains, Valleys, and Coast 2020 Regional Wetland Plant List* (USACE, 2020). Synonyms were checked for species that did not appear on the USACE wetland plant list. Plant species were classified as:

- Obligate (OBL)–almost always occurs in wetlands
- Facultative-wetland (FACW)–usually occurs in wetlands, but may occur in non-wetlands
- Facultative (FAC)–occurs in wetlands and non-wetlands
- Facultative-upland (FACU)–usually occurs in non-wetlands, but may occur in wetlands
- Upland (UPL)–almost never occurs in wetlands
- Not listed (NL)–scored as an upland plant and calculated as such on wetland determination forms

During the November 2021 wetland investigation, botanical species were recorded within the vicinity of the TP onto corresponding wetland determination data forms. The study area is on a sedimentary terrace with an eroded gulch immediately west of the proposed project property boundaries. Multiple seepages from the surrounding hillslopes drain into the gulch and associated ravines supporting wetlands and streams. The proposed project area is on a flat upland terrace dominated primarily by non-native herbaceous vegetation: creeping bent grass (*Agrostis stolonifera*), orchard grass (*Dactylis glomerata*), and ryegrass (*Festuca perennis*). Species found within the gulch and associated ravines include coast redwood and red alder, with an understory of English ivy, sword fern, deer fern (*Struthiopteris spicant*), and skunk cabbage, among others. More species can be found listed on the wetland determination data forms in Appendix 3.



5.0 Geologic and Soil Composition

The geology at the site is mapped as marine and nonmarine (continental) sedimentary rocks (geologic map unit Qoa) of Pleistocene age (California Department of Conservation, 2010). The parcels are situated on a sedimentary terrace, with a slope break on the western boundary, where a northwest-southeast gulch has been eroded. Seepages draining from the upper terrace bank down to the gulch have created several cut slopes perpendicular to the gulch.

The underlying soils in the study area have the USDA-NRCS soil map unit designation 230—Hookton-Tablebluff complex, 2 to 9 percent slopes and 257-Lepoil-Candymountain complex, 2 to 15 percent slopes, as described below (Appendix 2, Soil Map). The site-specific soil description at each exploratory soil TP is included in the wetland determination data forms found in Appendix 3, with photos in Appendix 1.

Humboldt County, Central Part, California

230—Hookton-Tablebluff complex, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2ljdr

Elevation: 30 to 820 feet

Mean annual precipitation: 41 to 53 inches

Mean annual air temperature: 52 to 55 degrees F

Frost-free period: 270 to 330 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Hookton and similar soils: 45 percent

Tablebluff and similar soils: 40 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hookton

Setting

Landform: Erosion remnants

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Typical profile

A1 - 0 to 4 inches: loam

A2 - 4 to 15 inches: loam

Bt - 15 to 27 inches: clay loam

Bw1 - 27 to 39 inches: clay loam

Bw2 - 39 to 60 inches: clay loam

Properties and qualities

Slope: 2 to 9 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained



Capacity of the most limiting layer to transmit water (Ksat):Moderately high (0.20 to 0.60 in/hr)
Depth to water table:About 10 to 20 inches
Frequency of flooding:None
Frequency of ponding:None
Maximum salinity:Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Ecological site: R004BA203CA - Riparian
Hydric soil rating: No

Description of Tablebluff

Setting

Landform:Erosion remnants
Landform position (two-dimensional):Summit
Landform position (three-dimensional):Side slope
Down-slope shape:Linear
Across-slope shape:Linear
Parent material:Eolian deposits over mixed alluvium

Typical profile

Ap1 - 0 to 6 inches: silty clay loam
Ap2 - 6 to 11 inches: silty clay loam
AB - 11 to 16 inches: silt loam
Bt1 - 16 to 20 inches: silty clay loam
Bt2 - 20 to 29 inches: silty clay loam
Bt3 - 29 to 42 inches: silty clay loam
Bt4 - 42 to 49 inches: silty clay loam
Bt5 - 49 to 73 inches: clay loam

Properties and qualities

Slope:2 to 9 percent
Depth to restrictive feature:More than 80 inches
Drainage class:Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat):Moderately high (0.20 to 0.60 in/hr)
Depth to water table:About 20 to 39 inches
Frequency of flooding:None
Frequency of ponding:None
Maximum salinity:Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 12.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F004BI101CA - Low elevation marine and floodplain terraces
Hydric soil rating: No



257—Lepoil-Candymountain complex, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2p9zc

Elevation: 10 to 800 feet

Mean annual precipitation: 35 to 90 inches

Mean annual air temperature: 50 to 54 degrees F

Frost-free period: 275 to 325 days

Farmland classification: Not prime farmland

Map Unit Composition

Lepoil and similar soils: 45 percent

Candymountain and similar soils: 40 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lepoil

Setting

Landform: Marine terraces

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed marine deposits derived from sedimentary rock

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material

A - 2 to 16 inches: loam

Bt - 16 to 69 inches: clay loam

2CBt - 69 to 75 inches: very fine sandy loam

2C - 75 to 83 inches: fine sand

Custom Soil Resource Report 15

Properties and qualities

Slope: 2 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 11.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F004BX121CA - Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam and loam

Hydric soil rating: No



Description of Candymountain

Setting

Landform: Marine terraces

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed marine deposits derived from sedimentary rock

Typical profile

Oi - 0 to 4 inches: slightly decomposed plant material

A - 4 to 15 inches: fine sandy loam

Bw - 15 to 31 inches: fine sandy loam

BC - 31 to 45 inches: fine sandy loam

C - 45 to 60 inches: very fine sand

Properties and qualities

Slope: 2 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

Ecological site: F004BX121CA - Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam and loam

Hydric soil rating: No

(USDA-NRCS, 2021b)

6.0 Regulatory Setting

6.1 Federal Laws

6.1.1 Section 401 and 404 of the Clean Water Act

Under Section 404 of the Clean Water Act (CWA; 33 U.S. Code [USC] 1344; U.S. Code of Federal Regulations (CFR), 1986), as amended, the USACE and the Environmental Protection Agency (EPA) retain primary responsibility for regulating discharge of dredged or fill material into “navigable waters of the United States.” All discharges of dredged or fill material into jurisdictional WoUS that result in permanent or temporary losses of WoUS are regulated by the USACE. A permit from the USACE must be obtained before placing fill or grading in wetlands or other WoUS, unless the activity is exempt from CWA Section 404 regulation (for example, certain farming and forestry activities).



In summary, the definition of WoUS as defined by 33 CFR Section 328.3 includes:

1. waters used for commerce,
2. interstate wetlands,
3. all other waters (including lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, and natural ponds),
4. impoundments of water,
5. tributaries to aforementioned waters,
6. territorial seas, and
7. wetlands adjacent to waters.

Under 33 CFR 328.3, WoUS do not include prior converted cropland or waste treatment systems. In 2008, the EPA and USACE released a guidance memorandum implementing the Supreme Court's decision in the cases of the *Rapanos v. U.S.* and *Carabell v. U.S.* Because of these cases, the agencies will apply a significant nexus standard to the following categories of waterbodies to determine if it meets the definition of WoUS:

- Non-navigable tributaries that are not relatively permanent
- Wetland adjacent to non-navigable tributaries that are not relatively permanent
- Wetland adjacent to but that does not directly abut a relatively permanent tributary

Section 401 of the CWA (33 USC 1341) requires that applicants for a federal license or permit obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards (EPA, 1986). The certification is obtained from the state in which the discharge originates or would originate, or if appropriate, from the interstate water pollution control agency having jurisdiction over the affected waters at the point where the discharge originates or would originate. The responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs).

6.1.2 Rivers and Harbors Appropriation Act of 1899

The River and Harbors Appropriation Act of 1899 addresses activities that involve the construction of dams, bridges, dikes, and other structures across any navigable water. Placing obstructions to navigation outside established federal lines and excavating from or depositing material in such waters require permits from the USACE. Section 10 of the Rivers and Harbors Appropriation Act (33 USC 403) prohibits the unauthorized obstruction or alteration of any navigable WoUS.

6.2 State Laws

6.2.1 Porter-Cologne Water Quality Control Act

The State of California maintains independent regulatory authority over the placement of waste, including fill, into WoS under the Porter-Cologne Water Quality Control Act. WoS are defined by the Porter-Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The SWRCB protects all waters in its regulatory scope but has



special responsibility for isolated wetlands and headwaters. WoS are regulated by the RWQCBs under the State Water Quality Certification Program, which regulates discharges of dredged and fill material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act.

Projects that require a USACE permit, or fall under other federal jurisdiction, and have the potential to impact WoS are required to comply with the terms of the Water Quality Certification Program. If a proposed project does not require a federal license or permit but does involve activities that may result in a discharge to WoS, then the local RWQCB has the option to regulate such activities under its state authority in the form of waste discharge requirements (WDRs) or certification of WDRs. Water Quality Order No. 2004-0004-DWQ specifies general WDRs for dredge or fill discharges to waters deemed by the USACE to be outside of federal jurisdiction under Section 404 of the CWA.

7.0 Methods

Wetland delineation fieldwork was conducted on November 11, 2021. Wetland delineation methods described in *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and *The Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0; USACE, 2010)* were used to identify potential wetlands and other waters. The routine method for wetland delineation described in the Environmental Laboratory 1987 manual was used to identify potential wetlands within the study area. The USACE method relies on a three-parameter approach, in which criteria for hydrophytic vegetation, hydric soils, and wetland hydrology must each be met (present at the point of field investigation) to conclude that an area is a wetland.

Hydrophytic vegetation refers to plant species known to be adapted to wetland sites. To classify the hydrophytic plants onsite, the most recent *Western Mountains, Valleys, and Coast 2018 Regional Wetland Plant List* was used (USACE, 2018). Hydric soils are those formed under saturated conditions, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile (USDA-NRCS, 2018). Wetland hydrology is demonstrated through direct evidence (primary indicators) or indirect evidence (secondary indicators) of flooding, ponding, or saturation for a significant portion of the growing season (USACE, 2010).

Prior to conducting the field investigation, SHN staff reviewed the USGS topographic quadrangle map (Figure 1); Google Earth (Google Earth, 2021); USDA-NRCS Web Soil Survey website (USDA-NRCS, 2021b; Appendix 2); and NWI map (USFWS, 2021; Appendix 2). Visual inspection of the site prior to TP excavation was performed to identify appropriate TP locations and potential wetland locations and boundaries. During the TP subsurface investigation, sample points were characterized at each pit for the botanical, hydrological, and soil parameters. Wetland TP locations were selected to:

- achieve appropriate coverage and characterization of wetland and upland habitats,
- document potential changes in the vegetative community (such as a shift in the dominant species), and
- determine the approximate boundary line between wetlands and uplands by evaluating the extent of key wetland criteria (hydrology, hydric soils, and hydrophytic vegetation).

TP locations were mapped using a Trimble sub-meter GPS (global positioning system) unit.



7.1 Vegetation Methods

Prior to the wetland field investigations (November 11, 2021), a review of plant species reported to be within the study area was performed by querying the Consortium of California Herbaria (Consortium of California Herbaria, 2021) database records and Calflora (Calflora, 2021) observations. It was determined that the site investigation was performed during an above-normal rainfall period by reviewing rainfall data (see Section 3.2 Site Hydrology, Table 1). Absolute percent cover of each plant species was visually estimated within the sample point and within each vegetation stratum. The tree stratum was inspected at a 30-foot radius centered on the sample point, and the herb and sapling/shrub strata, at a 5-foot radius. Botanical nomenclature follows *The Jepson Manual, Vascular Plants of California* (Baldwin et al., 2012) in addition to the online Jepson Interchange (University of California, Berkeley, 2021) for verification of species whose taxonomy may have changed since its publication.

The 50/20 method¹ was applied to each stratum to determine the dominant plant species within the vicinity of the test pit. Hydrophytic vegetation wetland parameter requires dominance by hydrophytic vegetation. If hydric soils and wetland hydrology were present, the prevalence index² was applied. The occurrence and type of plant cover determine whether an area satisfies the wetland vegetation parameter criteria. Sites displaying wetland hydrology and hydric soil, but with little or no plant cover, or other sites not capable of supporting hydrophytic plant communities in normal circumstances, may be wetlands as defined by the state of California. Those sites with little or no plant cover, or other sites not capable of supporting hydrophytic plant communities in normal circumstances are identified as other waters, provided they have an OHWM.

7.2 Soils Methods

Soils were field verified for the presence or absence of hydric conditions. All TPs were manually excavated using hand tools to a minimum depth of 24 inches when possible. The thickness of each soil horizon was measured. The Munsell Soil Color Chart (Munsell, 2009) was referenced to determine the colors of the moist soil matrix and redoximorphic (redox) features (if present). Soils were closely inspected for hydric soil indicators, as defined by the NRCS "Field Indicators of Hydric Soils in the United States" (USDA-NRCS, 2018).

7.3 Hydrology Methods

Observations for wetland hydrology were made during TP excavations on November 11, 2021. Wetland hydrology is determined by the presence of surface and/or ground water in addition to indirect hydrologic indicators (such as, water marks, drift deposits, sediment deposits, drainage patterns, geomorphic position, water-stained leaves, and similar features). Indicators of extended periods of saturation would include oxidized rhizospheres surrounding living roots or the presence of reduced iron or sulfur in the soil profile. A site must contain at least one primary indicator or two secondary

¹ The 50/20 rule: for each stratum of the plant community, dominant species are the most abundant species that (when ranked in descending order of abundance and cumulatively totaled) immediately exceed 50% of total dominance measure for the stratum, plus any additional species that individually comprise 20% or more of the total dominance measure for the stratum (USACE, 2010).

² The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot or other sampling unit, 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 (absolute percent cover).



indicators to qualify for the hydrology parameter (Section 3.2 Site Hydrology). In addition, aerial imagery was reviewed that may show past inundation, seasonal inundation patterns, or changes onsite that may have influenced hydrology.

7.4 Ordinary High Water Mark Methods

For purposes of Section 404 of the CWA, the lateral limits of federal jurisdiction over non-tidal water bodies in the absence of adjacent wetlands extend to the OHWM. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. For purposes of Sections 9 and 10 of the Rivers and Harbors Act of 1899, the lateral extent of federal jurisdiction, which is limited to the traditional navigable waters of the United States, extends to the OHWM, whether or not adjacent wetlands extend landward of the OHWM (USACE, 2014).

USACE regulations define the term OHWM for the purposes of the CWA lateral jurisdiction as follows:

“The term “ordinary high water mark” means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas at 33 CFR 328.3(e).”

The OHWM in non-perennial streams corresponds with the boundaries of the active channel, which are typically expressed by some combination of three primary indicators: a topographic break in slope, change in sediment characteristics, and change in vegetation characteristics (USACE, 2014). The following supporting features should be considered when making an OHWM determination, to the extent that they can be identified and are deemed reasonably reliable (USACE, 2014):

- Drift/wrack
- Erosion/scour
- Bank undercutting
- Root exposure
- Point bars
- Water staining
- Litter removal
- Silt deposits
- Shelving
- Headcut/knickpoint
- Macroinvertebrates

8.0 Discussion and Results

Visual inspection of the study area prior to TP excavation revealed well-drained sedimentary soils dominated by non-native grasses and forbs in the majority of the elevated terrace (eastern portion of the study area) and redwood and red alder dominant in the eroded terrace slopes and gulch to the west. Eleven TPs were excavated by hand (Figure 2), and data for each TP was recorded for soils, vegetation, and hydrology on USACE Wetland Determination Data Forms (Appendix 3). The investigation occurred during an “above normal” rainfall period within the growing season for this region (Section 3.2 Site Hydrology). Normal circumstances were considered present, as no current disturbances were observed at the site and no recent disturbance was noted on historical Google Earth imagery.



A freshwater forested/shrub wetland occurs west of the study area as shown on the NWI map (Appendix 2). The NWI mapping generally shows the wetland confined to the main northwest-southeast drainageway gulch. During this investigation, the wetland boundary was found to extend east from the main drainage up several side ravines carved out by seeps issuing from the west facing terrace slope. Paired plots were excavated to help delineate the extent of the wetland boundary within this region including: TP4 and 5, TP6 and 7, TP8 and 9, and TP10 and 11.

No OHWM indicators were present within the study area. The nearest OHWM indicators were west of the wetland boundary shown on Figure 2. See the discussion sections below for each TP, which describe the physical features and considerations of the site, followed by a data section that summarizes information from the completed USACE Wetland Determination Data Forms (Appendix 3). A map of the study area is included as Figure 2 and photos of the study area are presented in Appendix 1.

8.1 TP1

8.1.1 Discussion TP1

TP1 was excavated at the central portion of the project area on the upper terrace (Figure 2; Appendix 1, Photo 1). The test site was chosen to represent the eastern flat portion of the parcel. No wetland parameters were met at this TP; therefore, TP1 and the surrounding area do not meet the State or USACE wetland definition.

8.1.2 Data TP1

TP1 vegetation contained an herb stratum. The dominant species were creeping bent grass [FAC] with 30-percent cover, orchard grass [FACU] with 25-percent cover; and subterranean clover (*Trifolium subterranean* [NL]) with 20-percent cover. Vegetation dominance by a mix of upland and wetland indicator species do not meet the hydrophytic vegetation parameter.

No hydric soil or wetland hydrology indicators were observed.

8.2 TP2

8.2.1 Discussion TP2

TP2 was excavated north of TP1 as an additional investigation of conditions within the flat upper terrace (Figure 2; Appendix 1, Photo 2). One wetland parameter (hydrophytic vegetation) was present at this TP, and therefore TP2 and the surrounding area do not meet State or USACE wetland definition.

8.2.2 Data TP2

TP2 vegetation contained the herb stratum. The dominant species was ryegrass [FAC] with 71-percent cover. The vegetation dominance by a Facultative wetland indicator species meets the hydrophytic vegetation parameter.

No hydric soil or wetland hydrology indicators were observed.



8.3 TP3

8.3.1 Discussion TP3

TP3 was excavated in a dry ravine extending east into the terrace (Figure 2). No wetland parameters were met at this TP; therefore, TP3 and the surrounding area do not meet the State or USACE wetland definition.

8.3.2 Data TP3

TP3 vegetation contained the tree stratum and the woody vine stratum. The dominant species for the tree stratum was coast redwood [NL] with 98-percent cover. The woody vine stratum dominant species was English Ivy [FACU] with 21-percent cover. Vegetation dominance by a mix of upland species does not meet the hydrophytic vegetation parameter.

No hydric soil or wetland hydrology indicators were observed.

8.4 TP4

8.4.1 Discussion TP4

TP4 was excavated in the northwest-southeast gulch, west of the terrace at the toe of slope (Figure 2; Appendix 1, Photo 4). Three wetland parameters were present at this TP; therefore, TP4 and adjacent area meet both the State and USACE wetland definitions.

8.4.2 Data TP4

TP4 vegetation contained the tree, sapling/shrub, and herb strata. The dominant tree species was red alder [FAC] with 65-percent cover. The dominant sapling/shrub stratum species were Himalayan and California blackberries (*Rubus armeniacus* [FAC] and *Rubus ursinus* [FACU] respectively), both with 4-percent coverage. The dominant herb stratum species were skunk cabbage [OBL] with 25-percent cover and pig-a-back plant [FAC] with 20-percent cover. Vegetation dominance by a wetland indicator species meets the hydrophytic vegetation parameter.

Hydric soil indicators observed were the Depleted Below Dark Surface (A11), Depleted Matrix (F3) and "Other" for the observance of the alpha, alpha-Dipyridyl reaction within the top 12 inches of the soil surface, therefore meeting the criteria for the hydric soil parameter.

The primary hydrology Presence of Reduced Iron (C4) indicator was observed (alpha, alpha-Dipyridyl reaction within the top 12 inches), therefore meeting the criteria for the hydrology parameter.

8.5 TP5

8.5.1 Discussion TP5

TP5 was excavated approximately 16 feet upslope and east of TP4. TP5 is the upland paired plot for TP4 (Figure 2; Appendix 1, Photo 4). Only one wetland parameter (hydrophytic vegetation) was met at this TP; therefore, TP5 and the adjacent area do not meet the State or USACE wetland definition.

8.5.2 Data TP5

TP5 vegetation contained the tree, sapling/shrub, and herb strata. The dominant tree species were coast redwood [NL] with 60-percent cover and red alder [FAC] with 20-percent cover. The sapling/shrub stratum contained coast twinberry (*Lonicera involucrata* var. *ledebourii* [FAC]) with 15-percent cover and



California blackberry [FACU] with 4-percent cover. The herb stratum contained the pig-a-back plant [FAC] with 60-percent cover. Vegetation dominance by wetland indicator species meets the hydrophytic vegetation parameter.

No hydric soil or wetland hydrology indicators were observed.

8.6 TP6

8.6.1 Discussion TP6

TP6 was excavated in the northwest-southeast drainage area and is the paired upland plot for TP7 (Figure 2; Appendix 1, Photo 5). Two wetland parameters were observed at this TP (hydrophytic vegetation and hydric soil) therefore, TP6 and the adjacent area do not meet the State or USACE wetland definition.

8.6.2 Data TP6

TP6 vegetation contained the tree, sapling/shrub, herb, and woody vine strata. The sapling/shrub and woody vine strata had less than 5-percent absolute cover and therefore do not contribute to the dominance test calculations and are not discussed in this section. The dominant tree species were red alder [FAC] with 70-percent cover and coast redwood [NL] with 20-percent cover. The herb stratum contained slough sedge (*Carex obnupta* [OBL]) with 50-percent cover and deer fern [FAC] with 40-percent cover. Vegetation dominance by wetland indicator species meets the hydrophytic vegetation parameter.

Hydric soil indicators observed was the Depleted Below Dark Surface (A11), therefore meets the criteria for the hydric soil parameter.

No wetland hydrology indicators were observed.

8.7 TP7

8.7.1 Discussion TP7

TP7 was excavated as a paired wetland plot for TP6. It is at the toe of slope of the eroded terrace to the east (Figure 2; Appendix 1, Photo 5). Three wetland parameters were present at this TP; therefore, TP7 and the adjacent area meet both the State and USACE wetland definitions.

8.7.2 Data TP7

TP7 vegetation contained the tree, sapling/shrub, and herb strata. The dominant tree species was the red alder [FAC] with 95-percent cover. The sapling/shrub stratum contained red elderberry (*Sambucus racemosa* var. *racemosa* [FACU]) with 10-percent cover. The herb stratum contained slough sedge [OBL] with 50-percent cover and deer fern [FAC] with 18-percent cover. Vegetation dominance by wetland indicator species meets the hydrophytic vegetation parameter.

Hydric soil indicators observed were the Depleted Below Dark Surface (A11) indicator and "Other" indicator for the observance of the alpha, alpha-Dipyridyl reaction within the top 12 inches of the soil surface, therefore meeting the criteria for the hydric soil parameter.



Presence of Reduced Iron (C4) and (alpha, alpha-Dipyridyl reaction within the top 12 inches) wetland hydrology indicators were observed, meeting the criteria for the wetland hydrology parameter.

8.8 TP8

8.8.1 Discussion TP8

TP8 was excavated to determine the eastern extent of the wetland edge within a small ravine containing a seep cutting into the eastern terrace. It is situated in the transitional zone between the upland and wetland boundary (Figure 2, Appendix 1, Photo 6). Two wetland parameters were observed at this TP (hydric soil and wetland hydrology) however hydrophytic vegetation dominance occurs within a very localized area around the seep but is obscured by upland vegetation occurring on the surrounding slopes. Because hydric soils and wetland hydrology are present with localized hydrophytic vegetation dominance, vegetation is determined to be problematic and the vegetation parameter has been met. All three wetland parameters were present at this TP; therefore, TP8 and the adjacent area associated with the seep meet both the State and USACE wetland definitions.

8.8.2 Data TP8

TP8 vegetation contained the tree, herb, and woody vine strata. The woody vine stratum had less than 5-percent absolute cover and is not considered in the dominance test calculations. The dominant tree species was coast redwood [NL] with 50-percent cover, however this species reflects upland conditions on the slope above the small seep wetland. The herb stratum contained lady [FAC] from within the wetland area with 30-percent cover and sword fern [FAC] from the adjacent upland slope with 30-percent cover. Vegetation dominance within the localized seep wetland meets the hydrophytic vegetation parameter.

Hydric soil indicators observed were the Redox Dark Surface (F6) indicator and "Other" indicator for the observance of the alpha, alpha-Dipyridyl reaction within the top 12 inches of the soil surface, therefore meeting the criteria for the hydric soil parameter.

The primary wetland hydrology indicators, Saturation (A3) and the Presence of Reduced Iron (C4) (alpha, alpha-Dipyridyl reaction within the top 12 inches) were observed, therefore meeting the criteria for the wetland hydrology parameter.

8.9 TP9

8.9.1 Discussion TP9

TP9 was excavated eight feet east and upslope from TP8 as the upland paired plot, confirming the eastern boundary of the wetland (Figure 2; Appendix 1, Photo 6). One wetland parameter (hydric soil) was present at this TP; therefore, TP9 and the surrounding hillslope do not meet the State or USACE wetland definition.

8.9.2 Data TP9

TP9 vegetation contained the tree, sapling/shrub, herb, and woody vine strata. The woody vine stratum had less than 5-percent absolute cover and is not considered in the dominance test calculations. The dominant tree species were coast redwood [NL] with 50-percent cover and cherry



plum (*Prunus cerasifera* [NL]) with 20-percent cover. The herb stratum contained sword fern [FACU] with 50-percent cover and lady fern [FAC] with 15-percent cover. Vegetation dominance by a mix of upland and wetland indicator species do not meet the hydrophytic vegetation parameter.

Redox Dark Surface (F6), hydric soil indicator was observed meeting the criteria for the hydric soil parameter.

No wetland hydrology indicators were observed.

8.10 TP10

8.10.1 Discussion TP10

TP10 was excavated to determine the eastern wetland edge within a small ravine containing a seep cutting into the eastern terrace. It is situated in the transitional zone between the upland and wetland and conditions were similar to those observed at TP8. Two wetland parameters were observed at this TP (hydric soil and wetland hydrology) however hydrophytic vegetation dominance occurs within a very localized area around the seep but is obscured by upland vegetation occurring on the surrounding slopes. Because hydric soils and wetland hydrology are present with localized hydrophytic vegetation dominance, vegetation is determined to be problematic, and the vegetation parameter has been met. All three wetland parameters were present at this TP; therefore, TP10 and the adjacent area associated with the seep meet both the State and USACE wetland definitions.

8.10.2 Data TP10

TP10 vegetation contained the tree and herb stratus. The dominant tree species were cherry plum [NL] with 50-percent cover, coast redwood [NL] with 40-percent cover, and red alder [FAC] with 25-percent cover, however tree species composition reflects upland conditions on the slope above the small seep wetland. The herb stratum contained lady fern [FAC] from within the wetland area with 32-percent cover. Vegetation dominance within the localized seep wetland meets the hydrophytic vegetation parameter.

Hydric soil indicators observed with soils Depleted Below Dark Surface (A11), Loamy Gleyed Matrix (F2), and "Other" for the observance of the alpha, alpha-Dipyridyl reaction within the top 12 inches of the soil surface, therefore meeting the criteria for the hydric soil parameter.

Wetland hydrology was observed with a High Water Table (A2), Saturation (A3), and the Presence of Reduced Iron (C4) indicators (alpha, alpha-Dipyridyl reaction within the top 12 inches) meeting the criteria for the wetland hydrology parameter.

8.11 TP11

8.11.1 Discussion TP11

TP11 was excavated approximately 8.5 feet east of TP10 as the upland paired pit to determine the eastern wetland edge. No wetland parameters were met at this TP; therefore, TP11 and the surrounding hillside area do not meet the State or USACE wetland definition.



8.11.2 Data TP11

TP11 vegetation contained the tree, herb, and woody vine stratus. The dominant tree species was coast redwood [NL] with 60-percent cover and cherry plum [NL] with 50-percent cover. The herb stratum contained lady fern [FAC] with 30-percent cover and sword fern [FAC] with 23-percent cover. The woody vine stratum contained English Ivy [FACU] with 40-percent cover. Dominance by a mix of upland and wetland indicator species did not meet the hydrophytic vegetation parameter.

No hydric soil or wetland hydrology indicators were observed.

9.0 Conclusions

Three-parameter seasonal and perennial wetlands occur on the county-owned parcel, west of the proposed project area. The eastern boundary of these wetlands are shown on Figure 2. Perennial wetlands occur within the lower elevations of the gulch. Several seepages within the gulch hillslope have created eastern-trending fingers of seasonal wetlands, and seasonal wetlands also exist along the base of the gulch hillslope at slightly higher elevations than the perennial wetlands (Figure 2). Paired plots were excavated in these seepages and along the toe of slope to find the approximate extent of the wetland boundary. No wetlands or wetland conditions were observed within the proposed project area reflecting the elevated, well-drained conditions at the top of the terrace. The proposed project area is within planning area of the Eureka Community plan (County of Humboldt, 1995) which references the Humboldt County General plan (County of Humboldt, 2017) for sensitive habitat area buffers and setbacks. Within the Humboldt County General Plan, seasonal wetlands are given a 50-foot buffer and perennial wetlands are given a 150-foot buffer. Seasonal and perennial wetlands intergrade throughout the gulch area. We recommend that the wetland buffer be set back 10 feet from the top of bank along the gulch as shown on Figure 2. This will give wetland areas a minimum 50-foot buffer and will exceed 100 feet for half of the buffer length along the proposed project area.

Table 2 describes the number and type of parameters met at each of the eleven TPs. Figure 2 indicates the wetland boundary and TP locations within the study area.

**Table 2. Parameters Met at Each Test Pit, November 2021
Eureka, Humboldt County, California**

TP ^a Number	Parameters Present	Parameter Type	Latitude/Longitude
TP1	0	None	40.791593° -124.134756°
TP2	1	Hydrophytic Vegetation	40.792021°/ -124.134824°
TP3	0	None	40.791847°/ -124.135242°
TP4	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.792002°/ -124.135685°
TP5	1	Hydrophytic Vegetation	40.791989°/ -124.135631°
TP6	2	Hydrophytic Vegetation, Hydric Soils	40.791867°/ -124.135865°



TP ^a Number	Parameters Present	Parameter Type	Latitude/Longitude
TP7	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.791854°/ -124.135898°
TP8	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.791685°/ -124.135415°
TP9	1	Hydric Soils	40.791681°/ -124.135395°
TP10	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.791461°/ -124.135338°
TP11	0	None	40.791480°/ -124.135320°

^a TP: test pit

10.0 Limitations

The conclusions in this report document conditions at the time of field work and some wetland conditions and plant species may not have been identifiable or may not have been present. This report documents the investigation by using the best professional judgment of SHN's wetland ecologist and soil scientist.

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Site Photographs

1



Photo 1: Existing residential structure and outbuildings on APN 015-111-012, looking west towards coast redwood forest on gulch hillslope. Photo taken November 11, 2021.



Photo 2: Looking north across non-native lawn towards structures on APN 015-111-006. Photo taken November 11, 2021.



Photo 3: Typical vegetation in northwest-southeast drainage gulch. Photo taken November 11, 2011.



Photo 4: TPs 4 and 5 (TP5 with yellow shovel and TP4 with GPS antenna pole). Photo taken November 11, 2011.



Photo 5: TP6 and TP7 (TP7 with yellow shovel and TP6 with GPS antenna pole). Looking east, upslope towards terrace. Photo taken November 11, 2021.



Photo 6: Location of TP8 and TP9 (looking west towards TP8 with yellow shovel). Eroded ravine with seep draining to the main gulch. Photo taken November 11, 2021.

**National Wetlands
Inventory
Soil Map**

2



U.S. Fish and Wildlife Service

National Wetlands Inventory

Paye JJ Rental Wetland



November 9, 2021

Wetlands

	Estuarine and Marine Deepwater		Freshwater Emergent Wetland		Lake
	Estuarine and Marine Wetland		Freshwater Forested/Shrub Wetland		Other
			Freshwater Pond		Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



United States
Department of
Agriculture

NRCS

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

Custom Soil Resource Report for Humboldt County, Central Part, California



November 3, 2021

Preface

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

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

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

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

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

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

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Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Humboldt County, Central Part, California.....	13
230—Hookton-Tablebluff complex, 2 to 9 percent slopes.....	13
257—Lepoil-Candymountain complex, 2 to 15 percent slopes.....	15
References	18

How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

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

Soil Map

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

Custom Soil Resource Report Soil Map



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MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 7, Sep 6, 2021

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

Date(s) aerial images were photographed: May 8, 2019—Jun 21, 2019

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
230	Hookton-Tablebluff complex, 2 to 9 percent slopes	1.8	53.5%
257	Lepoil-Candymountain complex, 2 to 15 percent slopes	1.6	46.5%
Totals for Area of Interest		3.4	100.0%

Map Unit Descriptions

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

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

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

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the

Custom Soil Resource Report

development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

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

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

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

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

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

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

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

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

Humboldt County, Central Part, California

230—Hookton-Tablebluff complex, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2ljdr

Elevation: 30 to 820 feet

Mean annual precipitation: 41 to 53 inches

Mean annual air temperature: 52 to 55 degrees F

Frost-free period: 270 to 330 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Hookton and similar soils: 45 percent

Tablebluff and similar soils: 40 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hookton

Setting

Landform: Erosion remnants

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Typical profile

A1 - 0 to 4 inches: loam

A2 - 4 to 15 inches: loam

Bt - 15 to 27 inches: clay loam

Bw1 - 27 to 39 inches: clay loam

Bw2 - 39 to 60 inches: clay loam

Properties and qualities

Slope: 2 to 9 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: About 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C/D

Ecological site: R004BA203CA - Riparian

Hydric soil rating: No

Description of Tablebluff

Setting

Landform: Erosion remnants
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits over mixed alluvium

Typical profile

Ap1 - 0 to 6 inches: silty clay loam
Ap2 - 6 to 11 inches: silty clay loam
AB - 11 to 16 inches: silt loam
Bt1 - 16 to 20 inches: silty clay loam
Bt2 - 20 to 29 inches: silty clay loam
Bt3 - 29 to 42 inches: silty clay loam
Bt4 - 42 to 49 inches: silty clay loam
Bt5 - 49 to 73 inches: clay loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 20 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 12.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F004B1101CA - Low elevation marine and floodplain terraces
Hydric soil rating: No

Minor Components

Urban land, residential

Percent of map unit: 5 percent
Landform: Marine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Cannonball

Percent of map unit: 5 percent
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear

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Across-slope shape: Linear

Ecological site: F004BX121CA - Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam and loam

Hydric soil rating: No

Megwil,

Percent of map unit: 5 percent

Landform: Marine terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F004BX120CA - Redwood-Sitka spruce/California huckleberry-salmonberry/western swordfern-deer fern, marine terraces, loam

Hydric soil rating: No

257—Lepoil-Candymountain complex, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2p9zc

Elevation: 10 to 800 feet

Mean annual precipitation: 35 to 90 inches

Mean annual air temperature: 50 to 54 degrees F

Frost-free period: 275 to 325 days

Farmland classification: Not prime farmland

Map Unit Composition

Lepoil and similar soils: 45 percent

Candymountain and similar soils: 40 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lepoil

Setting

Landform: Marine terraces

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed marine deposits derived from sedimentary rock

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material

A - 2 to 16 inches: loam

Bt - 16 to 69 inches: clay loam

2CBt - 69 to 75 inches: very fine sandy loam

2C - 75 to 83 inches: fine sand

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F004BX121CA - Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam and loam
Hydric soil rating: No

Description of Candymountain

Setting

Landform: Marine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed marine deposits derived from sedimentary rock

Typical profile

Oi - 0 to 4 inches: slightly decomposed plant material
A - 4 to 15 inches: fine sandy loam
Bw - 15 to 31 inches: fine sandy loam
BC - 31 to 45 inches: fine sandy loam
C - 45 to 60 inches: very fine sand

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B

Custom Soil Resource Report

Ecological site: F004BX121CA - Redwood-Sitka spruce/salal-California
huckleberry/western swordfern, marine terraces, marine deposits, sandy loam
and loam
Hydric soil rating: No

Minor Components

Cannonball

Percent of map unit: 10 percent
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F004BX121CA - Redwood-Sitka spruce/salal-California
huckleberry/western swordfern, marine terraces, marine deposits, sandy loam
and loam
Hydric soil rating: No

Hutsinpillar

Percent of map unit: 5 percent
Landform: Marine terraces, drainageways
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

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Custom Soil Resource Report

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**Wetland
Determination
Data Forms**

3

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: JJ Rentals City/County: Humboldt Sampling Date: 11/11/21
 Applicant/Owner: Paye State: CA Sampling Point: TPI
 Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None Slope (%): 0-5
 Subregion (LRR): A; MLRA 4B Lat: 40.791593° Long: -124.134756° Datum: WGS 84
 Soil Map Unit Name: Hookton - Tablebluff complex 2-90b 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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks: <u>Mowed lawn area, with evidence of historical and ongoing disturbance</u>		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
= Total Cover				Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = _____</td> </tr> </table>	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 = _____	
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 = _____																				
= Total Cover																				
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ = Total Cover																				
Herb Stratum (Plot size: <u>5ft</u>) 1. <u>Hypochaeris radicata</u> <u>6</u> <u>FACU</u> 2. <u>Raphanus sativa</u> <u>2</u> <u>NL</u> 3. <u>Plantago lanceolata</u> <u>1</u> <u>FACU</u> 4. <u>Dactylis glomerata</u> <u>25</u> <u>✓ FACU</u> 5. <u>Rumex acetosella</u> <u>4</u> <u>FACU</u> 6. <u>Rumex crispus</u> <u>3</u> <u>FAC</u> 7. <u>Agrostis stolonifera</u> <u>30</u> <u>✓ FAC</u> 8. <u>Taraxacum officinale</u> <u>20</u> <u>✓ NL</u> 9. <u>Bellis perennis</u> <u>5</u> <u>FACU</u> 10. <u>Bellis perennis</u> <u>2</u> <u>NL</u> 11. _____ <u>98</u> = Total Cover <u>49/96</u>																				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ = Total Cover																				
% Bare Ground in Herb Stratum <u>2% (thatch)</u> = Total Cover																				
Remarks: <u>Non-native mowed lawn conditions</u>																				

SOIL

Sampling Point: **TP1**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	10YR 4/3	100	/	/	/	/	CL	Fill
9-24	10YR 3/4	85	/	/	/	/	CL	Fill, multiple fill events
	10YR 3/3	5						
	7.5YR 5/6	10						

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

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

☐ Histosol (A1)	☐ Sandy Redox (S5)	☐ 2 cm Muck (A10)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)	☐ Red Parent Material (TF2)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)	☐ Very Shallow Dark Surface (TF12)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)	☐ Other (Explain in Remarks)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)	
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)	
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)	
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)	

³Indicators 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:

Multiple fill layers. No redox features.

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)	☐ Drainage Patterns (B10)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Dry-Season Water Table (C2)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Geomorphic Position (D2)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Shallow Aquitard (D3)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ FAC-Neutral Test (D5) ☒
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)	☐ Raised Ant Mounds (D6) (LRR A)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)	☐ Frost-Heave Hummocks (D7)
☐ Inundation Visible on Aerial Imagery (B7)		
☐ Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes _____ No ☒	Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes _____ No ☒
Water Table Present?	Yes _____ No ☒	Depth (inches): <u>N/A</u>	
Saturation Present? (includes capillary fringe)	Yes _____ No ☒	Depth (inches): <u>N/A</u>	

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

Remarks:

Well drained mowed lawn. Sloping toward gully. No wetland hydrology observed.

Sampling Point

[illegible]

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)	
Primary Indicators (minimum of one required; check all that apply)				
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)		
☐ High Water Table (A2)	☐ Salt Crust (B11)	☐ Drainage Patterns (B10)		
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Dry-Season Water Table (C2)		
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Saturation Visible on Aerial Imagery (C9)		
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Geomorphic Position (D2)		
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Shallow Aquitard (D3)		
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ FAC-Neutral Test (D5) ☒		
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)	☐ Raised Ant Mounds (D6) (LRR A)		
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)	☐ Frost-Heave Hummocks (D7)		
☐ Inundation Visible on Aerial Imagery (B7)				
☐ Sparsely Vegetated Concave Surface (B8)				
Field Observations:				
Surface Water Present?	Yes ☐ No ☒	Depth (inches): <u>N/A</u>		
Water Table Present?	Yes ☐ No ☒	Depth (inches): <u>N/A</u>		
Saturation Present?	Yes ☐ No ☒	Depth (inches): <u>N/A</u>		
(includes capillary fringe)			Wetland Hydrology Present? Yes ☐ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				
Remarks: Well drained, sloping toward ravine. No wetland hydrology hydrology present.				



WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: JJ Rentals City/County: Humboldt Sampling Date: 11/11/21
Applicant/Owner: Paye State: CA Sampling Point: TP3
Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range:
Landform (hillslope, terrace, etc.): Gully feature on terrace Local relief (concave, convex, none): None Slope (%): 5%
Subregion (LRR): A; MLRA 4B Lat: 40.791847° Long: -124.135242° Datum: WGS84
Soil Map Unit Name: Lepoil-Candy mountain complex 2-151b 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: Well drained gully feature with mature redwood trees. Well drained + dry. Does not collect storm water		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	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)
1. Sequoia sempervirens	98	✓	NL	
2.				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 =
3.				
4.				
5.				
6.				
Sapling/Shrub Stratum (Plot size:)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1.				
2.				
3.				
4.				
Herb Stratum (Plot size:)				Hydrophytic Vegetation Present? Yes ☐ No ☒
1.				
2.				
3.				
4.				
Woody Vine Stratum (Plot size: 5 ft)				Remarks: Redwood duff and litter
1. Hedera helix	21	✓	FACU	
2.				
% Bare Ground in Herb Stratum 100% *	21			
Remarks:				

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/1	100					L	Many roots and human debris
10-24	10YR 5/4	70					Sil	
	7.5YR 5/6	30						with charcoal pieces, fill

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

Indicators for Problematic Hydric Soils³:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ 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) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators 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:

In redwood grove - duff ~1" above soil surface. Dry soils
Fill - No Redox

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| ☐ Surface Water (A1) | ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) | ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| ☐ High Water Table (A2) | ☐ Salt Crust (B11) | ☐ Drainage Patterns (B10) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) | ☐ Dry-Season Water Table (C2) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) | ☐ Saturation Visible on Aerial Imagery (C9) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres along Living Roots (C3) | ☐ Geomorphic Position (D2) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) | ☐ Shallow Aquitard (D3) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) | ☐ FAC-Neutral Test (D5) |
| ☐ Iron Deposits (B5) | ☐ Stunted or Stressed Plants (D1) (LRR A) | ☐ Raised Ant Mounds (D6) (LRR A) |
| ☐ Surface Soil Cracks (B6) | ☐ Other (Explain in Remarks) | ☐ Frost-Heave Hummocks (D7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | | |
| ☐ Sparsely Vegetated Concave Surface (B8) | | |

Field Observations:

Surface Water Present? Yes No ☒ Depth (inches): none
Water Table Present? Yes No ☒ Depth (inches):
Saturation Present? Yes No ☒ Depth (inches):
(includes capillary fringe)

Wetland Hydrology Present? Yes No ☒

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

Remarks:

Well drained gully, with mature redwood trees. Dry soils in spite of recent rains. No wetland hydrology, does not receive water from surroundings



Consulting Engineers
& Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: JJ Rentals City/County: Humboldt Sampling Date: 11/11
 Applicant/Owner: Paye State: CA Sampling Point: TP4
 Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Gulch through terrace Local relief (concave, convex, none): None Slope (%): 0-1
 Subregion (LRR): A; MLRA 4B Lat: 40.792002° Long: -124.135685° Datum: WGS 84
 Soil Map Unit Name: Lo. soil - Candy mtn complex 2-15% slopes NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? 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:
 * Fill from adjacent slope has likely obscured wetland hydrology
 * *Sesuvium portulacastrum* cover not recorded as they represent upland slope conditions adj.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80%</u> (A/B)
1. <u>Alnus rubra</u>	<u>55</u>	☒	<u>FAC</u>	
2. _____				
3. _____				
Sapling/Shrub Stratum (Plot size: <u>5 ft</u>) 1. <u>Rubus ursinus</u> <u>4</u> ☒ <u>FACU</u> 2. <u>Rubus armeniacus</u> <u>4</u> ☒ <u>FAC</u> 3. _____ 4. _____ 5. _____				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 = _____
Herb Stratum (Plot size: <u>5 ft</u>) 1. <u>Tolmiea menziesii</u> <u>20</u> ☒ <u>FAC</u> 2. <u>Lysichiton americanus</u> <u>25</u> ☒ <u>OBL</u> 3. <u>Athyrium filix-femina</u> <u>7</u> ☒ <u>FAC</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ % Bare Ground in Herb Stratum <u>48%*1</u> = Total Cover <u>52</u>				
Remarks: <u>* Litter</u>				

SOIL

Sampling Point: TP4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 2/1	100					CL	w/occasional gravel
5-12	10YR 4/1	92	5YR 5/8	3	C	M	SL	
	10YR 6/8	5						fill
12-24+	10YR 5/1	96	7.5YR 4/6	4	C	M	SL	Native soil

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

Indicators for Problematic Hydric Soils³:

- | | |
|---|---|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) (except MLRA 1) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☒ Depleted Below Dark Surface (A11) | ☒ Depleted Matrix (F3) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Dark Surface (F6) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Redox Depressions (F8) |

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☒ Other (Explain in Remarks) *

³Indicators 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:

* Bottom horizon reacted positive to AAD w/in 12" of soil surface.

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| ☐ Surface Water (A1) | ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) | ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| ☐ High Water Table (A2) | ☐ Salt Crust (B11) | ☐ Drainage Patterns (B10) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) | ☐ Dry-Season Water Table (C2) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) | ☐ Saturation Visible on Aerial Imagery (C9) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres along Living Roots (C3) | ☐ Geomorphic Position (D2) |
| ☐ Drift Deposits (B3) | ☒ Presence of Reduced Iron (C4) | ☐ Shallow Aquitard (D3) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) | ☐ FAC-Neutral Test (D5) ☒ |
| ☐ Iron Deposits (B5) | ☐ Stunted or Stressed Plants (D1) (LRR A) | ☐ Raised Ant Mounds (D6) (LRR A) |
| ☐ Surface Soil Cracks (B6) | ☐ Other (Explain in Remarks) | ☐ Frost-Heave Hummocks (D7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | | |
| ☐ Sparsely Vegetated Concave Surface (B8) | | |

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): N/A

Water Table Present? Yes ☐ No ☒ Depth (inches): 18"

Saturation Present? Yes ☐ No ☒ Depth (inches): 14"

(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

- Bottom horizon reacted positive to AAD.

- Fill from adjacent hill slope has obscured wetland conditions; wetland hydrology immediately adjacent.



WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: JJ Rentals City/County: Humboldt Sampling Date: 11/11/21
Applicant/Owner: Paye State: CA Sampling Point: TP5
Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: _____
Landform (hillslope, terrace, etc.): Gulch hillslope Local relief (concave, convex, none): None Slope (%): 15
Subregion (LRR): A; MLRA 4B Lat: 40.791989° Long: -124.135631° Datum: WGS84
Soil Map Unit Name: Lepoil-Candymtn complex 2-15% slope 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: TP excavated slightly up fill slope from TP 4, approx. 15' 10" and 36 in. elevation difference		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Across All Strata: 5 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)
1. <i>Alnus rubra</i>	20	☒	FAC	
2. <i>Sequoia sempervirens</i>	60	☒	NL	
3. _____	_____	_____	_____	
Sapling/Shrub Stratum (Plot size: 5 ft)				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 = _____
1. <i>Rubus ursinus</i>	4	☒	FACU	
2. <i>Lonicera involucrata</i> var. <i>telekii</i>	15	☒	FAC	
3. _____	_____	_____	_____	
Herb Stratum (Plot size: 5 ft)				Hydrophytic Vegetation Indicators: ☒ 1 - Rapid Test for Hydrophytic Vegetation ☐ 2 - Dominance Test is >50% ☐ 3 - Prevalence Index is ≤3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ 5 - Wetland Non-Vascular Plants ¹ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <i>Salvia leucantha</i>	19	☒	FAC	
2. <i>Stachys affinis</i>	60	☒	OBL	
3. <i>Polystichum acrostichum</i>	1	_____	FACU	
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes ☒ No _____
1. <i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	15	_____	FAC	
2. <i>Allium triquetrum</i>	1	_____	NL	
3. _____	_____	_____	_____	
% Bare Ground in Herb Stratum 10% = Total Cover 47/188				
Remarks: *Litter and debris				

SOIL

Sampling Point: **TP5**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 3/1	100	—	—	—	—	SIL	
5-24	10YR 4/2	65	—	—	—	—	SCL	Large asphalt chunks + charcoal
—	10YR 6/8	35	—	—	—	—	—	mixed fill

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

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

☐ Histosol (A1)	☐ Sandy Redox (S5)	☐ 2 cm Muck (A10)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)	☐ Red Parent Material (TF2)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)	☐ Very Shallow Dark Surface (TF12)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)	☐ Other (Explain in Remarks)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)	
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)	
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)	
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)	

³Indicators 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: Mixed fill from adjacent slope. Not redox features

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)	☐ Drainage Patterns (B10)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Dry-Season Water Table (C2)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Geomorphic Position (D2)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Shallow Aquitard (D3)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ FAC-Neutral Test (D5) ☒
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)	☐ Raised Ant Mounds (D6) (LRR A)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)	☐ Frost-Heave Hummocks (D7)
☐ Inundation Visible on Aerial Imagery (B7)		
☐ Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes _____ No ☒	Depth (inches): N/A	Wetland Hydrology Present? Yes _____ No ☒
Water Table Present?	Yes _____ No ☒	Depth (inches): N/A	
Saturation Present? (includes capillary fringe)	Yes _____ No ☒	Depth (inches): N/A	

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

Remarks: Dry well drained fill slope.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: JJ Rentals City/County: Humboldt Sampling Date: 11/11/21
 Applicant/Owner: Paye State: CA Sampling Point: TP 6
 Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Gulch hillslope Local relief (concave, convex, none): None Slope (%): 25
 Subregion (LRR): A; MLRA 4B Lat: 40.791857° Long: -124.135865° Datum: WGS 84
 Soil Map Unit Name: Lepoil-Candymtn complex 2-15% slopes NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, 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: <u>TP excavated upslope from wetland (9' 3" from TP 7). Carex obnupta dominant and is a transitional location, however no hydrology</u>		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Alnus rubra</u>	<u>70</u>	☒	<u>FAC</u>	
2. <u>Sequoia sempervirens</u>	<u>20</u>	☒	<u>NL</u>	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:
= Total Cover <u>90</u>				
Sapling/Shrub Stratum (Plot size: <u>5 ft</u>)				
1. <u>Sambucus racemosa</u>	<u>2</u>	_____	<u>FACU</u>	
2. _____	_____	_____	_____	
= Total Cover <u>2</u>				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 = _____
Herb Stratum (Plot size: <u>5 ft</u>)				
1. <u>Carex obnupta</u>	<u>50</u>	☒	<u>OBL</u>	
2. <u>Stachys spicata</u>	<u>40</u>	☒	<u>FAC</u>	
3. <u>Polystichum munitum</u>	<u>15</u>	_____	<u>FACU</u>	
4. <u>Atkynium filix-ferina var. cyclosorum</u>	<u>3</u>	_____	<u>FAC</u>	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
= Total Cover <u>108</u>				
Woody Vine Stratum (Plot size: <u>5 ft</u>)				
1. <u>Hedera helix</u>	<u>2</u>	_____	<u>FACU</u>	
2. _____	_____	_____	_____	
= Total Cover <u>2</u>				
% Bare Ground in Herb Stratum <u>5%*</u>				Hydrophytic Vegetation Present? Yes ☒ No _____
Remarks: <u>* Litter</u>				

Note: Stratum with less than 5% total cover are not included in dominance calcs.

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10YR 3/2	100	10YR 6/8	30	C	M	SCL LS	Native soils
7-24+	5Y 5/1	70						too deep for S5

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

 Indicators for Problematic Hydric Soils³:

- | | |
|---|---|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) (except MLRA 1) |
| ☒ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☒ Depleted Below Dark Surface (A11) | ☐ Depleted Matrix (F3) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Dark Surface (F6) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Redox Depressions (F8) |

- ☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators 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:

Native soils present

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| ☐ Surface Water (A1) | ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) | ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| ☐ High Water Table (A2) | ☐ Salt Crust (B11) | ☐ Drainage Patterns (B10) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) | ☐ Dry-Season Water Table (C2) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) | ☐ Saturation Visible on Aerial Imagery (C9) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres along Living Roots (C3) | ☐ Geomorphic Position (D2) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) | ☐ Shallow Aquitard (D3) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) | ☒ FAC-Neutral Test (D5) |
| ☐ Iron Deposits (B5) | ☐ Stunted or Stressed Plants (D1) (LRR A) | ☐ Raised Ant Mounds (D6) (LRR A) |
| ☐ Surface Soil Cracks (B6) | ☐ Other (Explain in Remarks) | ☐ Frost-Heave Hummocks (D7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | | |
| ☐ Sparsely Vegetated Concave Surface (B8) | | |

Field Observations:

Surface Water Present?	Yes ☐ No ☒	Depth (inches): N/A
Water Table Present?	Yes ☐ No ☒	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒	Depth (inches): N/A

 Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

On slope above wetland. Well drained.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: JJ Rentals City/County: Humboldt Sampling Date: 11/11/21
 Applicant/Owner: Paye State: CA Sampling Point: TP 7
 Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Gulch in uplifted marine terrace Local relief (concave, convex, none): None Slope (%): 2%
 Subregion (LRR): A; MLRA 4B Lat: 40.791854 Long: -124.135898 Datum: WGS 84
 Soil Map Unit Name: Lepid-candy mtn 2-15% slopes NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? 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: TP excavated in wetland at bottom of gulch. flowing water approx. 5ft away.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <i>Alnus rubra</i>	95	☒	FAC		Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
2. _____				Total Number of Dominant Species Across All Strata: 4 (B)	
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)	
4. _____				Prevalence Index worksheet:	
Sapling/Shrub Stratum (Plot size: 5 ft)					
1. <i>Sambucus racemosa</i>	10	☒	FACU		Total % Cover of: _____ Multiply by: _____
2. _____					OBL species _____ x 1 = _____
3. _____					FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____	
5. _____				FACU species _____ x 4 = _____	
Herb Stratum (Plot size: 5 ft)				UPL species _____ x 5 = _____	
1. <i>Lysichiton americanus</i>	5		OBL	Column Totals: _____ (A) _____ (B)	
2. <i>Carex obanata</i>	50	☒	OBL	Prevalence Index = B/A = _____	
3. <i>Struthiostris spicata</i>	18	☒	FAC	Hydrophytic Vegetation Indicators:	
4. <i>Athyrium filix-femina</i> var. <i>gibbosa</i>	15		FAC		
5. _____					1 - Rapid Test for Hydrophytic Vegetation
6. _____					☒ 2 - Dominance Test is >50%
7. _____					3 - Prevalence Index is ≤3.0 ¹
8. _____				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
9. _____				5 - Wetland Non-Vascular Plants ¹	
10. _____				Problematic Hydrophytic Vegetation ¹ (Explain)	
11. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: 5 ft)				Hydrophytic Vegetation Present? Yes ☒ No _____	
1. <i>Hedera helix</i>	2		FACU		
2. _____					
% Bare Ground in Herb Stratum 30*					
Remarks: *Bare mineral soil + litter*					



WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: JJ Rentals City/County: Humboldt Sampling Date: 11/11/21
Applicant/Owner: Paye State: CA Sampling Point: TP 8
Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: _____
Landform (hillslope, terrace, etc.): Gulch Hillslope Local relief (concave, convex, none): None Slope (%): 50
Subregion (LRR): A; MLRA 4B Lat: 40.791685° Long: -124.135415 Datum: WGS 84
Soil Map Unit Name: Lepid- Candy mtn complex 2-15% 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: TP excavated within seep wetland on hillslope. * localized seep wetland not reflected by veg.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <i>Sequoia sempervirens</i>	50		NL	Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
2. Not rep. of localized seep				Total Number of Dominant Species Across All Strata: 2 (B)
3. <i>Not rep. of localized seep</i>				Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)
4. <i>Not rep. of localized seep</i>				
= Total Cover				
Sapling/Shrub Stratum (Plot size: 5 ft)				Prevalence Index worksheet:
1. _____				Total % Cover of: Multiply by:
2. _____				OBL species 0 x 1 = 0
3. _____				FACW species 0 x 2 = 0
4. _____				FAC species 30 x 3 = 90
5. _____				FACU species 32 x 4 = 128
= Total Cover				UPL species 50 x 5 = 250
Herb Stratum (Plot size: 5 ft)				Column Totals: 112 (A) 468 (B)
1. <i>Athyrium filix-femina</i> var. <i>eximium</i>	30	✓	FAC	Prevalence Index = B/A = 4.17
2. <i>Polystichum minimum</i>	30	✓	FACU	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
= Total Cover				
Woody Vine Stratum (Plot size: 5 ft)				Hydrophytic Vegetation Indicators:
1. <i>Hedera helix</i>	2		FACU	1 - Rapid Test for Hydrophytic Vegetation
2. _____				2 - Dominance Test is >50%
= Total Cover				3 - Prevalence Index is ≤3.0 ¹
% Bare Ground in Herb Stratum 80%				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Remarks: * Off + Litter. - Vegetation is problematic. Small wetland seep conditions are extremely localized. Plant dominance influenced by steep upland slopes. - Only using herbaceous dominance				5 - Wetland Non-Vascular Plants ¹
				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 ☒

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-22	10YR 3/2	75	5YR 3/3	10	C	M	SIL	Native soils
22-24+	2.5Y 4/2	60	10YR 4/6	40	C	M	LS	

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

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

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) (except MLRA 1) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Matrix (F3) |
| ☐ Thick Dark Surface (A12) | ☒ Redox Dark Surface (F6) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☒ Other (Explain in Remarks)

³Indicators 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:

Seepage drainage way on hill slope x=a, a-d w/in 3" of horizon

HYDROLOGY

Wetland Hydrology Indicators:

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

- | | |
|--|---|
| ☐ Surface Water (A1) | ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| ☐ High Water Table (A2) | ☐ Salt Crust (B11) |
| ☒ Saturation (A3) | ☐ Aquatic Invertebrates (B13) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres along Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☒ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Stunted or Stressed Plants (D1) (LRR A) |
| ☐ Surface Soil Cracks (B6) | ☐ Other (Explain in Remarks) |
| ☐ Inundation Visible on Aerial Imagery (B7) | |
| ☐ Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5) ☒
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): N/A

Water Table Present? Yes ☐ No ☒ Depth (inches): 13 in

Saturation Present? Yes ☒ No ☐ Depth (inches): Surface

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

localized seep wetland providing hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: JJ Rentals City/County: Humboldt Sampling Date: 11/11/21
 Applicant/Owner: Paye State: CA Sampling Point: TP 9
 Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: 302 1 8
 Landform (hillslope, terrace, etc.): Gulch hillslope Local relief (concave, convex, none): None Slope (%): 45%
 Subregion (LRR): A; MLRA 4B Lat: 40.791681° Long: -124.135395° Datum: WGS84
 Soil Map Unit Name: Lepoil-Candy mtn complex 2-15% slopes NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No (If no, explain in Remarks.)
 Are Vegetation, 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: TP excavated ~ 8ft from TP 8 in seep. Upland conditions, dry + steep.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Sequoia sempervirens	50	✓	NL	
2. Prunus ceratocarpa	20	✓	NL	Total Number of Dominant Species Across All Strata: 4 (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)
4.				
Sapling/Shrub Stratum (Plot size: 5ft)				Prevalence Index worksheet:
1. Sambucus racemosa	2		FACU	
2.				OBL species x 1 =
3.				FACW species x 2 =
4.				FAC species x 3 =
5.				FACU species x 4 =
Herb Stratum (Plot size: 5ft)				UPL species x 5 =
1. Polystichum minutum	50	✓	FACU	Column Totals: (A) (B)
2. Athyrium filix-femina var. cyclosporum	15	✓	FAC	Prevalence Index = B/A =
3.				Hydrophytic Vegetation Indicators:
4.				
5.				
6.				
7.				
8.				1 - Rapid Test for Hydrophytic Vegetation
9.				2 - Dominance Test is >50%
10.				3 - Prevalence Index is ≤3.0 ¹
11.				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Woody Vine Stratum (Plot size: 5ft)				5 - Wetland Non-Vascular Plants ¹
1. Hedera helix	2		FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
2.				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
% Bare Ground in Herb Stratum 50*				Hydrophytic Vegetation Present? Yes ☐ No ☒
2 = Total Cover				
Remarks: * Litter + duff from Sequoia sempervirens				
* Veg. strata with less than 5% total cover not incl. in dominance calculations.				

SOIL

Sampling Point: TP9

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-24"	7.5YR 2/1	94	2.5YR 4/8	6	C	PL+M	SL	Broken glass present
0-3	10YR 2/1	100					L	forest duff + mineral soil
3-24"	7.5YR 2/1	94	2.5YR 4/8	6	C	PL+M	SL	Broken glass present

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

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

Indicators for Problematic Hydric Soils³:

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) (except MLRA 1) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Matrix (F3) |
| ☐ Thick Dark Surface (A12) | ☒ Redox Dark Surface (F6) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Redox Depressions (F8) |

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators 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:

Transitional soils away from hillside seep.
- fill peat as evidenced by broken glass + debris

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| ☐ Surface Water (A1) | ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) | ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| ☐ High Water Table (A2) | ☐ Salt Crust (B11) | ☐ Drainage Patterns (B10) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) | ☐ Dry-Season Water Table (C2) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) | ☐ Saturation Visible on Aerial Imagery (C9) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres along Living Roots (C3) | ☐ Geomorphic Position (D2) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) | ☐ Shallow Aquitard (D3) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) | ☐ FAC-Neutral Test (D5) ☒ |
| ☐ Iron Deposits (B5) | ☐ Stunted or Stressed Plants (D1) (LRR A) | ☐ Raised Ant Mounds (D6) (LRR A) |
| ☐ Surface Soil Cracks (B6) | ☐ Other (Explain in Remarks) | ☐ Frost-Heave Hummocks (D7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | | |
| ☐ Sparsely Vegetated Concave Surface (B8) | | |

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): N/A
Water Table Present? Yes ☐ No ☒ Depth (inches): N/A
Saturation Present? Yes ☐ No ☒ Depth (inches): N/A
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No wetland hydrology present. Steep slope, immediately uphill from hillside seep.



Consulting Engineers
& Geologists, Inc.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: JJ Rentals City/County: Humboldt Sampling Date: 11/11/21
 Applicant/Owner: Paye State: CA Sampling Point: TP 10
 Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Gulch hillslope Local relief (concave, convex, none): None Slope (%): 60
 Subregion (LRR): A; MLRA 4B Lat: 40.791461° Long: -124.135338 Datum: WGS84
 Soil Map Unit Name: Lepoint-Candy mtn complex 2-1500 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 X, 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 <u>X</u>	Is the Sampled Area within a Wetland? Yes <u>X</u> * No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks: <u>TP excavated at edge of hillslope seep.</u> * Vegetation composition does not reflect small, localized seep.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Sequoia sempervirens</u>	<u>40</u>	<u>✓</u>	<u>NL</u>	
2. <u>Pinus laevis</u>	<u>50</u>	<u>✓</u>	<u>NL</u>	Total Number of Dominant Species Across All Strata: <u>5</u> (B)
3. <u>Alnus rubra</u>	<u>25</u>	<u>✓</u>	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40%</u> (A/B)
4. _____	<u>115</u>			
<u>115</u> = Total Cover <u>575/23</u>				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species <u>0</u> x 1 = <u>0</u>
3. _____				FACW species <u>0</u> x 2 = <u>0</u>
4. _____				FAC species <u>58</u> x 3 = <u>174</u>
5. _____				FACU species <u>15</u> x 4 = <u>60</u>
				UPL species <u>90</u> x 5 = <u>450</u>
				Column Totals: <u>163</u> (A) <u>684</u> (B)
				Prevalence Index = B/A = <u>4.20</u>
Herb Stratum (Plot size: <u>5ft</u>)				Hydrophytic Vegetation Indicators:
1. <u>Allyrium filix-femina</u> var. <u>cyclosum</u>	<u>32</u>	<u>✓</u>	<u>FAC</u>	1 - Rapid Test for Hydrophytic Vegetation
2. <u>Stanthioptis spicata</u>	<u>1</u>		<u>FAC</u>	2 - Dominance Test is >50%
3. _____				3 - Prevalence Index is ≤3.0 ¹
4. _____				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. _____				5 - Wetland Non-Vascular Plants ¹
6. _____				Problematic Hydrophytic Vegetation ¹ (Explain)
7. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. _____				
9. _____				
10. _____				
11. _____				
	<u>33</u>			
<u>33</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>5ft</u>)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. <u>Hedera helix</u>	<u>15</u>	<u>✓</u>	<u>FACU</u>	
2. _____	<u>15</u>			
<u>15</u> = Total Cover				
% Bare Ground in Herb Stratum <u>70%*</u>				
Remarks: <u>* Redwood litter + duff.</u>				

SOIL

Sampling Point: **TP10**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10.5	10YR 3/2	100					SIL	
10.5-24	10Y 5/1	92	7.5YR 6/8	8	C	PL+M	C	

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

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

- | | |
|---|---|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) (except MLRA 1) |
| ☐ Hydrogen Sulfide (A4) | ☒ Loamy Gleyed Matrix (F2) |
| ☒ Depleted Below Dark Surface (A11) | ☐ Depleted Matrix (F3) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Dark Surface (F6) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☒ Other (Explain in Remarks) **X**

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

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

*** a-a, d reaction @ 10.5" to 12" clay layer**

HYDROLOGY

Wetland Hydrology Indicators:

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

- | | |
|--|---|
| ☒ Surface Water (A1) | ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| ☒ High Water Table (A2) | ☐ Salt Crust (B11) |
| ☒ Saturation (A3) | ☐ Aquatic Invertebrates (B13) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres along Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☒ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Stunted or Stressed Plants (D1) (LRR A) |
| ☐ Surface Soil Cracks (B6) | ☐ Other (Explain in Remarks) |
| ☐ Inundation Visible on Aerial Imagery (B7) | |
| ☐ Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5) **X**
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): **N/A**
 Water Table Present? Yes ☒ No ☐ Depth (inches): **5 in**
 Saturation Present? Yes ☒ No ☐ Depth (inches): **Surface**
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Hillside seep. Localized hydrology. See TP 11 for upland conditions. a, d-a

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: JJ Rentals City/County: Humboldt Sampling Date: 11/11/21
 Applicant/Owner: Paye State: CA Sampling Point: TP 11
 Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Gulch hillslope Local relief (concave, convex, none): None Slope (%): 70
 Subregion (LRR): A; MLRA 4B Lat: 40.791480° Long: -124.135320 Datum: WGS 84
 Soil Map Unit Name: Lepoil-Candy mtn complex 2-15% slope 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: TP 11 excavated approx. 63 in from TP 10. Representative of upland slope conditions.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <i>Pinus laurercerasus</i>	50	☒	NL	
2. <i>Sequoia sempervirens</i>	60	☒	NL	Total Number of Dominant Species Across All Strata: 5 (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)
4. _____				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
Herb Stratum (Plot size: 5 ft)				UPL species _____ x 5 = _____
1. <i>Polystichum munitum</i>	23	☒	FACU	Column Totals: _____ (A) _____ (B)
2. <i>Athyrium filix-femina</i> var. <i>cydonum</i>	30	☒	FAC	Prevalence Index = B/A = _____
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
Woody Vine Stratum (Plot size: 5 ft)				Hydrophytic Vegetation Indicators:
1. <i>Hedera helix</i>	40	☒	FACU	1 - Rapid Test for Hydrophytic Vegetation
2. _____	40			2 - Dominance Test is >50%
% Bare Ground in Herb Stratum 47*				3 - Prevalence Index is ≤3.0 ¹
Remarks: * Redwood litter + duff.				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
				5 - Wetland Non-Vascular Plants ¹
				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 ☒

SOIL

Sampling Point: TP11

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12.5	2.5Y 4/3	60					SL	Fill
	10YR 4/2	30					SL	Fill mix
	2.5Y 6/2	10					SL	Fill mix, roots
12.5-23.5	2.5Y 6/2	80	7.5YR 5/8	20	C	M	LS	many roots

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

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

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) (except MLRA 1) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Matrix (F3) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Dark Surface (F6) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators 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:

Edge of wetland. Transitioning to upland.

HYDROLOGY

Wetland Hydrology Indicators:

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

- | | |
|--|---|
| ☐ Surface Water (A1) | ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| ☐ High Water Table (A2) | ☐ Salt Crust (B11) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres along Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Stunted or Stressed Plants (D1) (LRR A) |
| ☐ Surface Soil Cracks (B6) | ☐ Other (Explain in Remarks) |
| ☐ Inundation Visible on Aerial Imagery (B7) | |
| ☐ Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): N/A
Water Table Present? Yes _____ No X Depth (inches): N/A
Saturation Present? Yes _____ No X Depth (inches): N/A
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

well drained, steep slope

Eureka, CA | Arcata, CA | Redding, CA | Willits, CA | Fort Bragg, CA | Coos Bay, OR | Klamath Falls, OR

