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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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.

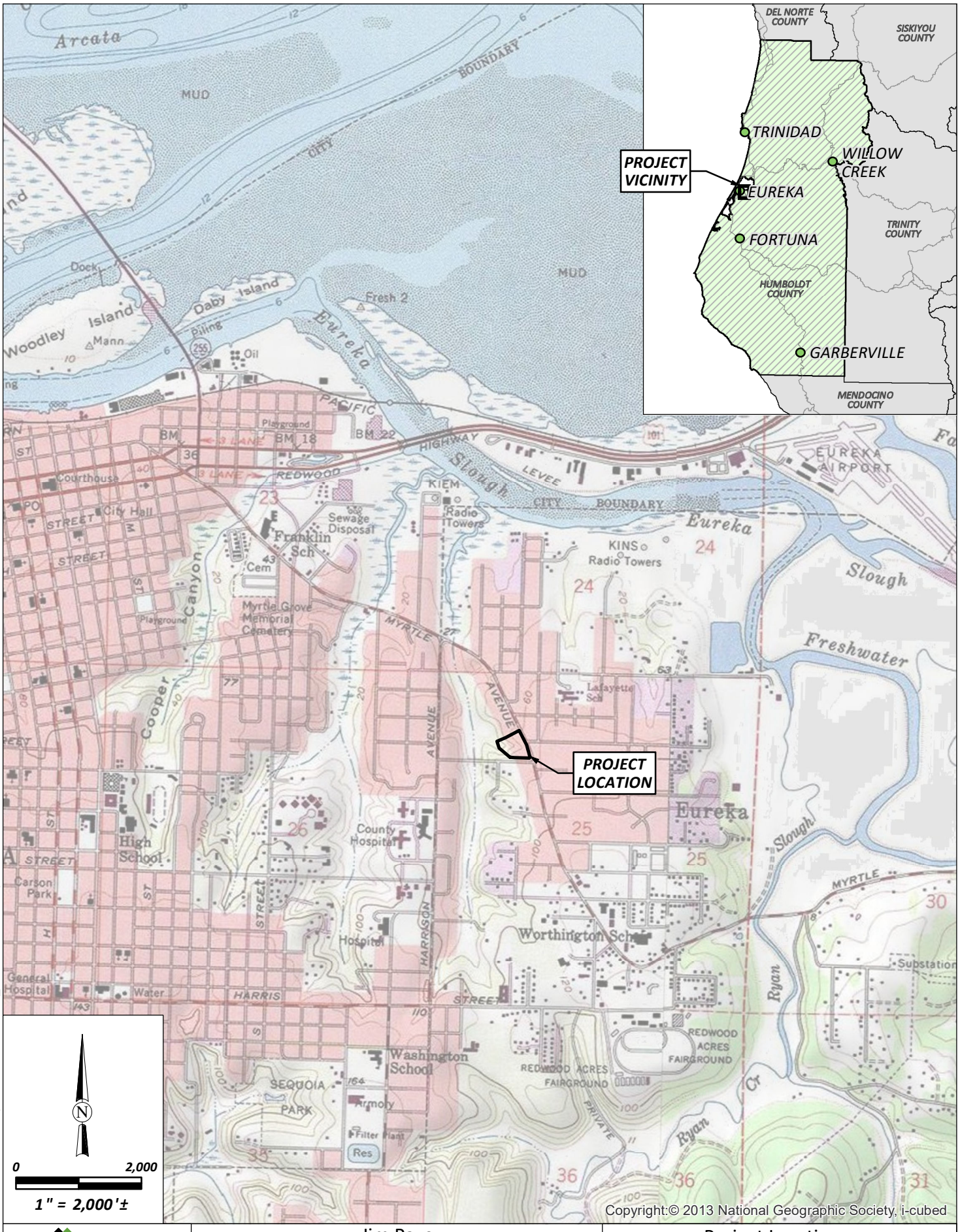
1.2 Study Area

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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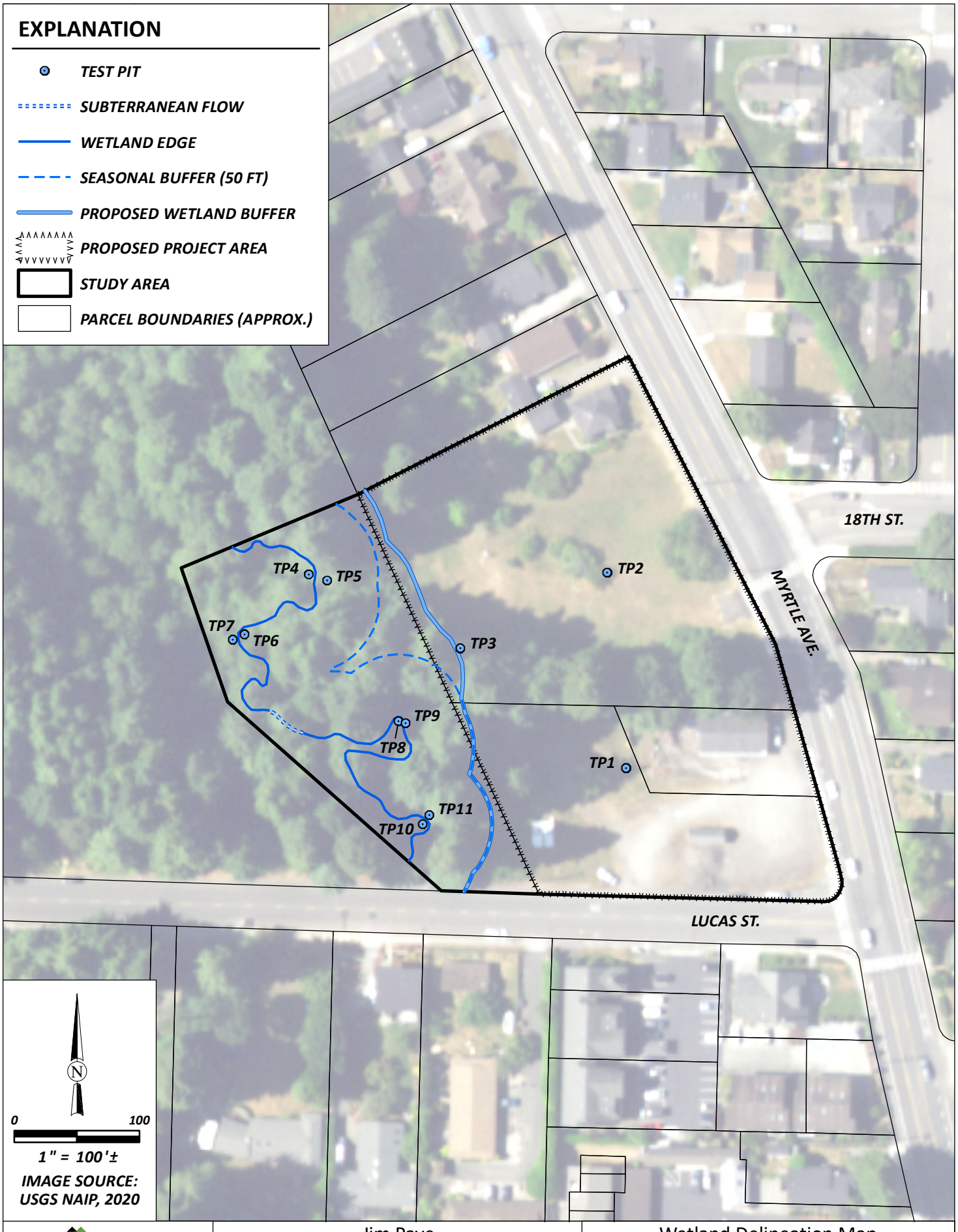
	Jim Paye Wetland Delineation Eureka, California	Project Location SHN 021184
	December 2021 | WD_Fig1_ProjectLocation	Figure 1



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SHN	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 method[1] 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 index[2] 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 stratums. 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 stratums. 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 stratums. The sapling/shrub and woody vine stratums 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 stratums. The dominant tree species was the red alder [FAC] with 95-percent cover. The sapling/shrub stratum contained red elderberry (S*ambucus 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 the 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 stratums. 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 stratums. 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 stratums. 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

TP11was 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 stratums. 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 intergrate 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.

11.0 References Cited

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. (2012). *The Jepson Manual: Vascular Plants of California, second edition*. Berkeley, CA: University of California Press, Berkeley.

Calflora. (2021). Calflora database. Accessed November 2021 at: http://calflora.org/.

California Department of Conservation. (2010). Geologic Map of California. California Geological Survey. Accessed November 2021 at: https://maps.conservation.ca.gov/cgs/gmc/.

Consortium of California Herbaria. (2021). Consortium of California Herbaria database. Accessed November 2021 at: http://ucjeps.berkeley.edu/consortium/.

County of Humboldt. (1995). Humboldt County General Plan, Eureka Community Plan. Accessed December 2021 at: https://humboldtgov.org/DocumentCenter/View/65035/Eureka-Community-Plan-as-amended-by-General-Plan-2017-PDF.

County of Humboldt. (2017). Humboldt County General Plan. Accessed December 2021 at: https://humboldtgov.org/DocumentCenter/View/61986/Chapter-10-Conservation-and-Open-Space-Elements-PDF.

Environmental Laboratory. (1987). C*orps of Engineers Wetland Delineation Manual. Technical Report Y-87-1*. Vicksburg, MS:USACE Waterways Experiment Station.

Google Earth. (2021). NAIP 4/30/2019 imagery latitude 40.791799° and longitude -124.134966°. NR: Google Earth.

Munsell Color (Firm). (2009). Munsell Soil Color Charts: with Genuine Munsell Color Chips. Grand Rapids, MI:Munsell Color.

National Oceanic and Atmospheric Administration (NOAA). (2021). *Climate Graphs*. National Weather Service Forecast Office, Eureka, California. Accessed at: https://www.wrh.noaa.gov/climate/monthdisp.php?stn=KEKA&p=temperature&mon=6&wfo=eka&year=2021.

University of California, Berkeley. (2021). "Jepson eFlora." Accessed at: http://ucjeps.berkeley.edu/eflora/.

U.S. Army Corps of Engineers. (2010). *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain, Valleys, and Coast Region*, J.S. Wakeley, R.W. Lichvar, and C.V. Noble (eds) ERDC/EL TR-08-03. Vicksburg, MS: USACE Research and Development Center.

---. (2014). *A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States*, M. K. Mersel and R. W. Lichvar (eds) ERDC/CRREL TR-14-13. Vicksburg, MS: USACE Research and Development Center.

---. (2020). *Western Mountains, Valleys, and Coast: 2020 Regional Wetland Plant List*, Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin (eds), ERDC/CRREL. Vicksburg, MS: USACE Research and Development Center.

U.S. Code of Federal Regulations. (1986). "33 CFR 328, 401, 403, 404. Title 33, Navigation and Navigable Waters; Chapter II; Army Corp of Engineers, Dept. of Defense, Part 328, Regulatory Program of the U.S. Army Corps of Engineers." NR: USACE.

U.S. Department of Agriculture, Natural Resources Conservation Service. (2018). *Field Indicators of Hydric Soils in the United States, Version 8.2.* G.W. Hurt, L.M. Vasilas (eds.). NR: USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils. Version 8.2.

---. (2021a). WETS Database. Eureka WFO Woodley Island, CA. Accessed at: http://agacis.rcc-acis.org/?fips=06023.

---. (2021b). Web Soil Survey. Accessed at: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

U.S. Environmental Protection Agency. (EPA). (1986). (33 USC 1341) Clean Water Act Section 401: State Certification of Water Quality. Washington D.C.:EPA.

U.S. Fish and Wildlife Service. (USFWS). (November 2021). National Wetlands Inventory. Accessed at: http://www.fws.gov/wetlands/data/mapper.HTML/.

U.S. Geological Survey. (2021). USGS US Topo 7.5-minute map for Eureka, CA 2021: USGS - National Geospatial Technical Operations Center (NGTOC). NR:USGS.

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.

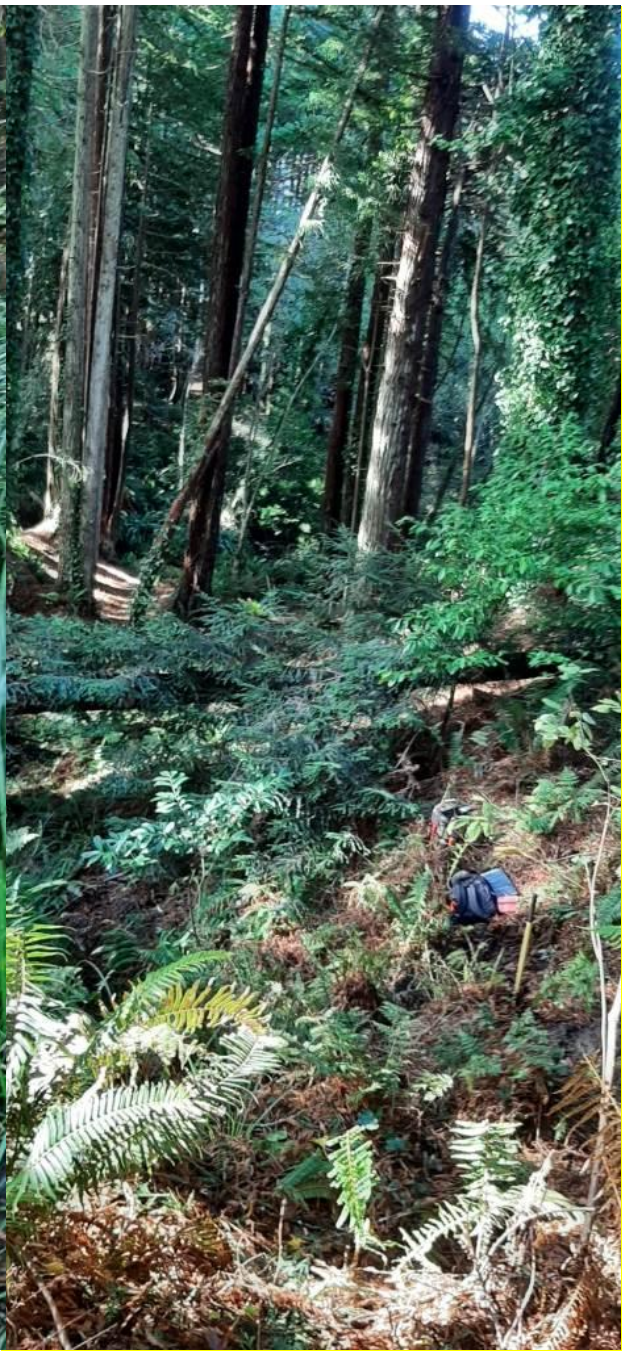

Photo 6: Location of TP8 and TP9 (looking west towards TP8 with yellow shovel). Eroded ravine with seep draining to the main gulch. Photo taken November 11, 2021.

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

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for 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

How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

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

Soil Map

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

Custom Soil Resource Report
Soil Map

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

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: F004BI101CA - 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

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

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

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Wetland Determination Data Forms

3

SHN 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: TP1

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 2-9% NWI classification: none

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

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

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

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

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

Remarks:
Mowed lawn area, with evidence of historical and ongoing disturbance

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Hypochaeris radicata	6		FACU
2. Raphanus sativa	2		NL
3. Plantago lanceolata	1		FACU
4. Dactylis glomerata	25	✓	FACU
5. Rumex acetosella	4		FACU
6. Rumex crispus	3		FAC
7. Agrostis stolonifera	30	✓	FAC
8. Trifolium subterraneum	20	✓	NL
9. Taraxacum officinale	5		FACU
10. Bellis perennis	2		NL
11.			
	98 = Total Cover		49/19.6
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		
% Bare Ground in Herb Stratum 2% (thatch)			

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 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.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
Non-native mowed lawn conditions

SOIL

Sampling Point: TP 1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	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						

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Multiple fill layers. No redox features.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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 X Depth (inches): N/A

Water Table Present? Yes _____ No X Depth (inches): N/A

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

Wetland Hydrology Present? Yes _____ No X

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.

SHN 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: TP2

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range:

Landform (hillslope, terrace, etc.): Uplifted alluvial terrace Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A; MLRA 4B Lat: 40.792021° Long: -124.134824° Datum: WGS 84

Soil Map Unit Name: Hookton-Table bluff complex 2-9% slopes NWI classification: none

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

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

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

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

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

Remarks: Located within low spot with mowed orchard adjacent to residence.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Daucus Carota	2		FACU
2. Taraxacum officinale	4		FACU
3. Bellis perenne	4		NL
4. Festuca perrenne	71	✓	FAC
5. Rumex crispus	1		FAC
6. Rumex acetosella	9		FACU
7. Dactylis glomerata	3		FACU
8. Geranium molle	1		NL
9. Hypochaeris radicata	5		FACU
10.			
11.			
	100 = Total Cover		50/20
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 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.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: Mowed lawn conditions. Fruit trees and other horticultural species present.

SOIL

Sampling Point: TP2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-21	10YR 3/2	99					SCL	w/occasional gravel
	10YR5/6	1						fill nodule

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

fill soil. Concrete at 21 inches. No redox features

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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? (includes capillary fringe) Yes _____ No X Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Well drained, sloping toward ravine. No wetland hydrology present.

SHN 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: 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-Candymountain complex 2-15% NWI classification: none

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

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

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

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

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

Remarks: Well drained gully feature with mature redwood trees. Well drained + dry. Does not collect stormwater

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Sequoia sempervirens	98	✓	NL
2.			
3.			
4.			
	98	= Total Cover	

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	

Woody Vine Stratum (Plot size: 5ft)			
1. Hedera helix	21	✓	FACU
2.			
	21	= Total Cover	

% Bare Ground in Herb Stratum 100% *

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 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.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Redwood duff and litter

SOIL

Sampling Point: TP3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	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

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:

In redwood grove - duff ~1" above soil surface, Dry soils
Fill - Not redox

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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): none

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

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

Well drained gully, with mature redwood trees, Dry soils inspite 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: Le poil - Candy mtn complex 2-15% slopes NWI classification: none

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

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

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

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

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

Remarks:
* fill from adjacent slope has likely obscured wetland hydrology
* Sequoia sempervirens cover not recorded as they represent upland slope conditions adj.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	65	✓	FAC
2.			
3.			
4.			
	65 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus ursinus	4	✓	FACU
2. Rubus armeniacus	4	✓	FAC
3.			
4.			
5.			
	8 = Total Cover		4/16
Herb Stratum (Plot size: 5ft)			
1. Tolmiea menziesii	20	✓	FAC
2. Lysichiton americanus	25	✓	OBL
3. Athyrium filix-femina var. cyclosorum	7		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	52 = Total Cover		25/10.4
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 48% * 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 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.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
* litter

SOIL

Sampling Point: TP4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	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

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- X 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

* 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)

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

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): 18"

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): 14"

Wetland Hydrology Present? Yes X No ___

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

Remarks:

- Bottom horizon reacted positive to AAD.
- Fill from adjacent hillslope has obscured wetland conditions. Wetland hydrology immediately adjacent.

SHN 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 5

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 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 X	No ____	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
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
1. Alnus rubra	20	✓	FAC
2. Sequoia sempervirens	60	✓	NL
3.			
4.			
	80 = Total Cover		40%
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus ursinus	4	✓	FACU
2. Lonicera involucrata var. ledebourii	15	✓	FAC
3.			
4.			
5.			
	19 = Total Cover		9.5 / 3.8
Herb Stratum (Plot size: 5ft)			
1. Tolmeia Menziesii	60	✓	FAC
2. Stachys ajugoides	1		OBL
3. Polystichum dudnitum	15		FACU
4. Athyrium filix-femina var. cyclosorum	17		FAC
5. Allium triquetrum	1		NL
6.			
7.			
8.			
9.			
10.			
11.			
	94 = Total Cover		47 / 18.8
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 10 *

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)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- X 2 - Dominance Test is >50%
- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ____ 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.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
*Litter and debris

SOIL

Sampling Point: TP 5

SHN Consulting Engineers & Geologists, Inc.

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/1	100					SiL	
5-24	10YR 4/1	65					SCL	Large asphalt chunks + charcoal
	10YR 6/8	35						mixed fill

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Mixed fill from adjacent slope. No redox features

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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) N
- ___ 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? (includes capillary fringe) Yes _____ No X Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Dry well drained fill slope.

SHN 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 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: 40.791867° 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 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 X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: TP excavated upslope from wetland (9'3" from TP7). Carex obnupta dominant and is a transitional location, however no hydrology

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	70	✓	FAC
2. Sequoia sempervirens	20	✓	NL
3.			
4.			
	90 = Total Cover		45/18
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Sambucus racemosa	2		FACU
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Carex obnupta	50	✓	OBL
2. Athyrium filix-femina var. cyclosorum	40	✓	FAC
3. Polystichum munitum	15		FACU
4. Athyrium filix-femina var. cyclosorum	3		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	108 = Total Cover		54/216
Woody Vine Stratum (Plot size: 5ft)			
1. Hedera helix	2		FACU
2.			
	2 = Total Cover		

% Bare Ground in Herb Stratum 5%*

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 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.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

* Litter

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

SOIL

Sampling Point: TP6

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

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

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- X 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)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

Native soils present

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

On slope above wetland. Well drained.

SHN 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 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: Lepoil-Candy mtn 2-15% slopes NWI classification: none

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

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

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

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

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

Remarks: 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
1. Alnus rubra	95	✓	FAC
2.			
3.			
4.			
	95	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Sambucus racemosa	10	✓	FACU
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Lysichiton americanus	5		OBL
2. Carex obnupta	50	✓	OBL
3. Struthiopteris spicant	18	✓	FAC
4. Athyrium filix-femina var. cyclosorum	15		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	88	= Total Cover	44/17.6
Woody Vine Stratum (Plot size: 5ft)			
1. Hedera helix	2		FACU
2.			
	2	= Total Cover	

% Bare Ground in Herb Stratum 30 *

Remarks: *Bare Mineral soil + Litter*

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- X 2 - Dominance Test is >50%
- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 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.

Hydrophytic Vegetation Present? Yes X No ____

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SOIL

Sampling Point: TP7

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 2/1	100					CL	Native Soils
11-24	2.5Y 3/1	80	10YR 4/6	20	C	M	LS	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- X 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)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

* 11-24 AAD reaction at 11-12" Variable transition between H1 and H2.

A12 → between 2.5 and 3, very close.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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) N
- ___ 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 X No ___ Depth (inches): 9in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 7in

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

Base of slope, saturated. flowing surface water approx. 5 ft west of TP.

SHN 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 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: Lepoil-Candy mtn complex 2-15% 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 X	
Hydric Soil Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X* No ____
Wetland Hydrology Present?	Yes X	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
1. Sequoia sempervirens	50		NL
2.			
3.			
4.			
	50 = Total Cover		

Not rep. of localized seep. Reflects upland slope.

Sapling/Shrub Stratum (Plot size: 5ft)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5ft)			
1. Athyrium filix-femina var. cyclosorum	30	✓	FAC
2. Polystichum munitum	30	✓	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		

Woody Vine Stratum (Plot size: 5ft)			
1. Hedera helix	2		FACU
2.			
	2 = Total Cover		

% Bare Ground in Herb Stratum 80%

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	32	x 4 =	128
UPL species	50	x 5 =	250
Column Totals:	112 (A)		468 (B)

Prevalence Index = B/A = 4.17

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.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
* Duff + Litter.
- Vegetation is problematic. Small wetland seep conditions are extremely localized. Plant dominance influenced by steep upland slopes.
- Only using herbaceous dominance

SOIL

Sampling Point: TP8

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-22	10YR 3/2	75	5YR 3/3	10	C	M	SiL	Native soils
			5YR 3/4	15	C	M		
22-24+	2.5Y 4/2	60	10YR 4/6	40	C	M	LS	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

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

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) N
- ___ 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): 13 in

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

localized seep wetland providing hydrology.

SHN 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 9

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range:

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 X No ____ (If no, explain in Remarks.)

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

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

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

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

Remarks: TP excavated ~ 8ft from TP 8 in seep. Upland conditions, dry + steep.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. Sequoia sempervirens	50	✓	NL
2. Prunus cerasifera	20	✓	NL
3.			
4.			
	70 = Total Cover		35/14
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Sambucus racemosa	2		FACU
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Polystichum munitum	50	✓	FACU
2. Athyrium filix-femina var. cyclosorum	15	✓	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		32.5/13
Woody Vine Stratum (Plot size: 5ft)			
1. Hedera helix	2		FACU
2.			
	2 = Total Cover		

% Bare Ground in Herb Stratum 50*

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 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.

Hydrophytic Vegetation Present? Yes ____ No X

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 Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
~~0-24+~~	~~7.5YR 3/2~~	~~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 3/2	94	2.5YR 4/8	6	C	PL&M	SL	Broken glass present

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

Wetland Hydrology Present? Yes ___ No X

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 Wilslope | 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: Lepoil - Candy mtn complex 2-15% 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 X	**Is the Sampled Area within a Wetland?** Yes X * No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
TP excavated at edge of hillslope seep.
* Vegetation composition does not reflect small, localized seep.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Sequoia sempervirens	40	✓	NL
2. Prunus laurocerasus	50	✓	NL
3. Alnus rubra	25	✓	FAC
4.			
	115	= Total Cover	57.5 / 23

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. Athyrium filix-femina var. cyclosorum	32	✓	FAC
2. Struthiopteris spicant	1		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	33	= Total Cover	

Woody Vine Stratum (Plot size: 5ft)			
1. Hedera helix	15	✓	FACU
2.			
	15	= Total Cover	

% Bare Ground in Herb Stratum 70%*

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	58	x 3 =	174
FACU species	15	x 4 =	60
UPL species	90	x 5 =	450
Column Totals:	163 (A)		684 (B)

Prevalence Index = B/A = 4.20

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.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
* Redwood litter + duff.

SOIL

Sampling Point: TP 10

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

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

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- X 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)**
- X Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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) N
- ___ 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 X No ___ Depth (inches): 5in

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

Wetland Hydrology Present? Yes X 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, a-d

SHN 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 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: WGS84

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 X No _____ (If no, explain in Remarks.)

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

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

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

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

Remarks: TP 11 excavated approx. 63in 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
1. Prunus laurocerasus	50	✓	NL
2. Sequoia sempervirens	60	✓	NL
3.			
4.			
	110 = Total Cover		55/22

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5ft)			
1. Polystichum munitum	23	✓	FACU
2. Athyrium filix-femina var. cyclosorum	30	✓	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	53 = Total Cover		26.5/10.6

Woody Vine Stratum (Plot size: 5ft)			
1. Hedera helix	40	✓	FACU
2.			
	40 = Total Cover		

% Bare Ground in Herb Stratum 47*

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 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.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

* Redwood litter + duff.

SOIL

Sampling Point: TP11

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12.5	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

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:

Edge of wetland. Transitioning to upland.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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) N
- ___ 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? (includes capillary fringe) Yes ____ No X Depth (inches): N/A

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