Wetland and Other Waters Delineation Report Little Lakes Former Industrial Site

City of Arcata
APNs: 503-232-004, 503-232-013, and 503-232-016
Arcata, California

Prepared for:

City of Arcata

August 2024

024041.100

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Abbreviations and Acronyms

Terms of Measurement

Term	Definition	Term	Definition
ac	acre	in/hr	inches per hour
°C	degrees Celsius	mmhos/cm	millimhos per centimeter
°F	degrees Fahrenheit	sq ft	square feet

Additional Terms

Term	Definition	Term	Definition
APN	Assessor's parcel number	NWI	National Wetlands Inventory
APT	Antecedent Precipitation Tool	OBL	obligate-wetland plant species
CCA	California Coastal Act	OHWM	ordinary high water mark
CCC	California Coastal Commission	PDSI	Palmer Drought Severity Index
CCR	California Code of Regulations	PEM1C	Palustrine Emergent Persistent Seasonally Flooded
CDC	California Department of Conservation	PSS	Palustrine Scrub-shrub
CDFW	California Department of Fish and Wildlife	PSS1A	Palustrine Scrub-shrub Broadleaved Deciduous Temporarily Flooded
CDP	California Development Permit	PSS1C	Palustrine Scrub-shrub Broadleaved Deciduous Seasonally Flooded
CF	Coastal Feature	R3UBF	Riverine Upper Perennial Unconsolidated Bottom Semi-permanently Flooded
CFGC	California Fish and Game Code	R4SBC	Riverine Intermittent Seasonally Flooded Streambed
CFR	Code of Federal Regulations	RWQCB	Regional Water Quality Control Board
CNPS	California Native Plant Society	SCP	site cleanup plan
CWA	Clean Water Act	SWRCB	State Water Resources Control Board
ESHA	Environmentally Sensitive Habitat Area	TNW	Traditional Navigable Waterway
EZUSZN	Estuarine Intertidal Unconsolidated Shore Sand Regularly Flooded	TP	test pit
FAC	facultative plant species	UPL	upland plant species
FACU	facultative-upland plant species	USACE	U.S. Army Corps of Engineers
FACW	facultative-wetland plant species	USDA	U.S. Department of Agriculture
GPS	Global Positioning System	USFWS	U.S. Fish and Wildlife Service
Ksat	most limiting layer to transmit water	USGS	U.S. Geological Survey
LCP	Local Coastal Program	WebWIMP	Web-based Water-Budget Interactive Modeling Program
LSA	Lake or Streambed Alteration	WETS	Climate Analysis for Wetlands Tables
NADM	North American Drought Monitor	WMVC	Western Mountains, Valley, and Coast
NDMC	National Drought Mitigation Center		
NL	not listed-wetland plant status		
NOAA	National Oceanic and Atmospheric Administration		
NRCS	Natural Resources Conservation Service		

1.0 Introduction

SHN has prepared this Wetland and Other Waters Delineation Report for the City of Arcata within portions of Assessor's parcel numbers (APNs) 503-232-004, 503-232-013, and 503-232-016 in Arcata, California (Appendix 1, Figure 1). Fieldwork was performed under the direction of an SHN soil scientist, with an MS in soil science, and an SHN wetland ecologist, with an MS in biology, with over 20 years of combined wetland and other waters delineation experience.

1.1 Purpose

The purpose of this wetland and other waters delineation is to identify wetlands and other waters as defined by the United States Army Corps of Engineers (USACE), State of California State Water Board, California Fish and Game Code, California Coastal Act (CCA), and City of Arcata to determine their extent and composition across the study area. The results of this report can be used in planning for future development opportunities and permitting of any future project.

1.2 Study Area

The study area (project site) includes the entirety of the three APNs, 503-232-004, 503-232-013, and 503-232-016 within the City of Arcata and is situated adjacent to the Arcata Marsh and Wildlife Sanctuary (Appendix 1, Figure 1). The site is within the U.S. Geological Survey (USGS) Arcata South 7.5-minute quadrangle, with a center point at latitude 40.863126° and longitude -124.090452° (Google Earth, 2024). The study area covers 11.6 acres (ac), which are currently vacant and consist of a highly manipulated former industrial site (Appendix 2, Photos 1 and 2) with some ongoing storage and light use.

2.0 Project Description

This wetland delineation has been completed to determine what wetland resources occur within the subject parcels, which can be used to inform future project planning and potential site development. This includes implementation of a site cleanup plan (SCP) for remediation activities at the site. The SCP proposes soil excavation in the northwestern portion of the site in an area that extends for approximately 170 feet along "I" Street and is approximately 30 feet in width at its widest point (SHN, 2020). Additionally, the results from this wetland delineation can be used in permitting any future project, provided permitting is completed within the five-year life span of the results of this study.

3.0 Environmental Setting

3.1 Site Uses

The study area has an average elevation of 12 feet above sea level. A review of historical photos shows that this site had been an industrial lumber mill prior to 1989 (Google Earth, 2024). Buildings and other industrial structures have been removed, although several concrete pads and extremely compacted gravelly areas remain. This site is now used primarily for soils and building materials storage, and large portions have become vegetated where there has been minimal use or large-scale disturbance.

3.2 Site Hydrology

The average 30-year precipitation data (1991-2020) for this area is 40.33 inches (National Oceanic and

Atmospheric Administration [NOAA] Eureka Station, 2024) with most of the precipitation occurring between October and April. Temperatures in the Humboldt Bay area range from an average low of 41 degrees Fahrenheit (°F) in the winter to an average high of 64°F in the summer; extremes in temperatures are relatively uncommon due to the regional maritime influence.

Wetland indicator conditions can be affected by the current hydrology patterns at the time of delineation. Extremely wet or dry conditions are taken into consideration when performing a wetland review, and procedures are performed differently if the current climate is above or below average from the historical climate. To compare current climate with historical, the USACE created the Antecedent Precipitation Tool (APT) website, which automatically calculates current climate data and compares it to historical norms (USACE, 2023). Nearby 2024 climate data is analyzed for the previous three months prior to the test pit (TP) investigations and compared to the prior 30-year rainfall average for the same months. If the current rainfall of each month is between 30% and 70% of the most current 30-year 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 TP investigations occurred on March 20 and 21; April 1,9,10, and 11; and May 23 and 29. The APT data indicates that the test pit excavations performed during the March and April months were performed in an "wetter than normal" rainfall period, while the test pit excavations performed in later May were performed in a "normal" rainfall period (Table 1; Appendix 3).

The Palmer Drought Severity Index (PDSI) and the Web-based Water-Budget Interactive Modeling Program (WebWIMP) are included with the APT analysis (Appendix 3). It is an indicator of temperature and precipitation data that helps predict droughts. The 2024 spring season experienced Mild Wetness during the time of the delineation fieldwork (Table 1). The WebWIMP also considers the ratio of potential evapotranspiration versus precipitation. When precipitation is greater than potential evapotranspiration, it is considered a "Wet Season" and if not, it's a "Dry Season". The wetland delineation fieldwork was conducted primarily during the wet season, with two days of fieldwork in May in the dry season (Table 1). Drought and evapotranspiration conditions are also considered when analyzing wetland indicators.

Table 1. WETS Rainfall Data, March, April, and May 2024, Hydrological Analysis Eureka, Humboldt County, California

Excavation Date	Product Value[a]	WETS Condition	PDSI	WebWIMP
3/20/24	15	Wetter Than Normal	Mild Wetness	Wet Season
3/21/24	15	Wetter Than Normal	Mild Wetness	Wet Season
4/01/24	15	Wetter Than Normal	Mild Wetness	Wet Season
4/09/24	15	Wetter Than Normal	Mild Wetness	Wet Season
4/10/24	15	Wetter Than Normal	Mild Wetness	Wet Season
4/11/24	15	Wetter Than Normal	Mild Wetness	Wet Season
5/23/24	14	Normal Conditions	Mild Wetness	Dry Season
5/29/24	14	Normal Conditions	Mild Wetness	Dry Season

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.
Source: USACE, 2023

3.3 National Wetlands Inventory

The National Wetlands Inventory (NWI) provides geospatial data on wetlands and deepwater habitats in the U.S. with the Wetlands Mapper tool (United States Fish and Wildlife Service [USFWS], 2024). The maps are prepared from the analysis of aerial imagery, with wetlands identified based on vegetation, visible hydrology, and geography. A margin of error is inherent in the use of imagery. It cannot be used to delineate wetlands or non-wetland waters but can provide useful background information on features potentially within the vicinity.

Wetland habitats identified by the NWI are depicted in Appendix 3 and include Palustrine Emergent Persistent Seasonally Flooded habitat (PEM1C), Estuarine Intertidal Unconsolidated Shore Sand Regularly Flooded habitat (E2US2N), and Riverine Upper Perennial Unconsolidated Bottom Semi-permanently Flooded habitat (R3UBF). In addition, Fresh Water Ponds and Lacustrine habitats exist southwest of the study area as part of the City of Arcata's Marsh and Wildlife Sanctuary, adjacent to Humboldt Bay.

3.4 Vegetation

The study area is dominated by invasive and non-native grasses and forbs covering compacted and graveled areas. Dominant species included: Himalayan blackberry (*Rubus armeniacus*), sweet vernal grass (*Anthoxanthum odoratum),* wild oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), tall fescue (*Festuca arundinacea*), barley (*Hordeum marinum* ssp. *gussoneanum*), and velvet grass (*Holcus lanatus*), among others. Himalayan blackberry thickets and small stands of native willow species (*Salix hookeriana, Salix lasiandra* var*. lasiandra*, *Salix scouleriana,* and *Salix sitchensis*) usually are confined to old drainage features or depressions. Native vegetation typical of brackish marshes along Humboldt Bay occur along the Jolly Giant Creek/Butcher Slough flood plain. This included Lyngbye's sedge (*Carex lyngbyei*), coastal tufted hairgrass (*Deschampsia caespitosa* ssp. *holciformes*), saltmarsh bulrush (*Bulboschoenus maritimus* ssp. *paludosus*), saltgrass (*Distichlis spicata*), marsh jaumea (*Jaumea carnosa*), seaside arrowgrass (*Triglochin maritima*), and Humboldt Bay owl's clover (*Castilleja ambigua* ssp. *humboldtiensis*). See Appendix 2 photographs for representative vegetation composition within the study area.

4.0 Geologic and Soil Composition

The geology at the site is mapped as marine and non-marine sedimentary rocks (geologic map unit Q), which consists of alluvium, lake, playa, and terrace deposits–unconsolidated and semi-consolidated. Proximity to the coast indicates these are likely uplifted marine deposits (California Department of Conservation [CDC], 2024).

The underlying soils in the study area have the USDA-NRCS soil map unit designation 127—Jollygiant, 0 to 2 percent slopes and soil map unit designation 140 – Occidental, 0 to 2 percent slopes as described in Table 2 (full report in Appendix 3). Industrial fill has been placed across nearly the entire study area, comprised of gravel, cobbles, and other mixed soil types. The site-specific soil description at each soil TP is included in the wetland determination data forms found in Appendix 4.

Table 2. Soil Map Units in the Study Area
Arcata, Humboldt County, California

Soil Map Unit	Map Symbol	Textural Class	Drainage Class	Landform	Hydric Criteria	% of Study Area
140	Occidental, 0-2% slopes	Halfbluff: fine sandy loam to loamy sand Tepona: loam to sandy loam	Very poorly drained	Salt marshes	Yes	94.7
127	Jollygiant, 0-2% slopes	Halfbluff: loam to fine sand Tepona: sandy loam to loamy fine sand	Somewhat poorly drained	Stream terrace	No	0.1
W	Water	N/A	N/A	Water body	N/A	5.2

Source: USDA-NRCS, 2024a

5.0 Methods

5.1 Delineation Methods

The methods used to delineate potentially jurisdictional waters and wetlands in the study area were based on the following guidance documents:

- *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987)
- *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* (USACE, 2014)
- *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast (WMVC) Region* (USACE, 2010)
- *USACE Regulatory Guidance Letter No. 05-05* (USACE, 2005)
- *State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Resources Control Board [SWRCB], 2021)
- California Coastal Commission's (CCC) *Definition and Delineation of Wetlands in the Coastal Zone* (CCC, 2011)
- California Coastal Commission's Wetland Workshop Presentation: Technical Wetland Delineation Overview. (California Coastal Commission, 2016)
- U.S. Department of Agriculture, Natural Resources Conservation Service: Indicators of Hydric Soils (USDA-NRCS 2018)
- The National Wetland Plant List: 2022 Wetland Ratings (USACE, 2022)

- *Updated Map and Drawing Standards for the South Pacific Regulatory Program* (USACE, South Pacific Division, 2016)
- California Native Plant Society's (CNPS) *Vegetation Rapid Assessment Protocol* (CNPS, 2007)
- California Department of Fish and Wildlife's (CDFW) and CNPS's *Protocol for the Combined Vegetation Rapid Assessment and Relevé Field Form* (CDFW and CNPS, 2019)

5.2 Data Sources

The following spatial data and literature were reviewed to determine the presence of potentially jurisdictional aquatic resources:

- Google Earth aerial imagery (Google Earth, 2024)
- City of Arcata GIS (City of Arcata, 2024)
- NWI data from the U.S. Fish and Wildlife Service (USFWS, 2024; Appendix 3)
- NRCS soil survey (USDA-NRCS, 2024a; Appendix 3)

5.3 Regulatory Framework

Wetland delineators conducted aquatic-resources delineation field surveys according to current federal, state, and local guidelines to identify and map potential waters of the state and determine the extent of regulatory jurisdiction for the USACE, Regional Water Quality Control Board (RWQCB), CDFW, CCA, and City of Arcata.

USACE jurisdiction includes all areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, provided they are adjacent to a Traditional Navigable Water (TNW). Wetlands generally include swamps, marshes, bogs, and similar areas (33 Code of Federal Regulations [CFR] Chapter II § 328.3). USACE jurisdiction also includes non-wetland waters, which includes ephemeral, intermittent, or perennial waterways and other waterbodies (lakes, ponds, and impoundments of jurisdictional waters) with a defined bed and bank, such as drainages, ditches, creeks, rivers, and lakes.

RWQCB jurisdiction includes all aquatic features under federal jurisdiction, including ephemeral, intermittent, and perennial streams as determined using OHWM indicators and three-parameter wetlands. In addition to federal aquatic resources, Clean Water Act (CWA) Section 401 jurisdiction also includes isolated wetlands, riparian vegetation, isolated seeps and springs, and human-induced wetlands with natural conditions present.

CDFW-jurisdictional limits are usually delineated by the top of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. CDFW jurisdiction also includes wetlands that are connected to and immediately adjacent to any stream or lake.

CCA jurisdiction includes all wetlands, waters, and streams. The CCA also takes jurisdiction of riparian habitat associated with aquatic resources, which are considered non-wetland Environmentally Sensitive Habitat Areas (ESHA). CCA jurisdiction includes aquatic features that have less than three wetland parameters present.

The City of Arcata utilizes a two-parameter wetland definition similar to the CCA, and includes all coastal features, wetlands, waters, and streams mapped as CCA jurisdictional with the exception of locations with less than two parameters, or locations without wetland hydrology.

5.3.1 Federal Wetlands and Waters

This section contains a summary of the Federal laws defining and regulating wetlands occurring within the study area.

In summary, for regulatory purposes, wetlands are defined as:

> "Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas". (33 Code of Federal Regulations Chapter II § 328.3)

In order to qualify as jurisdictional waters of the U.S., a wetland must be "adjacent" to a TNW. The regulations define "adjacent" means "having a continuous surface connection" (33 CFR § 328.3(c) and 40 CFR §120.2).

In addition to being adjacent, wetlands under USACE jurisdiction must contain all three wetland parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. Wetlands with all three parameters are referred to as three-parameter wetlands. These wetlands must exhibit the following field indicators:

- A prevalence of hydrophytic vegetation (such as, "water loving" species with "obligate," "facultative wetland," or "facultative" wetland indicator status [USACE, 2021);

  Plant wetland indicator statuses from The National Wetland Plant List: 2022 Update of Wetland Ratings (USACE, 2022) are abbreviated as follows:

  - OBL = Obligate wetland plants. Almost always occur in wetlands.
  - FACW = Facultative wetland plants. Usually occur in wetlands but may occur in non-wetlands.
  - FAC = Facultative plants. Occur in wetlands and non-wetlands.
  - FACU = Facultative upland plants. Usually occur in non-wetlands but may occur in wetlands.
  - UPL = Obligate upland plants. Almost never occur in wetlands.

  For species not listed in the National Wetland Plant List, two dashes (--) are used in the text and tables of the report to indicate their absence in the list. These species can be assumed to be upland species. In order to complete calculations, the wetland determination data forms use UPL for these species.

- Hydric soils (such as, hydric soils listed by the NRCS and unclassified soils that are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part; USDA-NRCS, 2018).

- Wetland hydrology (evidence that episodes of inundation or soil saturation lasting more than a few days during the growing season have occurred repeatedly over a period of years and that the timing, duration, and frequency of wet conditions have been sufficient to produce a characteristic wetland plant community and hydric soil morphology).

In the WMVC Region, growing season dates are determined through onsite observations of the following indicators of biological activity in a given year: (1) aboveground growth and development of vascular plants, and/or (2) soil temperatures. Season dates may be approximated by using tables available from NRCS National Water and Climate Center (NOAA, 2024) to determine the median dates of 28°F (-2.2 degrees Celsius [°C]) air temperatures in spring and fall, based on long-term records gathered at the nearest appropriate National Weather Service meteorological station (USDA-NRCS, 2024b). In coastal Northern California, the growing season is year-round as a result of the maritime moderation of temperature.

5.3.1.2 Non-Wetland Waters of the U.S.

Non-wetland waters of the U.S., as described in this report, refer to ephemeral, intermittent, or perennial waterways and other waterbodies (lakes, ponds, and impoundments of jurisdictional waters) with a defined bed and bank, such as drainages, ditches, creeks, rivers, and lakes. This approximately translates to the bank-to-bank portion of waterbodies, up to the OHWM. Non-wetland waters of the U.S. may lack hydrophytic vegetation or evidence of hydric soils.

5.3.2 Clean Water Act Section 401 and Porter-Cologne Water Quality Control Act

The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Under CWA Section 401, any project requiring a federal license or permit that may result in a discharge to a water of the United States must obtain a 401 Certification, which verifies that the project will be in compliance with State water-quality standards. These certifications are obtained from the appropriate RWQCB (Water Board).

According to Section II of *California's State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*[1], the Water Boards define an area as *wetlands* as follows:

> An area is wetland if, under normal circumstances,
>
> 1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;
> 2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and
> 3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

[1] The California Water Board's State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State was adopted April 2, 2019, and revised April 6, 2021.

Waters of the state are defined broadly in the Porter-Cologne Water Quality Control Act and include:

> … "any surface water or groundwater, including saline waters, within the boundaries of the state." "Waters of the state" includes all "waters of the U.S." The following wetlands are waters of the state:
>
> 1) Natural wetlands;
> 2) Wetlands created by modification of a surface water of the state; and
> 3) Artificial wetlands.

Because the RWQCB accepts the USACE definition of wetlands, delineations from a final, USACE-verified aquatic-resource report can be used to determine the extent of wetlands and waters of the State, however the RWQCB wetland definition includes isolated wetlands and artificial wetlands, which likely have a greater extent than those shown on a USACE-verified aquatic-resource report. Any wetlands or other waters that were not federally jurisdictional were delineated using the same methods used to delineate Federal wetlands and other waters.

Wetlands and Waters of the U.S. have been delineated as part of this report and are shown in Appendix 1 on Figures 2 and 3. Figure 2 shows all state and federal wetland and other waters occurring within the study area, including three-parameter wetlands with and without connectivity to a TNW, estuarine wetlands, streams, California Coastal Act features with one or two wetland parameters, and City of Arcata aquatic features. Appendix 1, Figure 3 shows only federal three-parameter wetlands that have a continuous surface connection to a TNW.

This report groups waters of the state regulated under CWA Section 401 and Porter-Cologne Water Quality Control Act and refers to the group as *CWA Section 401 resources*.

5.3.3 California Fish and Game Code Sections 1600–1607

Under California Fish and Game Code (CFGC) Sections 1600–1607, CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes by issuing Lake or Streambed Alteration (LSA) Agreements. CDFW-jurisdictional limits are usually delineated by the top of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Waters under USACE jurisdiction may or may not be included in the area covered by an LSA. Additionally, marine intertidal areas are not jurisdictional under CFGC Sections 1600–1607. Within the study area, this includes all streams (such as, perennial, intermittent, and ephemeral) and all the area from the OHWM to the top of bank along each stream, all wetlands connected to and immediately adjacent to the streams, including seeps/springs, and all riparian habitat areas to their outer edges.

5.3.4 California Coastal Act

The CCA of 1976 established the CCC to protect the coastline of California; policies include the protection, enhancement, and restoration of natural resources. The CCA also delegates to local governments the power to enact and implement their own local coastal programs (LCPs) on formal certification by the CCC. Any development within the Coastal Zone requires a coastal development permit (CDP) from either the CCC or the local government if an LCP is in place.

Wetlands, coastal waters, and streams are protected by the CCA (see §§ 30230–30233). The CCC also takes jurisdiction of riparian habitat associated with aquatic resources.

The CCA definition of wetlands differs from other agencies, such as the USACE. CCA Section 30121 defines wetlands as "lands within the Coastal Zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens."

Furthermore, California Code of Regulations (CCR) Section 13577(b) provides additional guidance regarding the definition of a wetland:

> "Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deepwater habitats." (CCR Section 13577(b))

The protocols developed by the USACE are used to delineate wetlands for the CCC. There are situations where one or more of the wetland parameters may be missing. In these circumstances, the area needs to be closely examined to determine if and why indicators are missing, and if the area is functioning as a wetland with evidence of wetland hydrology under normal circumstances.

The City of Arcata Local Coastal Element (Draft) includes the study area (City of Arcata, 2022). Under this plan the following are considered sensitive habitats:

1. Rivers, creeks, sloughs, and associated riparian habitats such as: Jacoby Creek; Beith Creek; Grotzman Creek; Campbell Creek; Jolly Giant Creek; Janes Creek; Fickle Hill Creek; North Jacoby Creek; Washington Gulch; Gannon Slough; Butcher Slough; and McDaniel Slough.
2. Wetlands, estuaries, and associated riparian habitats such as: Arcata Bay; Mad River Slough; Liscom Slough; Butcher Slough; and the Arcata Marsh and Wildlife Sanctuary.
3. Other unique habitat areas such as water bird rookeries; shorebird concentration sites; habitat for all rare, threatened or endangered fully protected, and special concern plant and animal species and natural communities on federal or state lists; and plant species appearing on the California Native Plant Society List "1b" and "2" lists.
4. Any areas not specifically designated in the Local Coastal Program that meet the definition of ESHA in Section 30107.5 of the Coastal Act shall be accorded all the protections provided for ESHA in the Local Coastal Program

5.3.5 City of Arcata

The City of Arcata (including areas outside of the coastal zone) utilizes a two-parameter wetland definition that requires wetland hydrology and hydric soil development or hydrophytic vegetation dominance. The City of Arcata Municipal Code Glossary of terms defines wetlands as:

> "An area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are lands where the water table is at, or near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent or drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salt or other substances in the substrate. These wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep water habitats." (City of Arcata, 2022)

The protocols developed by the USACE are used to delineate wetlands for the City of Arcata. There are situations where one of the wetland parameters may be missing. In these circumstances, the area needs to be closely examined to determine if and why indicators are missing, and if the area is functioning as a wetland with evidence of wetland hydrology under normal circumstances.

5.4 Delineation Fieldwork

The following subsections discuss the methods and equipment used to perform the wetland delineation fieldwork, wetland delineation personnel and dates, and delineation fieldwork limitations.

5.4.1 Delineation Field work Methods

Surveyors conducted pre-delineation investigations by walking transects across the entire study area, where accessible. Areas with hydrophytic vegetation dominance or suspected hydrology were noted and recorded using a resource-grade global positioning system (GPS) Trimble DA2 antennae, with a Samsung tablet interface with sub-meter accuracy. Locations with potential wetland conditions documented during the pre-delineation surveys were revisited and delineated using current Federal and state guidelines to identify and map potential wetlands and waters of the state to determine the extent of regulatory jurisdiction for the USACE, RWQCB, CDFW, and CCC.

Paired datapoints were taken in all potential wetland areas with one point documenting wetland conditions and another documenting surrounding upland to establish the edge of wetlands and characteristics at the wetland edge. Data was collected to complete wetland determination data forms, documenting the presence or absence of the three wetland parameters: hydrophytic vegetation, hydric soil, and wetland hydrology. These forms provide the data and interpretation rationale that was used in determining the boundaries of agency jurisdiction and can be found in Appendix 4.

Delineators took photographs of all features mapped (aquatic resources and soil pits). Representative photographs of aquatic resources in the study area are included in Appendix 2. Where accessible and when GPS accuracy allowed, aquatic features, wetland boundaries, sampling points, and culvert locations were mapped using a sub-meter GPS unit. Wetlands were not mapped below the OHWM, these areas were mapped as other waters as described in Section 5.4.2. All potential waters of the U.S. were classified using the Cowardin classification system (Federal Geographic Data Committee, 2013). The features lacking three wetland parameters did not meet the classifications of the Cowardin system.

5.4.2 Ordinary High Water Mark Methods

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)." (USACE, 2014)

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

5.4.3 Delineation Personnel and Dates

SHN senior botanist/wetland ecologist Joseph Saler (MS biology, focus in wetland ecology), senior soil scientist Cindy Wilcox (MS Soil Science), and Joanna Berg (BS Rangeland Resource Sciences/ Wildland soils) conducted the wetland delineation fieldwork in the study area between March 20 and May 29, 2024.

5.4.4 Delineation Field work Limitations

This study area has a long history of human disturbance, including use as an industrial lumber mill, which has resulted in disturbed soils and fill placement. We have assumed normal circumstances across most of the site, meaning that the area has had enough time to readjust to its new hydrologic conditions such that hydric soils, hydrology, and hydrophytic vegetation would reflect wetland conditions with indicators present.

6.0 Discussion and Results

Sixteen three-parameter wetlands occur within the study area, ranging from small wetlands found in isolated depressions, to a large wetland complex confined to the flood plain of Jolly Giant Creek/ Butcher Slough. Of these, five are federally jurisdictional features with a continuous surface connection to a TNW. One stream occurs in the study area (Jolly Giant Creek/Butcher Slough), which flows along the eastern and southern edge of the study area and into Humboldt Bay, a TNW. Additionally, 14 coastal features occur within the study area. All aquatic features occurring within the study area are shown on Table 3, including area and preliminary jurisdiction, and in Appendix 1, Figure 2, and will be referred to during the body of this discussion. Figure 3 in Appendix 1 only depicts federally-jurisdictional three-parameter wetlands with a continuous surface connection to a TNW.

The following discussion provides a description of the aquatic resources delineated within the study area, as well as a preliminary determination of jurisdiction. These results and the mapped extent of delineated features are depicted on the maps in Appendix 1. Figures 2 and 3 are subject to verification by the regulatory agencies.

6.1 Wetlands

Sixteen three-parameter wetlands occur within the study area for a total area of 119,821 square feet (sq ft or 2.751 ac). Not all these features are USACE-jurisdictional or 1600-1607-jurisdictional; however, all three-parameter features within the study area are Section 401-jurisdictional, CCA-jurisdictional, and are City of Arcata features as shown on Table 3. Wetlands 3A, 3B, 4, 11, 15, and 16 are federally-jurisdictional wetlands for a total area of 110,365 sq ft (2.304 ac) and have continuous surface connection to a TNW (Humboldt Bay) via Jolly Giant Creek/Butcher Slough (Appendix 1, Figure 3). Wetland 3A and Wetland 4 are 1600-1607-jurisdictional wetlands for a total area of 20,222 sq ft (0.464 ac). Nearly all of the three-parameter wetlands occurring within the study area are artificially-induced, following the demolition of industrial infrastructure and subsequent disuse of the site. Three-parameter wetlands found in the study area have mostly formed in remnant drainage swales from former industrial activity, or depressions in former compacted roadways that now collect enough stormwater to support three-parameter wetlands. Wetlands 3A and 3B are one restored naturally-occurring wetland that is separated by their Cowardin classifications with Palustrine Emergent conditions in the northern upstream portion and Estuarine tidally-influenced conditions in the central and southern portions of the wetland where the salinity affects the vegetation. The three-parameter wetlands within the study area are described below by Cowardin classification, including general conditions, area, jurisdiction, and supporting test pit data. Figure 2 in Appendix 1 shows wetland areas, and representative photographs of the various wetlands are presented in Appendix 2.

Fifty-one (51) TPs plus additional exploratory pits were excavated either by hand or with the aid of an excavator from March through May 2024 (Appendix 1, Figure 2), to determine wetland boundaries, wetland characteristics, and wetland conditions. Data at each TP was recorded for soils, vegetation, and hydrology on USACE Wetland Determination Data Forms and are included in Appendix 4 and summarized in Table 4. The OHWM Delineation Cover Sheet was used to describe vegetation, soils, cross section, and general conditions within Jolly Giant Creek/Butcher Slough. The OHWM Delineation Data Sheet is included in Appendix 4.

6.1.1 Palustrine Wetlands

Three Palustrine wetland types occur within the study area including Palustrine Emergent Wetlands, Palustrine Scrub-shrub Wetlands, and Palustrine Forested Wetlands. These wetlands are described by Cowardin classification below.

6.1.1.1 Palustrine Emergent Wetlands

Palustrine Emergent wetlands are characterized by a well-developed herbaceous stratum and minimal tree or shrub cover. Nine Palustrine Emergent three-parameter wetlands occur within the study area (Wetlands 1, 2, 6, 8, 11, 12, 14, 15 and 16) with a total area of 13,773 square feet (0.316 ac). These wetlands are all small- to medium-sized distinct features, ranging in size from 661 to 3,108 square feet and all have a history of human disturbance, resulting in herbaceous-dominated wetland conditions. Specifically, all Palustrine Emergent wetlands occur in depressions or former drainage swales resulting from past industrial development and subsequent demolition, or from placement of spoil piles that have caused stormwater to pool. Compacted soils, ongoing disturbance, and transitory wetland hydrology appear to limit the growth of woody vegetation. Four of the nine Palustrine Emergent wetlands occur in the northwest portion of the study area adjacent to South I Street in geomorphic low points, and the other five occur in the southeast portion of the study area near Jolly Giant Creek/Butcher Slough (Figure 2). All nine Palustrine Emergent wetlands are temporarily flooded, seasonal, stormwater-dependent features, reflecting their human-induced conditions.

All nine Palustrine Emergent wetlands are Section 401 and CCA-jurisdictional and meet the City of Arcata's wetland definition; however, six of these wetlands are isolated features with no connectivity to a TNW. Three of the Palustrine Emergent wetlands have a continuous surface connection to a TNW: Wetland 11, 15, and 16, for a total of 5,466 sq ft (0.125 ac) and these are considered federally jurisdictional wetlands as shown on Figure 3. None of the Palustrine Emergent wetlands are 1600-1607-jurisdictional. See Table 3 for a preliminary determination of jurisdiction as well as jurisdictional area in square feet and acreage and Cowardin classification.

Dominant species included creeping bentgrass (*Agrostis stolonifera*), water parsley (*Oenanthe sarmentosa*), and pennyroyal (*Mentha pulegium*), with lesser dominance by Himalayan blackberry, common lamprush (*Juncus effusus* ssp. *pacificus*), low bulrush (*Isolepis cernua*), and tall fescue, among others. Dominant hydric soil indicators included redox dark surface, depleted below a dark surface, and a depleted matrix. Soil composition reflects the past use of the site and placement of fill over native alluvial soils for industrial development. In most sites, soils consisted of loam of varied depth over a compacted gravelly sandy loam over cobbly gravel over a native clay loam with varied depths for each horizon. All Palustrine Emergent wetlands were perched on top of compacted fill soils and the most common wetland hydrology indicators included a mix of two secondary indicators, typically a geomorphic position, water-stained leaves, or a plant community meeting the FAC-neutral test and to a lesser extent primary indicators of an algal mat or water staining.

All field data with details for each Palustrine Emergent wetland is included in Appendix 4 and is summarized in Table 4. Photographs 3-5 in Appendix 2 are representative of the Palustrine Emergent wetlands observed in the study area.

6.1.1.2 Palustrine Scrub-shrub Wetlands (PSS)

Palustrine Scrub-shrub wetlands are characterized by a shrub overstory without appreciable tree cover. The shrub stratum is generally very dense, and the herbaceous stratum may or may not be prominent.

One Palustrine Scrub-shrub (PSS) wetland occurs within the study area (Wetland 10), with an area of 1,070 sq ft (0.025 ac). This wetland is Section 401, CCA-jurisdictional, and meets the City of Arcata's wetland definition, but is isolated without a continuous surface connection to a TNW and is not federally jurisdictional. A raised upland area separates Wetland 10 from connectivity to Janes Creek/Butcher Slough. This wetland is within a relic drainage swale remaining from prior industrial development, which accumulates enough stormwater input and is of a sufficient depth to retain a water table and pool water for a longer duration during the wet season. The wetland is dominated by low-growing coastal willow (*Salix hookeriana)* that has not developed the height and width needed to support Palustrine Forested wetland habitat (Appendix 2, Photograph 6). The understory dominant is coast rush (*Juncus hesperius*) along the perimeter of the wetland; however, large portions of the wetland have a sparsely vegetated concave surface where water pools for a longer duration at a greater depth, restricting herbaceous species growth. Duff and loam have accumulated within the wetland, supporting deeper root growth, and no gravelly or cobbly fill was encountered within 17 inches of the soil surface. Hydric soil indicators observed included hydrogen sulfide smell, reaction to alpha-alpha dipyridyl, and Redox Dark Surface. Prominent wetland hydrology was observed, including the primary indicators of a high water table, saturation to the soil surface, water marks, a sparsely vegetated concave surface, and hydrogen sulfide odor, in addition to the secondary indicators of water stained leaves, drainage patterns, a geomorphic position, and a vegetation community that meets the FAC-neutral test. See Table 3 for a preliminary determination of jurisdiction as well as jurisdictional area in square feet and acreage and Cowardin classification.

Wetland 9 has connectivity to Wetland 10 during storm events where stormwater flows over a concrete pad; however, these wetlands are separated into distinct features because Wetland 9 has completely different wetland conditions present and is classified as a Palustrine Forested Wetland (discussed below).

6.1.1.3 Palustrine Forested Wetlands

Palustrine Forested (PFO) wetlands are characterized by a forest overstory and shrub and herbaceous stratums, which may or may not be prominent. There are six Palustrine Forested wetlands within the study area (Wetland 3A, 4, 5, 7, 9, and 13) with a total area of 32,757 sq ft (0.752 ac). These wetlands are primarily small- to medium-sized distinct features ranging in size from 768 to 4,697 sq ft; however, Wetland 3A is part of a much larger wetland associated with Janes Creek /Butcher Slough, of which 19,454 sq ft occurs in the study area. All Palustrine Forested wetlands have a history of human disturbance; however, wetland conditions are more pronounced, and soils are more developed with less compaction or gravel than the other Palustrine wetlands, which enables root development and tree growth. Specifically, five of the Palustrine Forested wetlands occur in depressions or former drainage swales resulting from past industrial development and subsequent demolition, or from placement of spoil piles that have caused stormwater to pool. Additionally, Wetland 3A occurs along Janes Creek/Butcher Slough in the northeastern portion of the study area (Appendix 2, Photograph 7) and is part of a much larger wetland that becomes estuarine where tidally influenced. This area was restored in the past, enhancing wetland conditions and increasing wetland area to conditions that more closely resemble what would have existed onsite prior to the placement of fill for industrial development. Five of the six Palustrine Forested wetlands occur in the northern portion of the study area in shallow geomorphic low points and the other occurs in the southern portion of the study area along a former drainage swale (Appendix 1, Figure 2). Wetland 3A is continuously saturated; however, the remaining Palustrine Forested wetlands are seasonal, stormwater-dependent wetlands with varied duration of pooled water and saturation.

All six Palustrine Forested wetlands are Section 401 and CCA-jurisdictional, and meet the City of Arcata's wetland definition; however, four of these wetlands are isolated features with no connectivity to a TNW. Two of the Palustrine Forested wetlands have a continuous surface connection to a TNW (Wetland 3A and 4) for a total of 20,222 sq ft (0.464 ac) and these are considered federally jurisdictional wetlands, as shown on Figure 3. Additionally, Wetlands 3A and 4 are 1600-1607 jurisdictional. See Table 3 for a preliminary determination of jurisdiction as well as jurisdictional area in square feet and acreage and Cowardin classification.

Dominant species included coastal willow, Sitka willow (*Salix sitchensis*), Himalayan blackberry, and creeping bentgrass, with lesser dominance by Pacific willow (*Salix lasiandra* var. *lasiandra*), giant bentgrass (*Agrostis gigantea*), and Henderson's sedge (*Carex hendersonii*), among others. Dominant hydric soil indicators included redox dark surface and hydrogen sulfide odor. Soil composition reflects the past use of the site and placement of fill over native alluvial soils for industrial development. In most sites soils consisted of a varied texture loam of different depths over a gravelly loam, silty clay, sandy clay loam, or clay loam. Compacted cobbly gravel was only observed in one Palustrine Forested wetland. Wetland hydrology indicators were more pronounced in the Palustrine Forested wetlands within the study area. The most common wetland hydrology indicators included the primary indicators of saturation within 12 inches of the soil surface, a high water table, and a sparsely vegetated concave surface, as well as a mix of two secondary indicators, typically a geomorphic position, water-stained leaves, or a plant community meeting the FAC-neutral test. All field data with details for each Palustrine Forested wetland is included in Appendix 4 and is summarized in Table 4. Photographs 7-10 in Appendix 2 are representative of the Palustrine Forested wetlands observed in the study area.

6.1.2 Estuarine Wetlands

Estuarine wetlands consist of deepwater tidal habitats and adjacent tidal wetlands. Estuarine wetlands extend upstream and are influenced by freshwater flows from Jolly Giant Creek/Butcher Slough; however, Estuarine wetlands within the study area frequently experience tidal inundation.

6.1.2.1 Emergent (E2EM)

One Estuarine wetland occurs within the study area (Wetland 3B), with an area of 74,677 sq ft (1.714 ac). This wetland is USACE, Section 401, and CCA-jurisdictional, and meet the City of Arcata's wetland definition. Wetland 3B is on the lower reach of Jolly Giant Creek/Butcher Slough, downstream of Wetland 3A, where the tidal influence affects the vegetation, changing it from predominantly freshwater-influenced Palustrine wetland to Estuarine wetland, where salinity affects the vegetation (See Appendix 1, Figure 2; Appendix 2, Photographs 11 and 12). Wetland 3B is best described as an Estuarine intertidal wetland with Emergent vegetation using the Cowardin classification. See Table 3 for subclass and modifiers. Vegetation found in Wetland 3B is dominated by Lyngbye's sedge, seaside arrow grass (*Triglochin maritima)*, marsh Jaumea, Pacific silverweed (*Potentilla anserina* ssp. *Pacifica),* coastal tufted hairgrass*,* and saltgrass*.*

Soils have strong hydric indicators present, such as a gleyed horizon, thick Redox Dark Surface development with a high percentages of redox, and a hydrogen sulfide smell. Wetland hydrology features are also strongly expressed at the wetland boundary edge, with many primary and secondary indicators (See Appendix 4 for datasheet descriptions). Wetlands 11, 15, and 16 are adjacent to Wetland 3B, but are considered Palustrine, as they are elevated above all but the highest tides, which limits tidal inundation and associated saline influence. Wetland 3B is directly adjacent to Jolly Giant Creek/Butcher Slough, which flows into Humboldt Bay, a TNW.

6.2 Other Waters: Streams

One stream, Jolly Giant Creek/Butcher Slough, passes through the study area for a total of 10,033 sq ft (0.23 ac). This stream flows from the north to the south on the eastern boundary of the study area, and east to west on the southern boundary of the study area to connect to Humboldt Bay, a TNW. The stream is divided into two distinct Cowardin classifications, reflecting changes in habitat with the northern upstream portion mapped as Riverine (Stream 1A), reflecting its predominantly freshwater conditions, while the southern portion is mapped as Estuarine (Stream 1B), reflecting regular tidal influence and brackish water influence during high tides. Stream 1A and Stream 1B are described below, including general conditions, Cowardin classification, area, and supporting OHWM delineation data. See Table 3 for a preliminary determination of jurisdiction as well as jurisdictional area in square feet and acreage and Cowardin classification. See Appendix 1, Figure 2 and Appendix 2, Photographs 7, 11, 12 and 13.

Stream 1A

Jolly Giant Creek/Butcher Slough Stream 1A is the freshwater portion of the perennial stream, with an average channel width of 82 inches at the OHWM, for a total area of approximately 2,249 sq ft of other waters below the OHWM within the study area (Table 3). Stream 1A flows directly into Humboldt Bay, a TNW. This section of stream is best described as a Riverine system with an unconsolidated bottom and accumulated organic material as well as silt and clay soil fines (Table 3) using the Cowardin system. Willow and Sitka spruce cover extends over the stream in several places and creeping bentgrass, small-fruited bulrush (*Scirpus microcarpus*), and canary reedgrass (*Phalaris arundinacea*) were common dominants. The vegetation community and flowing freshwater within this segment of stream suggest that this portion of the stream is predominantly freshwater except during extreme high tide events. As such, this stretch of stream was given the Riverine Cowardin classification; however, the transition to Estuarine conditions with brackish water is subtle and varies with the tide, freshwater flow levels, and elevation.

Stream 1B

Jolly Giant Creek/Butcher Slough Stream 1B is the tidally-influenced portion of the perennial stream, with an average channel width of 82 inches at the OHWM, for a total area of approximately 7,784 sq ft of other waters below the OHWM within the study area (Table 3). Stream 1B flows directly into Humboldt Bay, a TNW, and is directly downstream from the freshwater portion of the stream mapped as Stream 1A described above. This portion of the stream is much more influenced by the tides and is regularly inundated by brackish water, which influences the vegetation community along the streams edge to brackish marsh-dependent species. As such, this portion of the stream is mapped as Estuarine (Table 3); however, the separation between the freshwater portion of the stream and tidally-influenced portions of the stream is a gradient, rather than a distinct location. Stream energy is low, allowing for an accumulation of silts and clays in the stream bed. Vegetation is dominated by Lyngbye's sedge, saltmarsh bulrush, and saltgrass. The OHWM delineation datasheet is included in Appendix 4.

6.3 Coastal Aquatic Features

Fourteen other features occur within the study area that do not have three-wetland parameters present, but meet the definition of coastal aquatic features, and in most cases meet the City of Arcata's wetland definition. Coastal aquatic features (CF) may be regulated as wetlands under the CCA, pending verification. These are areas that exhibit only one or two of the three parameters required by the USACE and are not considered to be atypical situations or problem areas. These areas may have functions

related to wetlands or are areas in which the CCA may require further investigation. None of these coastal features are associated with streams and or riparian, thus excluding them from CWA Section 401 and CFGC Section 1600-1607-jurisdiction. The fourteen coastal features within the study area occupy a total of 8,837 (0.203 ac) and all are considered CCA-jurisdictional features.

Coastal aquatic features in the study area are found predominantly on compacted industrial fill with gravels to cobbles, and are positioned geomorphic positions formed under anthropogenic manipulation and disturbance. All coastal features had hydrophytic vegetation dominance and wetland hydrology, except for CF6 and CF9. CF6 had only weakly expressed wetland hydrology, while CF9 had both hydrophytic vegetation and hydric soils present and no indication of wetland hydrology.

Appendix 1, Figure 2 shows coastal aquatic feature locations and extent, and representative photographs of these features are presented in Appendix 2, Photographs 14 through 18.

Coastal Features with Hydrophytic Vegetation and Wetland Hydrology

Coastal Features 1, 2, 3, 4, 5, 7, 8, 10, 11, 12, 13, and 14 occupy a combined area of approximately 7,919 sq ft (Table 3) and occur throughout the study area, but are most prevalent in the northern portion of the study area (Appendix 1, Figure 2). All of these coastal features have both hydrophytic vegetation dominance and wetland hydrology, but lack hydric soils, reflecting their disturbed nature, artificial conditions, and transitory wetland hydrology. As such, these features are not Federal, State 401, or 1600-1607-jurisdictional features: however, they all meet the City of Arcata's wetland definition. These features are primarily isolated; however, CF1 is directly adjacent to Wetland 2, CF3 is directly adjacent to Wetland 4, and CF13 is directly adjacent to Wetland 11, and represent transitional areas between upland and wetland conditions. Coastal features with hydrophytic vegetation dominance and wetland hydrology are characterized by small shallow depressions on industrial fill, creating shallow pools that are directly related to storm events. Non-native, FAC species are dominant in most of these features, reflecting the history of disturbance (Photographs 14 through 18). Dominant species included creeping bentgrass, Italian ryegrass (*Festuca perennis)*, and pennyroyal, among others, and several have an overstory of coastal willow as a dominant. Wetland hydrology was weakly expressed in most of the coastal features. The most common wetland hydrology indicators were the secondary indicators of a geomorphic position, water-stained leaves, and a vegetation community that meets the FAC-neutral test. An algal mat was the most common primary hydrology indicator, followed by saturation. Hydric soils were not present in these coastal features, mainly because of the transitory, stormwater-dependent hydrology and the compacted to very compacted gravel substrate and the shallower geomorphic depressions, which separated these features from the three-parameter wetlands which displayed more long-term wetland hydrologic conditions. These coastal features are generally not in swales that collect water, or they have a substrate that either does not allow water to penetrate or do not have organic matter or textural fines that absorb water to allow hydric indicators to form. These soils are generally composed of gravelly and cobbly sandy loam or loamy sand material.

Coastal Feature 6

Coastal Feature 6 occupies approximately 204 sq ft of the study area (Table 2) to the east of Wetland 7 (Appendix 1, Figure 2; Appendix 2, Photograph 19). This feature occurs under willow canopy in a shallow depression on fill soils, with only weakly expressed wetland hydrology indicators present. Weak hydrology indicators are likely due to very temporary pooling during storm events that cannot support the development of hydric soil indicators. Furthermore, the weak wetland hydrology does not support hydrophytic vegetation dominance. Coastal willow can be a deep-rooted phreatophyte and does not

necessarily reflect wetland conditions. Upland species were dominant in the understory with primary dominance by invasive sweet vernal grass. This feature does not meet the City of Arcata's wetland definition.

Coastal Feature 9

Coastal Feature 9 occupies approximately 711 sq ft of the study area (Table 3) and occurs just west of Wetland 3B in a geomorphic low point behind a berm boarding Jolly Giant Creek/Butcher Slough (Appendix 1, Figure 2; Appendix 2; Photograph 20). Both hydric soil and hydrophytic vegetation dominance were present in CF 9. The test pit profile had mixed fill matrix horizons, exhibiting relict redoximorphic features as well as minimal insitu redoximorphic features and colors meeting depleted and gley colors. Wetland hydrology was not observed, other than the secondary indicator of a very shallow geomorphic depression. Well-drained soils at this location likely prevent pooling or development of wetland conditions. Dense herbaceous vegetation was present and hydrophytic vegetation dominance was restricted to the geomorphic low point. Hydrophytic vegetation was dominated by Facultative and Obligate native species including beardless wildrye (*Elymus triticoides* and small-fruited bulrush; however, upland vegetation was also present at lower cover with dominance by spring vetch (*Vicia sativa* ssp. *sativa*). This feature does not meet the City of Arcata's wetland definition.

6.4 City of Arcata Aquatic Features

All aquatic features delineated within the study area including coastal aquatic features, meet the City of Arcata's wetland definition except for Coastal features 6 and 9. These features have only one wetland parameter present, or do not have wetland hydrology present.

6.5 Non-jurisdictional Features

Several locations within the study area have hydrophytic vegetation dominance or evidence of temporary pooling but are not considered coastal wetlands. The majority of these features consist of semi-discrete areas with dominance by invasive FAC species that are found in both upland and wetland locations throughout the study area. Common invasive hydrophytes found in both upland and wetland locations included wild teasel (*Dipsacus fullonum* [FAC]), poison hemlock (*Conium maculatum* [FAC]), Himalayan blackberry [FAC], Italian ryegrass [FAC], creeping bentgrass [FAC], creeping buttercup (*Ranunculus repens* [FAC]), rough bluegrass (*Poa trivialis* [FAC]), buckthorn plantain (*Plantago coronopus* [FAC]) and velvet grass [FAC], among others. All of these species are opportunistic invasive species that are common in former industrial areas or locations with a history of significant or ongoing disturbance. These species were observed growing across the entire study area at varied densities and species associations and are a poor indicator of wetland conditions. A total of five test pits were excavated in areas with hydrophytic vegetation dominance that did not have hydric soil indicators or wetland hydrology indicators. All invasive hydrophytic vegetation-dominated areas without wetland hydrology or hydric soils were determined to be non-coastal features, and invasive hydrophytic species were determined to be functioning as non-hydrophytes.

Several small, isolated features displayed evidence of pooling but with completely artificial conditions and limited habitat value. These features are better described as puddles reflecting the short duration of stormwater-dependent hydrology, and the regular use of the area for light storage and vehicular access. These features occur in the southern portion of the study area on extremely compacted gravelly surfaces with limited vegetation cover. The regular use of the area for vehicular access and the compacted gravels limit vegetation cover, and low growing, disturbance-adapted herbaceous hydrophytes were dominant

in these features. No hydric soils were observed in these features, and hydrology indicators suggest irregular inundation with a short duration following storm events. Due to the artificial conditions, lack of wetland habitat, and ongoing use, these features were not mapped and are considered upland short duration puddles. TP42 was excavated within one of these features and represents conditions observed in similar features (Appendix 1, Figure 2; Appendix 2, Photograph 21).

Every attempt was made to determine the potential occurrence of coastal wetlands, as observed by evidence of wetland hydrology and other indicators. It is the best professional judgement of the wetland scientists completing this work that the hydrophytic vegetation-dominated areas without hydric soils or wetland hydrology and puddles observed in disturbed, otherwise upland areas are not coastal wetland features for the reasons described above. Therefore, these features were not mapped and are considered upland.

Table 3. Wetland and Other Waters Within the Study Area Arcata, Humboldt County, California

Aquatic Resource Name	Cowardin Type	Location (Latitude/ Longitude) Datum WGS 84	USACE Jurisdictional Area (sq ft)	401 Jurisdictional Area (sq ft)	1600–1607 Jurisdictional Area (sq ft)	CCA and City of Arcata Jurisdictional Area (sq ft)
Potential Wetland Waters in the Study Area						
Wetland 1	PEM1Ar0n[a]	40.864773°/ -124.089708°	0	2,038	0	2,038
Wetland 2	PEM1Ar0n[a]	40.864338°/ -124.090325°	0	1,023	0	1,023
Wetland 3A	PFO4D0n [b]	40.864198°/ -124.089403°	19,454	19,454	19,454	19,454
Wetland 3B	E2EM1[c]	40.862745°/ -124.089800°	74,677	74,677	0	74,677
Wetland 4	PFO1Br0n[d]	40.864328°/ -124.089421°	768	768	768	768
Wetland 5	PFO1Ar0n[e]	40.864245°/ -124.089855°	0	899	0	899
Wetland 6	PEM1Ar0n[a]	40.864119°/ -124.090213°	0	661	0	661
Wetland 7	PFO1Ar0n[e]	40.863896°/ -124.090030°	0	2,909	0	2,909
Wetland 8	PEM1Ar0n[a]	40.863813°/ -124.090752°	0	1,481	0	1,481
Wetland 9	PFO1Br0n[c]	40.863388°/ -124.090431°	0	4,697	0	4,697
Wetland 10	PSS1Cx0n [f]	40.863273°/ -124.090126°	0	1,070	0	1,070
Wetland 11	PEM1Ar0n[a]	40.863186°/ -124.089825°	849	849	0	849
Wetland 12	PEM1Ar0n[a]	40.862650°/ -124.090089°	0	2,229	0	2,229
Wetland 13	PFO1Cx0n [g]	40.862336°/ -124.091088°	0	1,574	0	1,574

Table 3. Wetland and Other Waters Within the Study Area
Arcata, Humboldt County, California

Aquatic Resource Name	Cowardin Type	Location (Latitude/ Longitude) Datum WGS 84	USACE Jurisdictional Area (sq ft)	401 Jurisdictional Area (sq ft)	1600–1607 Jurisdictional Area (sq ft)	CCA and City of Arcata Jurisdictional Area (sq ft)
Wetland 14	PEM1Ar0n[a]	40.862246°/ -124.090428°	0	875	0	875
Wetland 15	PEM1Ax0n [h]	40.862099°/ -124.091019°	3,108	3,108	0	3,108
Wetland 16	PEM1Ax0n [h]	40.862135°/ -124.090425°	1,509	1,509	0	1,509
Wetland Waters Total			**100,365 (2.304 ac)**	**119,821 (2.751 ac)**	**20,222 (0.464 ac)**	**119,821 (2.751 ac)**
Potential Non-Wetland Waters in the Study Area						
Other Waters						
Stream 1A	R2UB3+4G[i]	40.864134°/ -124.089253°	2,249	2,249	2,249	2,249
Stream 1B	E2SB5+6V3[j]	40.862605°/ -124.089600°	7,784	7,784	0	7,784
Other Waters Total			**10,033**	**10,033**	**2,249**	**10,033**
Coastal Features (1 and 2 parameters)						
Coastal Feature 1	N/A	40.864539°/- 124.090145°	0	0	0	52
Coastal Feature 2	N/A	40.864557°/- 124.089595°	0	0	0	1,001
Coastal Feature 3	N/A	40.864317° -124.089560°	0	0	0	562
Coastal Feature 4	N/A	40.864286°/- 124.089942°	0	0	0	928
Coastal Feature 5	N/A	40.864028°/- 124.009560°	0	0	0	1,058
Coastal Feature 6	N/A	40.863920°/- 124.089870°	0	0	0	204
Coastal Feature 7	N/A	40.863694°/- 124.090024°	0	0	0	1,598
Coastal Feature 8	N/A	40.863599°/- 124.089861°	0	0	0	381
Coastal Feature 9	N/A	40.863452°/- 124.089663°	0	0	0	711[k]
Coastal Feature 10	N/A	40.863385° -124.089961°	0	0	0	615
Coastal Feature 11	N/A	40.863296°/ -124.089943°	0	0	0	478
Coastal Feature 12	N/A	40.863243°/- 124.090241°	0	0	0	122

Table 3. Wetland and Other Waters Within the Study Area
Arcata, Humboldt County, California

Aquatic Resource Name	Cowardin Type	Location (Latitude/ Longitude) Datum WGS 84	USACE Jurisdictional Area (sq ft)	401 Jurisdictional Area (sq ft)	1600–1607 Jurisdictional Area (sq ft)	CCA and City of Arcata Jurisdictional Area (sq ft)
Coastal Feature 13	N/A	40.863108°/-124.089850°	0	0	0	695
Coastal Feature 14	N/A	40.862788°/-124.091620°	0	0	0	429
Coastal Features (1 and 2 parameters) Total			**0**	**0**	**0**	**8,834 (0.203 ac)**

a. Palustrine Emergent Persistent Temporarily Flooded Artificial Substrate Freshwater with Mineral Soils
b. Palustrine Forested Needle-Leaved Evergreen Continuously Saturated Freshwater with Mineral Soils
c. Estuarine Intertidal Emergent Persistent
d. Palustrine Forested Broad-Leaved Deciduous Seasonally Saturated Artificial Substrate Freshwater with Mineral Soils
e. Palustrine Forested Broad-Leaved Deciduous Temporarily Flooded Artificial Substrate Freshwater with Mineral Soils
f. Palustrine Scrub Shrub Broad-Leaved Deciduous Seasonally Flooded Excavated Freshwater with Mineral Soils
g. Palustrine Forested Broad-Leaved Deciduous Seasonally Flooded Excavated Freshwater with Mineral Soils
h. Palustrine Emergent Persistent Temporarily Flooded Excavated Freshwater with Mineral Soils
i. Riverine Lower Perennial Unconsolidated Bottom Mud/Organic Intermittently Exposed
j. Estuarine Intertidal Streambed Mud/Organic Permanently Flooded-Fresh Tidal Mixohaline/Mixosaline (Brackish)
k. Not a City of Arcata feature- only one parameter or does not have the hydrology parameter

Table 4. Wetland Parameters by Test Pit, May 2024
Arcata, Humboldt County, California

TP #	Associated Feature	Parameters Present	Parameter Type	Latitude/Longitude Datum WGS 84
TP1	Wetland 2	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.864338°/-124.090325°
TP2	Upland, Wetland 2	0	None	40.884308°/-124.090280°
TP3	Upland, Coastal Feature 1	0	None	40.864553°/ -124.090138°
TP4	Coastal Feature 1	2	Hydrophytic Vegetation, Hydrology	40.864539°/-124.090145°
TP5	Upland	0	None	40.864684°/-124.089961°
TP6	Wetland 1	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.864773°/-124.089708°
TP7	Upland, Wetland 1	0	None	40.864741°/ -124.089721°
TP8	Upland	0	None	40.864596°/-124.089384°
TP9	Coastal Feature 2	2	Hydrophytic Vegetation, Hydrology	40.864557°/-124.089595°
TP10	Upland	0	None	40.884509°/-124.090047°
TP11	Upland, Coastal Feature 2	0	None	40.864491°/ -124.089504°

Table 4. Wetland Parameters by Test Pit, May 2024
Arcata, Humboldt County, California

TP #	Associated Feature	Parameters Present	Parameter Type	Latitude/Longitude Datum WGS 84
TP12	Coastal Feature 4	2	Hydrophytic Vegetation, Hydrology	40.864286°/-124.089942°
TP13	Upland	0	None	40.864440°/ -124.089828°
TP14	Wetland 5	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.864245°/-124.089855°
TP15	Upland, Wetland 5	0	None	40.864218°/-124.089790°
TP16	Upland, Wetland 4	0	None	40.864364°/-124.089460°
TP17	Wetland 4	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.864328°/-124.089421°
TP18	Upland, Wetland 3A	0	None	40.864228°/-124.089453°
TP19	Wetland 3A	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.864198°/-124.089403°
TP20	Wetland 6	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.864119°/-124.090213°
TP21	Upland, Wetland 6	0	None	40.864128°/-124.090195°
TP22	Wetland 7	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.863896°/-124.090030°
TP23	Upland, Wetland 7	0	None	40.863876°/-124.090098°
TP24	Coastal Feature 5	2	Hydrophytic Vegetation, Hydrology	40.864028°/-124.009560°
TP25	Wetland 3B	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.862745°/-124.089800°
TP26	Upland, Wetland 3B	0	None	40.862763°/-124.089842°
TP27	Upland, Coastal Feature 6	0	None	40.863919°/ -124.089919°
TP28	Coastal Feature 6	1	Hydrology	40.863920°/-124.089870°
TP29	Wetland 3B	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.861984°/-124.090530°
TP30	Upland, Wetland 3B	0	None	40.862012°/-124.090554°
TP31	Coastal Feature 9	2	Hydrophytic Vegetation, Hydric Soils	40.863452°/-124.089663°
TP32	Upland, Coastal Feature 9	0	None	40.863524°/-124.089697°

Table 4. Wetland Parameters by Test Pit, May 2024
Arcata, Humboldt County, California

TP #	Associated Feature	Parameters Present	Parameter Type	Latitude/Longitude Datum WGS 84
TP33	Coastal Feature 7	2	Hydrophytic Vegetation, Hydrology	40.863694°/-124.090024°
TP34	Wetland 9	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.863388°/-124.090431°
TP35	Upland, Wetland 9	0	None	40.863482°/-124.090502°
TP36	Wetland 10	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.863273°/-124.090126°
TP37	Upland, Wetland 10	0	None	40.863280°/-124.090117°
TP38	Coastal Feature 12	2	Hydrophytic Vegetation, Hydrology	40.863243°/-124.090241°
TP39	Wetland 8	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.863813°/-124.090752°
TP40	Upland, Wetland 8	0	None	40.863834°/-124.090669°
TP41	Coastal Feature 14	2	Hydrophytic Vegetation, Hydrology	40.862788°/-124.091620°
TP42	Upland	2	Hydrophytic Vegetation, Hydrology	40.862725°/-124.090345°
TP43	Wetland 12	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.862650°/-124.090089°
TP44	Upland, Wetland 12	0	None	40.862720°/-124.090058°
TP45	Wetland 13	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.862336°/-124.091088°
TP46	Upland, Wetland 13	0	None	40.862371°/-124.091060°
TP47	Wetland 15	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.862099°/-124.091019°
TP48	Upland, Wetland 15	0	None	40.862124°/-124.091046°
TP49	Wetland 14	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.862246°/-124.090428°
TP50	Upland, Wetland 14 and 16	0	None	40.862215°/-124.090445°
TP51	Wetland 16	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.862135°/-124.090425°

Table 4. Wetland Parameters by Test Pit, May 2024
Arcata, Humboldt County, California

TP #	Associated Feature	Parameters Present	Parameter Type	Latitude/Longitude Datum WGS 84
TP52	Coastal Feature 13; Upland, Wetland 11	2	Hydrophytic Vegetation, Hydrology	40.863108°/-124.089850°
TP53	Wetland 11	3	Hydrophytic Vegetation, Hydric Soils, Hydrology	40.863186°/-124.089825°

7.0 Conclusions

Sixteen three-parameter wetlands occur within the study area for a total area of 119,821 sq ft (2.751 ac). Not all of these features are USACE-jurisdictional or 1600-1607-jurisdictional; however, all three-parameter features within the study area are Section 401-jurisdictional, CCA-jurisdictional features, and meet the City of Arcata's wetland definition and are shown on Table 3. Wetlands 3A, 3B, 4, 11, 15, and 16 have a continuous surface connection to a TNW and are federally-jurisdictional features, for a total area of 100,365 sq ft (2.304 ac). Wetland 3A and Wetland 4 are 1600-1607-jurisdictional for a total area of 20,222 sq ft (0.464 ac). Fourteen coastal features are considered CCA jurisdictional and occupy a total of 8,834 sq ft (0.203 ac). Twelve of the fourteen coastal features meet the City of Arcata's wetland definition. Coastal features 6 and 9 did not meet the City of Arcata's wetland definition; however, all other aquatic features delineated within the study area do meet the City of Arcata's wetland definition.

One stream flows along the eastern boundary of the study area with 2,249 sq ft (0.052 ac), being Riverine freshwater habitat and 7,781 sq ft (0.179 ac), being tidally-influenced Estuarine habitat. Freshwater portions of the stream are USACE, CWA 401,1600-1607, and CCA-jurisdictional, while Estuarine portions of the stream are USACE, CWA 401, and CCA-jurisdictional, as shown on Table 3.
All wetlands, coastal features, riparian habitat, and stream within the study area are sensitive and should be avoided as much as is feasible to reduce impacts to these valuable resources.

Should wetland, coastal features, riparian, or stream impacts be unavoidable, wetland enhancement and wetland creation options are available within the vicinity of the project. The ideal location for wetland creation or enhancement exists along the Jolly Giant Creek/ Butcher Slough in the floodplain by removal of invasive vegetation, or by the removal of fill material to increase the square footage of Wetland 3A and Wetland 3B.

Table 3 describes the wetlands and OHWM occurring within the study area, including area, location, test pit, or OHWM associated with the feature, and Cowardin classification for federal waterbodies. Table 4 lists the parameters present at each TP and its location within the study area.

8.0 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 senior wetland ecologist and soil scientist.

9.0 References Cited

California Coastal Commission (CCC). (2011). California Coastal; Commission October 5, 2011 Briefing: Definition and Delineation of Wetlands in the Coastal Zone.

---. (2016). Wetland Workshop Presentation: Technical Wetland Delineation Overview. April, 2016. Found at: https://www.coastal.ca.gov/meetings/workshops/.

California Department of Conservation. (2024). Geologic Map of California. California Geological Survey. Accessed at: https://maps.conservation.ca.gov/cgs/gmc/.

California Department of Fish and Wildlife (CDFW) and California Native Plant Society (CNPS). (2019). Protocol for the Combined Vegetation Rapid Assessment and Relevé Field Form. February 21.

California Native Plant Society (CNPS). (2007). Vegetation Rapid Assessment Protocol. CNPS Vegetation Committee. November 5, 2001, Revised February 21, 2007.

City of Arcata. (2022). City of Arcata Local Coastal Element DRAFT. City of Arcata. February 2022.

---. (2024). City of Arcata Maps/GIS. City of Arcata. Accessed June 2024.

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

Federal Geographic Data Committee. (2013). Classification of Wetlands and Deepwater Habitats of the United States. Wetlands Subcommittee, Federal Geographic Data Committee. Adapted from Cowardin, Carter, Golet, and La Roe (1979) Second Edition. August 2013. FGDC-STD-004-2013.

Google Earth. (2024). NAIP 4/25/2023 imagery 40.863175° latitude and -124.090004°longitude. NR: Google Earth.

National Geographic Society. (2013). i-cubed map of Arcata, California.

National Oceanic and Atmospheric Administration (NOAA). (2024). Climate Graphs. National Weather Service Forecast Office, Eureka, California. Accessed at: https://www.wrh.noaa.gov/climate/temp_graphs.php?wfo=eka&p=temperature&year=2023&stn=KCEC.

SHN. (2020). Site Cleanup Plan, Former Little Lake Industries Mill. Arcata, California. Case No. 1NHU018. December.

State Water Resources Control Board (SWRCB). (2021). State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. Adopted April 2, 219, revised April 6, 2021. Accessed November 2023 at: https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/2021/procedures.pdf.

U.S. Army Corps of Engineers (USACE). (2005). Ordinary High Water Mark Identification. Regulatory Guidance Letter No. 05-05. December 7. Available: https://www.nap.usace.army.mil/Portals/39/docs/regulatory/rgls/rgl05-05.pdf.

---. (2010). Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). J. S. Wakeley, R. W. Lichvar, and C. V. Noble, eds. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

---. (2014). Engineer Research and Development Center. 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.

---. (2016). *Updated Map and Drawing Standards for the South Pacific Regulatory Program* (USACE, South Pacific Division

---. (2022). National Wetland Plant List, version 3.5. Accessed June 2024 at: https://wetland-plants.sec.usace.army.mil/download/.

---. (2023). Engineer Research Development Center (ERDC). Antecedent Precipitation Tool, Version 2.0. Published June 26, 2023.

U.S. Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS). (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.

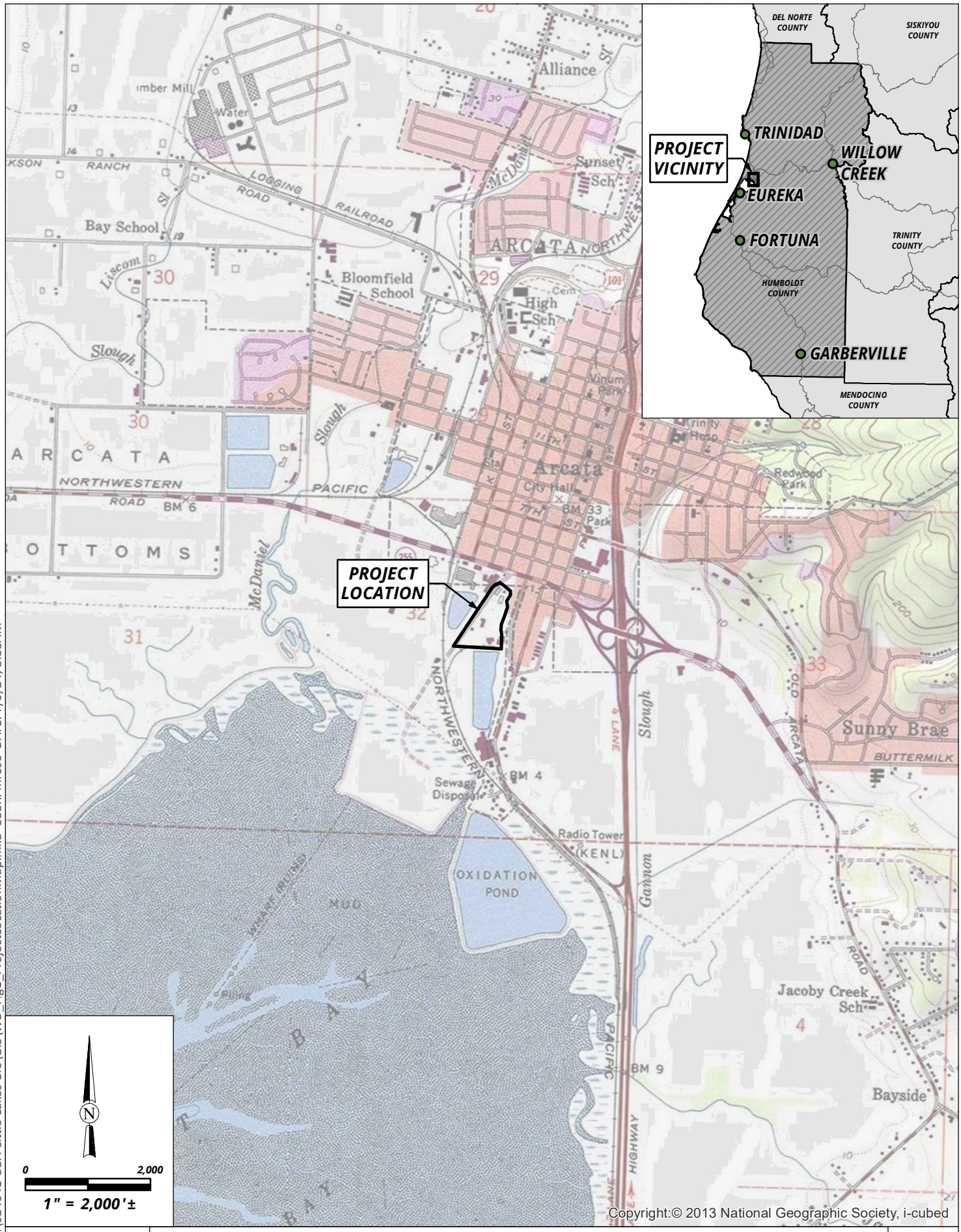
---. (2024a). Web Soil Survey. Accessed at: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

---. (2024b). Natural Resources Conservation Service National Water and Climate Center-Wetlands Climate Tables. Accessed November 2023 at: https://www.nrcs.usda.gov/wps/portal/wcc/home/climateSupport/wetlandsClimateTables/.

U.S. Fish and Wildlife Service. (USFWS). (2024). National Wetlands Inventory. Accessed at: http://www.fws.gov/wetlands/data/mapper.HTML/.

Wetland Delineation Maps

1



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City of Arcata
Little Lakes Former Industrial Site Wetland Delineation
Arcata, California

Project Location Map

July 2024 - 024041.100

Figure 1

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EXPLANATION

- OHWM DELINEATION POINT
- TEST PIT (3-PARAMETER)
- TEST PIT (2-PARAMETER)
- TEST PIT (1-PARAMETER)
- TEST PIT (UPLAND)
- CULVERT INLET
- CULVERT OUTLET
- DRAINS OVER/THROUGH CONCRETE
- STREAM
- ESTUARINE (TIDAL) OHWM
- RIVERINE (FRESHWATER) OHWM
- COASTAL FEATURE
- ESTUARINE WETLAND
- PALUSTRINE WETLAND

NOTE: TEST PITS SHOWN WITHOUT IDENTIFIERS ARE EXPLORATORY, THE WETLAND PARAMETERS CORRESPOND TO THE SYMBOLOGY IN THIS LEGEND

0 100

1" = 100'±

IMAGE SOURCE: GOOGLE, 2017

WETLAND 1 2,038 SF
WETLAND 2 1,023 SF
WETLAND 3A 19,454 SF
WETLAND 3B 74,677 SF
WETLAND 4 768 SF
WETLAND 5 899 SF
WETLAND 6 661 SF
WETLAND 7 2,909 SF
WETLAND 8 1,481 SF
WETLAND 9 4,697 SF
WETLAND 10 1,070 SF
WETLAND 11 849 SF
WETLAND 12 2,229 SF
WETLAND 13 1,574 SF
WETLAND 14 875 SF
WETLAND 15 3,108 SF
WETLAND 16 1,509 SF
STREAM 1A 2,249 SF
STREAM 1B 7,784 SF
CF 1 52 SF
CF 2 1,001 SF
CF 3 562 SF
CF 4 928 SF
CF 5 1,058 SF
CF 6 204 SF
CF 7 1,598 SF
CF 8 381 SF
CF 9 711 SF
CF 10 615 SF
CF 11 478 SF
CF 12 122 SF
CF 13 695 SF
CF 14 429 SF
TP1 TP2 TP3 TP4 TP5 TP6 TP7 TP8 TP9 TP10 TP11 TP12 TP13 TP14 TP15 TP16 TP17 TP18 TP19 TP20 TP21 TP22 TP23 TP24 TP25 TP26 TP27 TP28 TP29 TP30 TP31 TP32 TP33 TP34 TP35 TP36 TP37 TP38 TP39 TP40 TP41 TP42 TP43 TP44 TP45 TP46 TP47 TP48 TP49 TP50 TP51 TP52 TP53
OHWM-1
SOUTH I ST
JOLLY GIANT CREEK/BUTCHER SLOUGH
JOLLY GIANT CREEK/BUTCHER SLOUGH

City of Arcata
Little Lakes Former Industrial Site Wetland Delineation
Arcata, California

Wetland Delineation
CCA Aquatic Resources
July 2024 - 024041.100

Figure 2

P:\Eureka\2024\024041-COA-Little-Lakes-Bio\GIS\WD_Fig3_WetlandDelineation.mxd USER: mrose DATE: 7/15/24, 4:23PM

EXPLANATION

- OHWM DELINEATION POINT
- TEST PIT (3-PARAMETER)
- TEST PIT (2-PARAMETER)
- TEST PIT (1-PARAMETER)
- TEST PIT (UPLAND)
- STREAM
- ESTUARINE (TIDAL) OHWM
- RIVERINE (FRESHWATER) OHWM
- ESTUARINE WETLAND
- PALUSTRINE WETLAND
- PROJECT PARCELS

N

NOTE: TEST PITS SHOWN WITHOUT IDENTIFIERS ARE EXPLORATORY, THE WETLAND PARAMETERS CORRESPOND TO THE SYMBOLOGY IN THIS LEGEND

0 100

1" = 100'±

IMAGE SOURCE: GOOGLE, 2017

TP1 TP2 TP3 TP4 TP5 TP6 TP7 TP8 TP9 TP10 TP11 TP12 TP13 TP14 TP15 TP16 TP17 TP18 TP19 TP20 TP21 TP22 TP23 TP24 TP25 TP26 TP27 TP28 TP29 TP30 TP31 TP32 TP33 TP34 TP35 TP36 TP37 TP38 TP39 TP40 TP41 TP42 TP43 TP44 TP45 TP46 TP47 TP48 TP49 TP50 TP51 TP52 TP53

WETLAND 4
768 SF

WETLAND 3A
19,454 SF

STREAM 1A
2,249 SF

WETLAND 11
849 SF

WETLAND 3B
74,677 SF

STREAM 1B
7,784 SF

WETLAND 16
1,509 SF

WETLAND 15
3,108 SF

OHWM-1

SOUTH I ST

JOLLY GIANT CREEK/BUTCHER SLOUGH

JOLLY GIANT CREEK/BUTCHER SLOUGH

City of Arcata
Little Lakes Former Industrial Site Wetland Delineation
Arcata, California

Wetland Delineation
Federal Aquatic Resources
July 2024 - 024041.100

Figure
3

Site Photographs

2

Photo 1: Arcata Little Lakes study area, which was formerly an industrial lumber mill. Photo looking west from TP48, showing ongoing use of the site for soil storage. Photo taken May 29, 2024.

Photo 2: Invasive annual vegetation typical of large portions of the study area near TP42 looking southeast. Photo taken May 29, 2024.

Photo 3: Wetland 15, a three-parameter Palustrine Emergent wetland at TP47 looking north. Note, wetland is situated in a slight depression near a compacted gravelly area. Photo taken on 5/29/24.

Photo 4: Wetland 12, a three-parameter Palustrine Emergent wetland at TP 43 looking east. Wetland 12 is situated on compacted gravel within a slight depression. Photo taken on 5/29/24.

Photo 5: Wetland 1, a three-parameter Palustrine Emergent wetland at TP7, looking northeast. Wetland 1 is situated on a compacted foot path within a slight depression that collects stormwater. Photo taken on 3/21/24.

Photo 6: Wetland 10, a three-parameter Palustrine Scrub-Shrub wetland at TP36 looking west. Note sparsely vegetated concave surface and shrubby coast willow growth. Photo taken on May 23, 2024.

Photo 7: Wetland 3A, a Palustrine Forested three-parameter wetland and Stream 1A at TP19 looking east across the Jolly Giant Creek/Butcher Slough flood plain. The stream is near the fence line and the entire area in the photo is wetland. Photo taken April 1, 2024.

Photo 8: Wetland 5, a Palustrine Forested three-parameter wetland at TP14 looking east. Note forested conditions, herbaceous understory, water table, and better developed soils. Photo taken on April 1, 2024.

Photo 9: Wetland 4, a Palustrine Forested three-parameter wetland at TP17 looking southeast. Note forested conditions, and standing water in saturated swale with thick topsoil over gravel fill. Photo taken April 1, 2024.

Photo 10: Wetland 13, a Palustrine Forested three-parameter wetland at TP45 looking west. Note willow canopy, sparsely vegetated concave surface, and thick layer of duff and topsoil in a linear drainage swale. Photo taken May 29, 2024.

Photo 11: Wetland 3B and Stream 1B at TP25 looking south. Dominant vegetation is influenced by brackish conditions reflecting regular tidal inundation. Photo taken April 9, 2024.

Photo 12: Wetland 3B at TP29 looking west from TP29. Dominant vegetation is influenced by brackish conditions reflecting regular tidal inundation. Note native brackish marsh species are dominant. Photo taken April 10, 2024.

Photo 13: Stream 1B (Jolly Giant Creek/Butcher Slough looking south from OHWM1. Note abundant growth of *Carex lyngbyei*. Photo taken June 9, 2024.

Photo 14: Coastal Feature CF 4 at TP4 looking south. This is a two-parameter feature (hydrophytic vegetation and hydrology). More pronounced wetland conditions including hydric soils, occur south of the fence in a deeper depression mapped as Wetland 2. Photo taken March 21, 2024.

Photo 15: Coastal Feature CF 2 at TP9 looking east. This is a two-parameter feature (hydrophytic vegetation and hydrology) formed in a shallow depression. Photo taken March 21, 2024.

Photo 16: Coastal Feature CF 4 at TP12 looking north. This is a two-parameter feature (hydrophytic vegetation and wetland hydrology). Photo taken April 1, 2024.

Photo 17: Coastal Feature CF 14 at TP41 looking north. This is a two-parameter feature (hydrophytic vegetation and hydrology). Photo taken May 23, 2024.

Photo 18: Coastal Feature CF 13 at TP52 looking south. This is a two-parameter feature (hydrophytic vegetation and hydrology). Photo taken May 29, 2024.

Photo 19: Coastal Feature CF 6 at TP28 looking southwest. This is a one-parameter feature (hydrology) with upland species dominant in the understory. Photo taken April 10, 2024.

Photo 20: Coastal Feature CF 9 at TP31 looking north. This is a two-parameter feature (hydric soils and hydrophytic vegetation) within a shallow depression without wetland hydrology indicators present. Photo taken April 11, 2024.

Photo 21: Compacted roadway conditions at TP42 looking northwest. Mapped as upland reflecting conditions. Photo taken May 29, 2024.

National Wetlands Inventory, Antecedent Precipitation Tool, and Soil Maps

3

U.S. Fish and Wildlife Service
National Wetlands Inventory

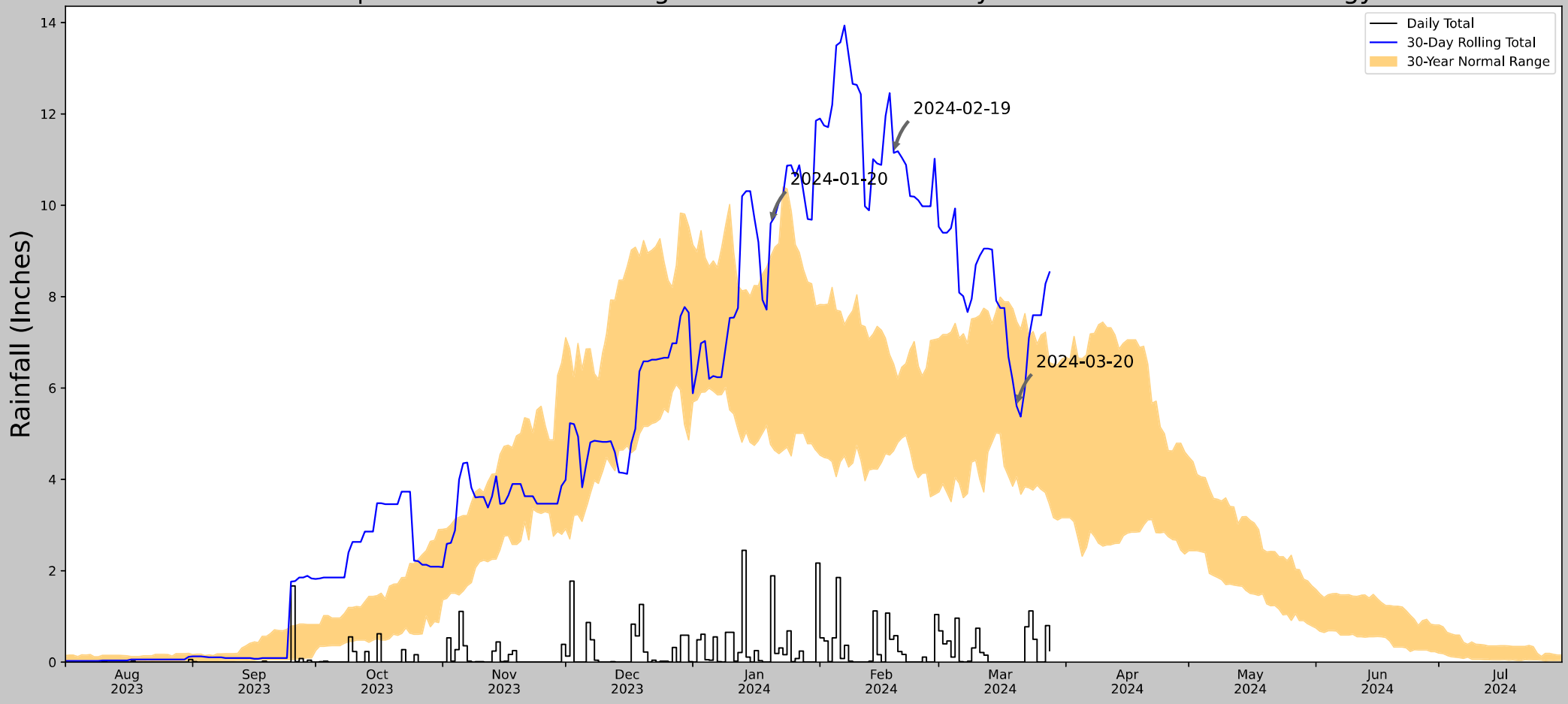
COA-Little Lakes Property

March 14, 2024

Wetlands

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

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	40.862815, -124.090004
Observation Date	2024-03-20
Elevation (ft)	11.231
Drought Index (PDSI)	Mild wetness (2024-02)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-03-20	4.050394	7.45315	5.602362	Normal	2	3	6
2024-02-19	4.629921	6.52441	11.14567	Wet	3	2	6
2024-01-20	4.757874	8.880315	9.602363	Wet	3	1	3
Result							Wetter than Normal - 15

US Army Corps of Engineers

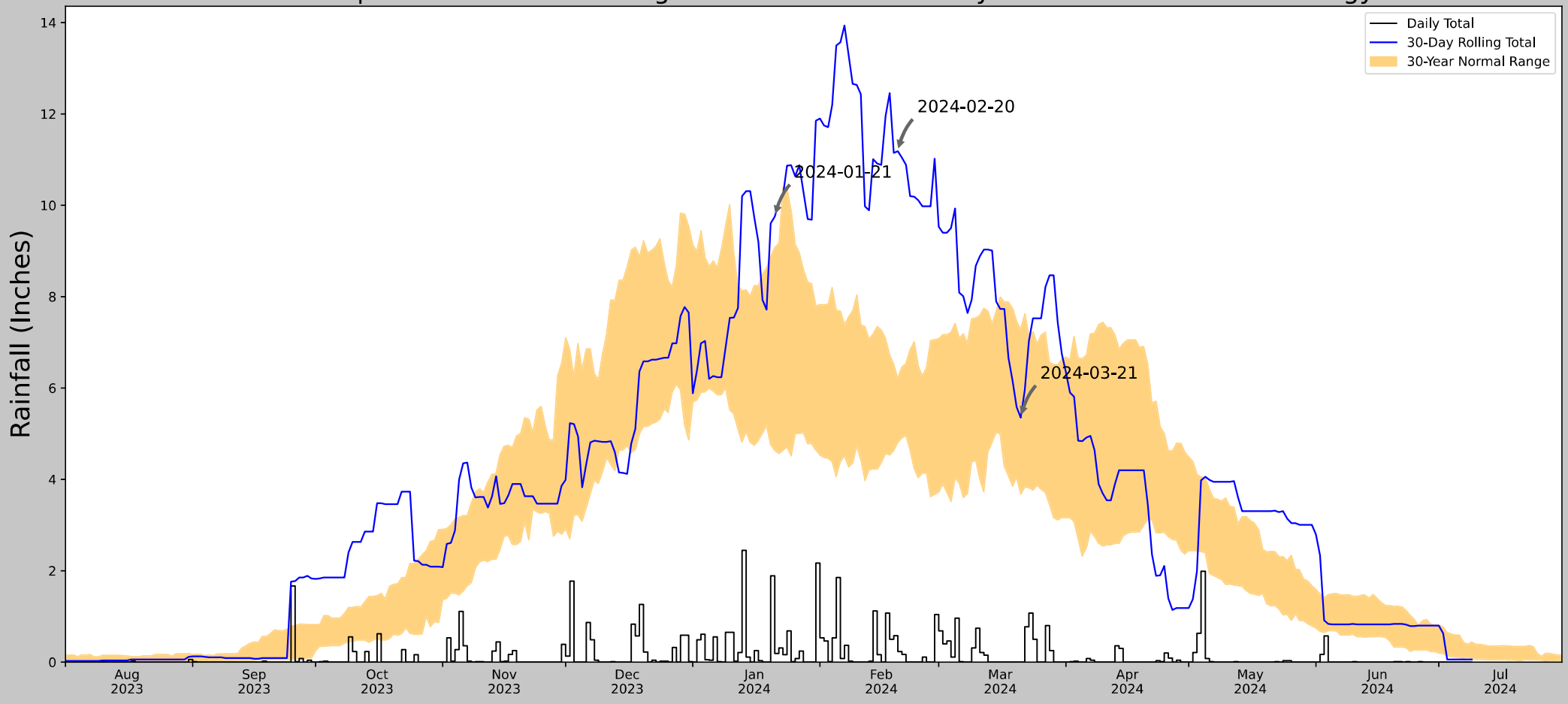
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
EUREKA WFO WOODLEY IS	40.8097, -124.1603	20.013	5.193	8.782	2.383	11352	90

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	40.862815, -124.090004
Observation Date	2024-03-21
Elevation (ft)	11.231
Drought Index (PDSI)	Mild wetness
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-03-21	3.675591	7.285433	5.354331	Normal	2	3	6
2024-02-20	4.80748	6.211418	11.18504	Wet	3	2	6
2024-01-21	4.629134	9.079528	9.751969	Wet	3	1	3
Result							Wetter than Normal - 15

US Army Corps of Engineers

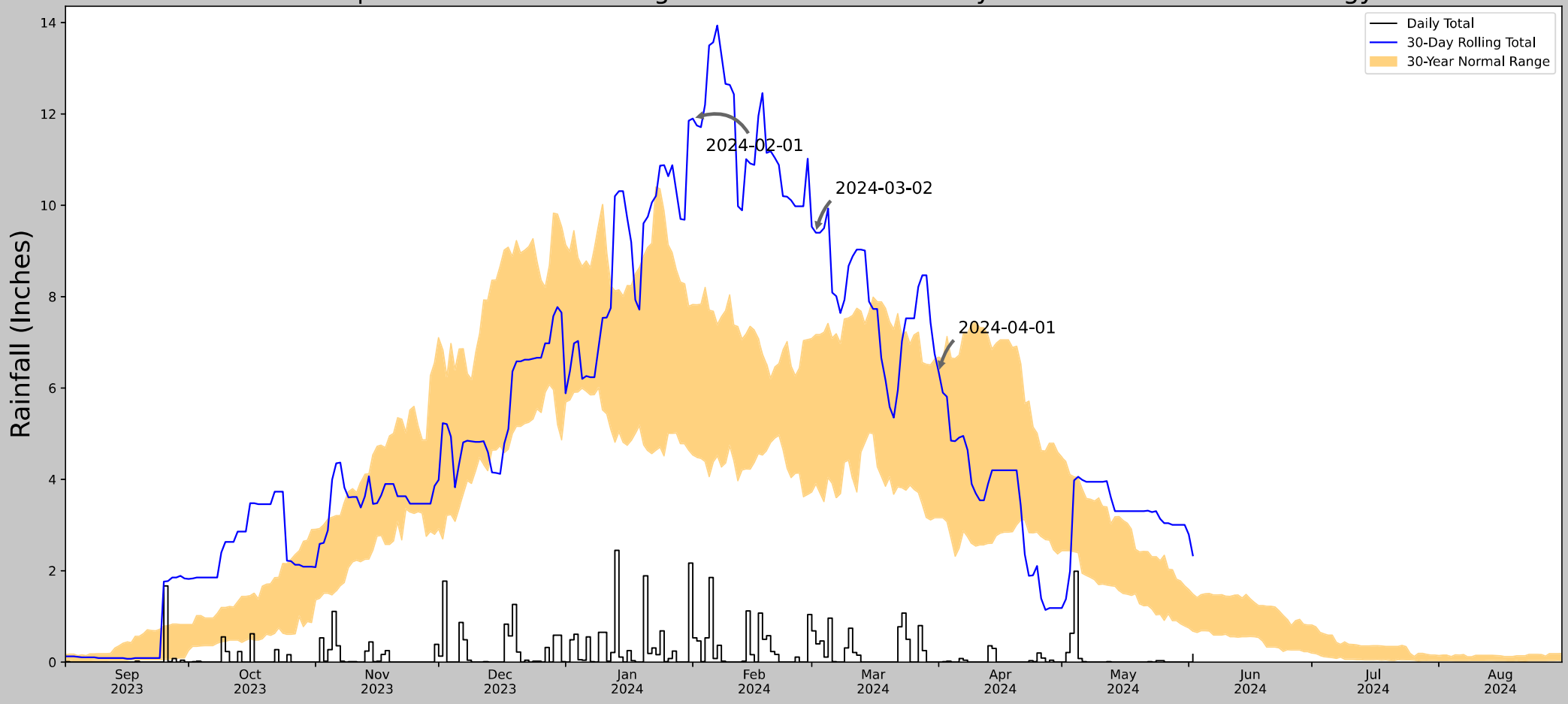
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
EUREKA WFO WOODLEY IS	40.8097, -124.1603	20.013	5.193	8.782	2.383	11352	90

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	40.8643338, -124.0900004
Observation Date	2024-04-01
Elevation (ft)	12.517
Drought Index (PDSI)	Mild wetness
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-04-01	3.16063	6.675591	6.346457	Normal	2	3	6
2024-03-02	3.898425	7.166929	9.401575	Wet	3	2	6
2024-02-01	4.532284	7.826378	11.897638	Wet	3	1	3
Result							Wetter than Normal - 15

US Army Corps of Engineers

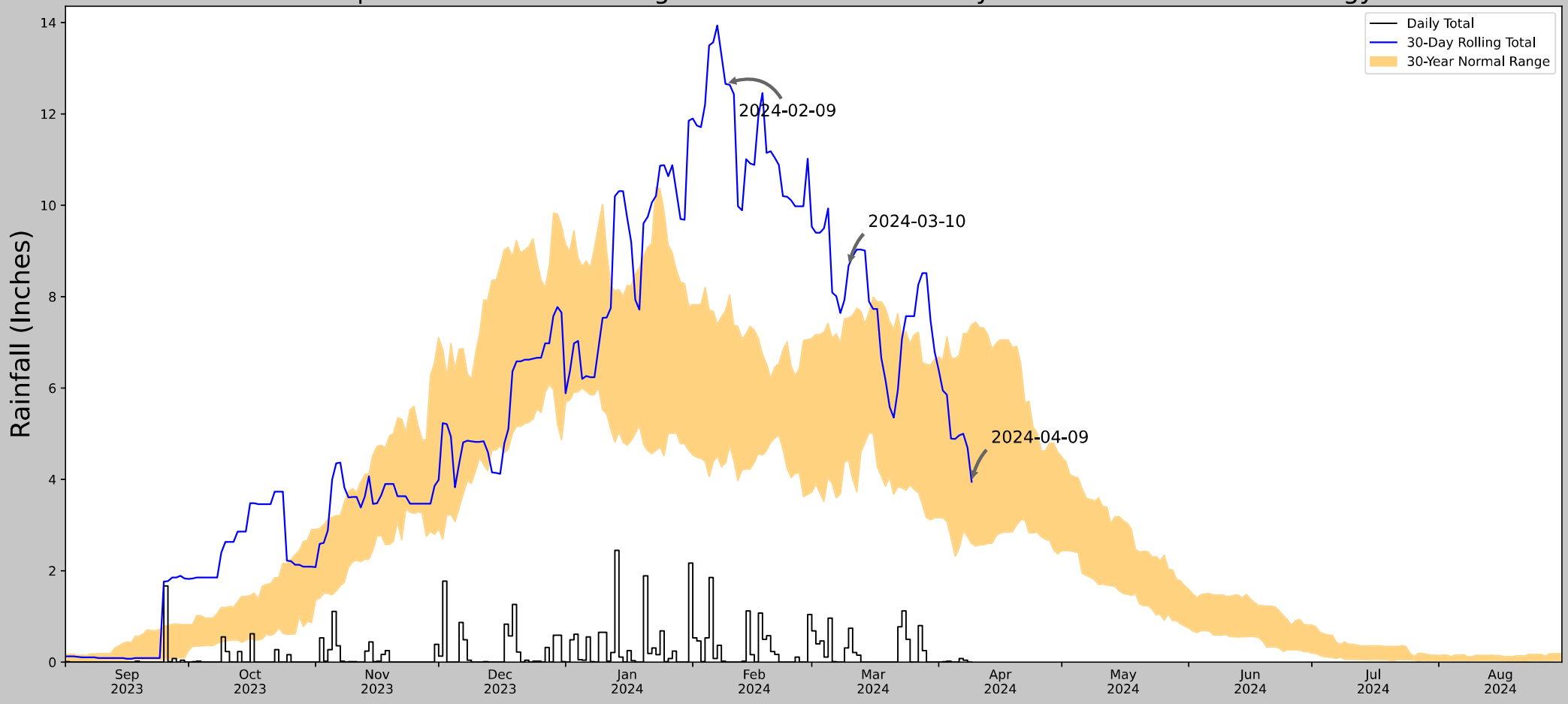
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
EUREKA WFO WOODLEY IS	40.8097, -124.1603	20.013	5.268	7.496	2.41	11352	90

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	40.862815, -124.0900004
Observation Date	2024-04-09
Elevation (ft)	11.231
Drought Index (PDSI)	Mild wetness (2024-03)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-04-09	2.598032	7.388977	3.948819	Normal	2	3	6
2024-03-10	4.419291	7.534646	8.673229	Wet	3	2	6
2024-02-09	4.356693	7.694095	12.657481	Wet	3	1	3
Result							Wetter than Normal - 15

US Army Corps of Engineers

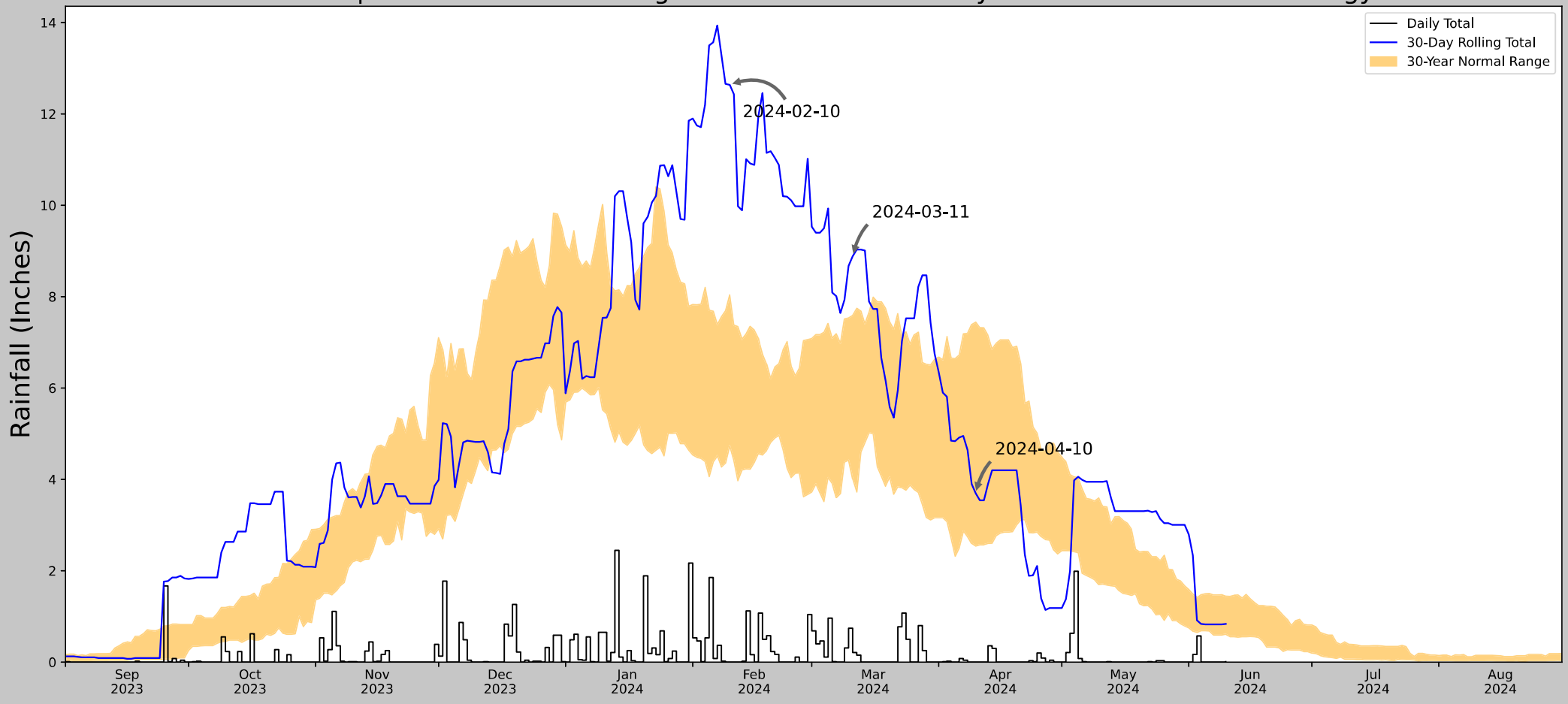
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
EUREKA WFO WOODLEY IS	40.8097, -124.1603	20.013	5.194	8.782	2.383	11352	90

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	40.8643338, -124.0903325
Observation Date	2024-04-10
Elevation (ft)	12.537
Drought Index (PDSI)	Mild wetness
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-04-10	2.540945	7.442126	3.692914	Normal	2	3	6
2024-03-11	4.007874	7.590551	8.88189	Wet	3	2	6
2024-02-10	4.737402	8.039764	12.637796	Wet	3	1	3
Result							Wetter than Normal - 15

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
EUREKA WFO WOODLEY IS	40.8097, -124.1603	20.013	5.256	7.476	2.405	11352	90

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network

Coordinates	40.864119, -124.090213
Observation Date	2024-04-11
Elevation (ft)	12.212
Drought Index (PDSI)	Mild wetness (2024-03)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-04-11	2.568504	7.322441	3.543307	Normal	2	3	6
2024-03-12	3.724016	7.744488	9.031496	Wet	3	2	6
2024-02-11	4.416536	7.377559	12.429134	Wet	3	1	3
Result							Wetter than Normal - 15

US Army Corps of Engineers

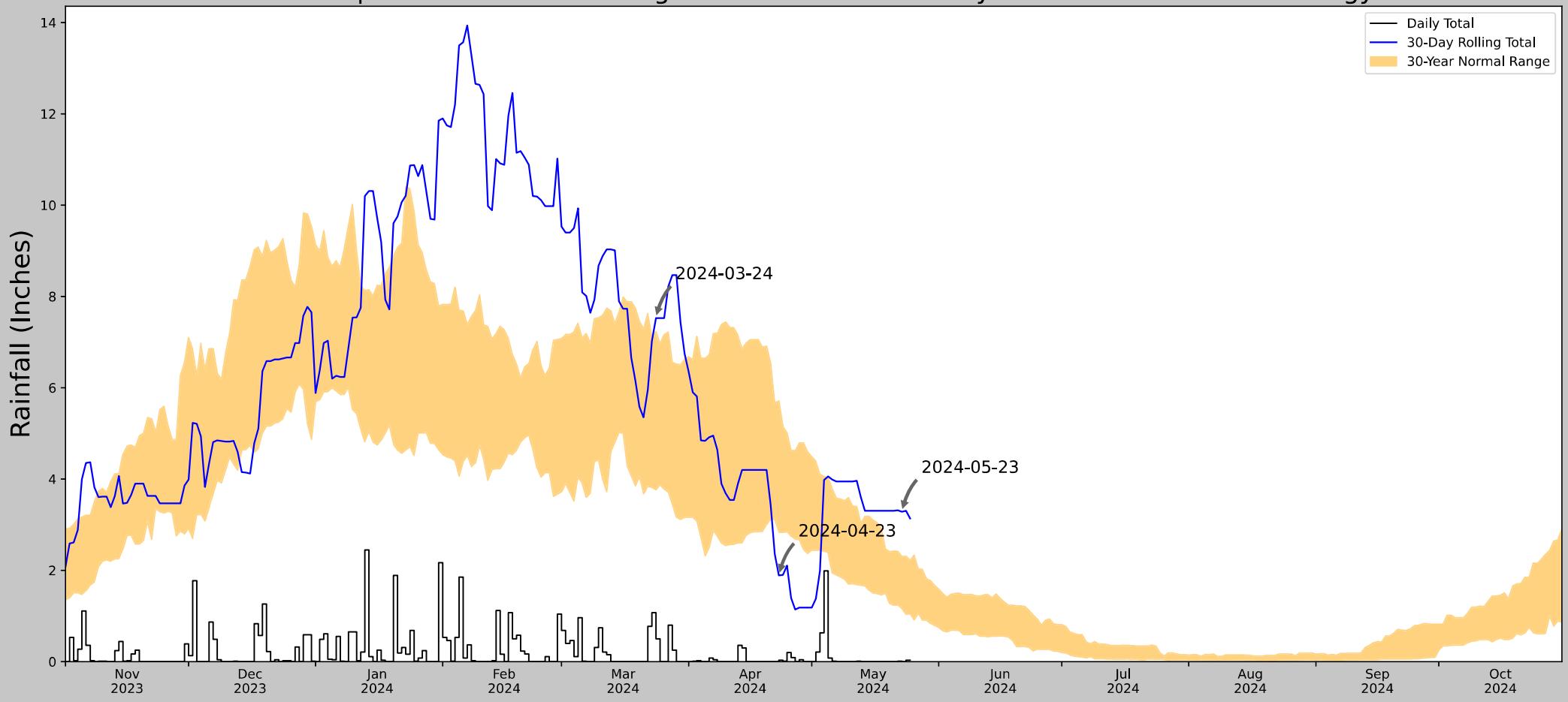
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
EUREKA WFO WOODLEY IS	40.8097, -124.1603	20.013	5.25	7.801	2.403	11352	90

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	40.862815, -124.0900004
Observation Date	2024-05-23
Elevation (ft)	11.231
Drought Index (PDSI)	Mild wetness (2024-04)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-05-23	1.160236	2.305512	3.283465	Wet	3	3	9
2024-04-23	2.836221	5.712205	1.889764	Dry	1	2	2
2024-03-24	3.765748	7.234646	7.527559	Wet	3	1	3
Result							Normal Conditions - 14

US Army Corps of Engineers

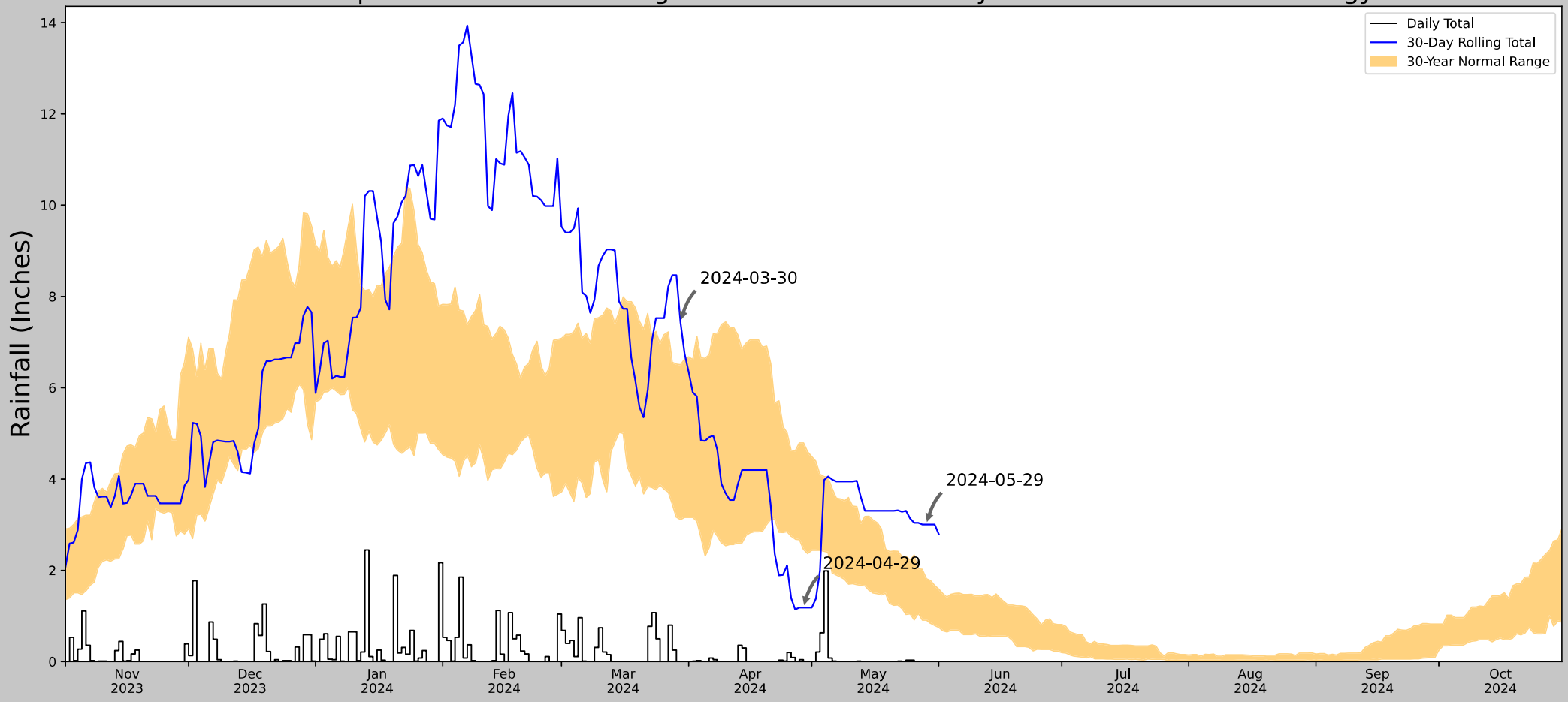
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
EUREKA WFO WOODLEY IS	40.8097, -124.1603	20.013	5.194	8.782	2.383	11352	90

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	40.8643338, -124.0903325
Observation Date	2024-05-29
Elevation (ft)	12.537
Drought Index (PDSI)	Mild wetness (2024-04)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-05-29	0.908661	1.816535	3.003937	Wet	3	3	9
2024-04-29	2.458268	4.790945	1.181102	Dry	1	2	2
2024-03-30	3.11378	6.502362	7.429134	Wet	3	1	3
Result							Normal Conditions - 14

US Army Corps of Engineers

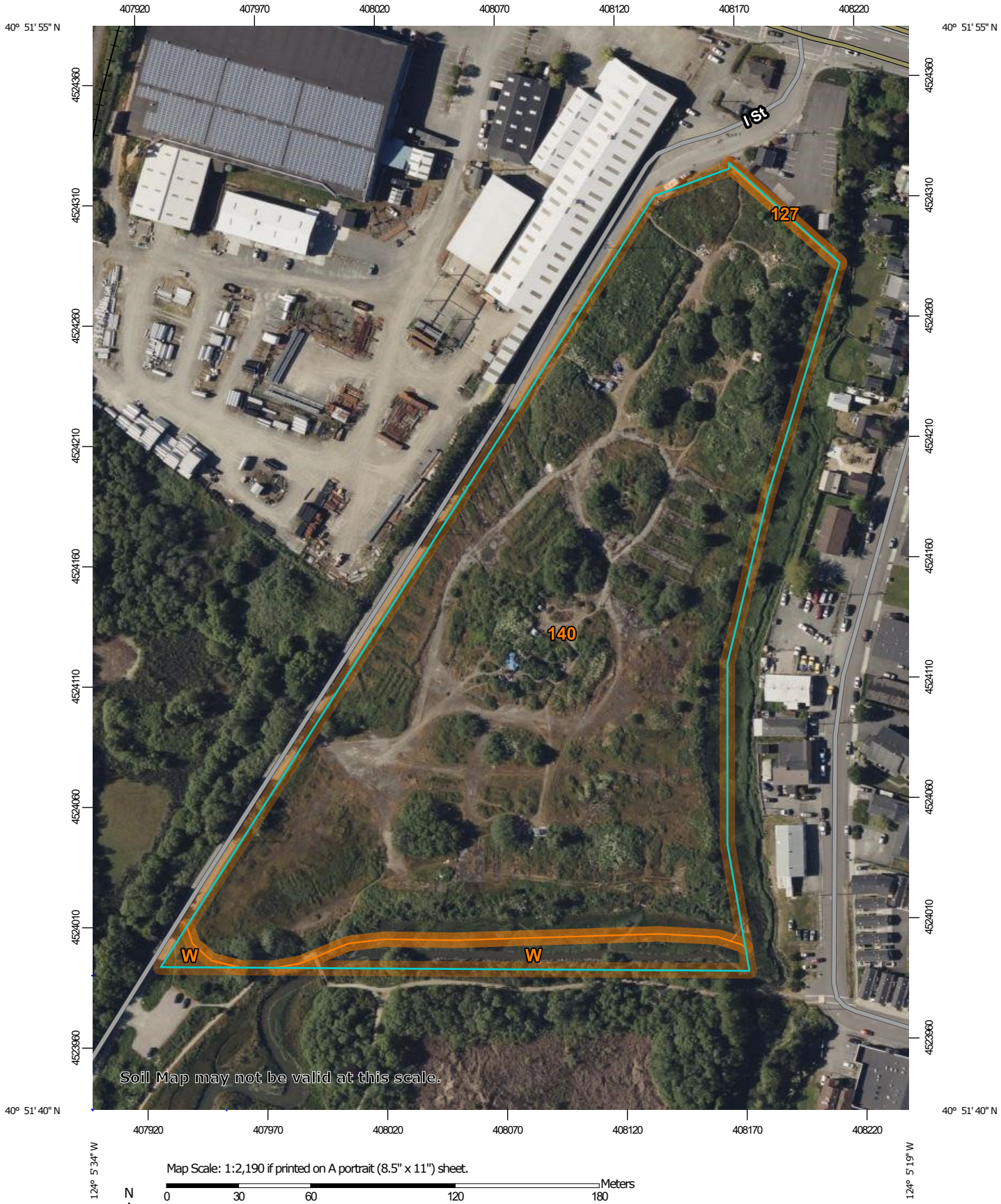
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
EUREKA WFO WOODLEY IS	40.8097, -124.1603	20.013	5.256	7.476	2.405	11352	90

Soil Map—Humboldt County, Central Part, California
(COA-Little Lakes Property)



Map Scale: 1:2,190 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 30 60 120 180

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

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 10, Aug 28, 2023

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

Date(s) aerial images were photographed: Jun 1, 2022—Jun 19, 2022

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
127	Jollygiant, 0 to 2 percent slopes	0.0	0.1%
140	Occidental, 0 to 2 percent slopes	11.3	94.7%
W	Water	0.6	5.2%
Totals for Area of Interest		**11.9**	**100.0%**

Humboldt County, Central Part, California

127—Jollygiant, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: n7ln
Elevation: 0 to 160 feet
Mean annual precipitation: 35 to 80 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 275 to 330 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Jollygiant and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jollygiant

Setting

Landform: Stream terraces, alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

Ap - 0 to 16 inches: silty clay loam
Bg1 - 16 to 33 inches: silty clay loam
Bg2 - 33 to 47 inches: loam
Bg3 - 47 to 63 inches: very fine sandy loam

Properties and qualities

Slope: 0 to 2 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: Rare
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 10.1 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: R004BA203CA - Riparian

Hydric soil rating: No

Minor Components

Urban land, residential
Percent of map unit: 8 percent
Landform: Marine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Canalschool
Percent of map unit: 3 percent
Landform: Flood-plain steps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Fluvaquentic endoaquolls
Percent of map unit: 3 percent
Landform: Depressions, flood-plain steps, backswamps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Weott
Percent of map unit: 3 percent
Landform: Backswamps, depressions, flood-plain steps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: Yes

Urban land, industrial
Percent of map unit: 3 percent
Landform: Flood-plain steps
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 10, Aug 28, 2023

Humboldt County, Central Part, California

140—Occidental, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hs43
Elevation: 0 to 30 feet
Mean annual precipitation: 35 to 80 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 275 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Occidental and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Occidental

Setting

Landform: Salt marshes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from mixed sources

Typical profile

Oi - 0 to 3 inches: peat
A - 3 to 12 inches: silty clay loam
Bzg1 - 12 to 17 inches: silty clay loam
Bzg2 - 17 to 63 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 4 inches
Frequency of flooding: Occasional
Frequency of ponding: Frequent
Maximum salinity: Slightly saline to strongly saline (4.0 to 25.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): 7w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C/D

Ecological site: R004BA205CA - Marshlands
Hydric soil rating: Yes

Minor Components

Wigi, occasionally flooded
Percent of map unit: 3 percent
Landform: Salt marshes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Hydraquents, high tidal
Percent of map unit: 3 percent
Landform: Tidal marshes
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Swainslough
Percent of map unit: 2 percent
Landform: Backswamps, depressions, flood-plain steps, salt marshes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: Yes

Typic udifluvents
Percent of map unit: 1 percent
Landform: Meandering channels
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Arlynda
Percent of map unit: 1 percent
Landform: Meander scars, backswamps, depressions, flood-plain steps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 10, Aug 28, 2023

Wetland and OHWM Determination Forms

4

mp

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

Project/Site: Little Lakes | City/County: Arcata, Humboldt | Sampling Date: 3/20/24
Applicant/Owner: City of Arcata | State: CA | Sampling Point: TP1
Investigator(s): C. Wilcox / J. Berg | Section, Township, Range:
Landform (hillslope, terrace, etc.): Industrial fill | Local relief (concave, convex, none): concave | Slope (%): 2
Subregion (LRR): LRR A - MLRA 4B | Lat: 40.864338 | Long: -124.090325 | Datum: WGS 84
Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (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: WETS climate rainfall is wetter than normal
Isolated. Cowardin: PEM1Ar0n

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. Salix hookeriana	15	✓	FACW
2.			
3.			
4.			
	15 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	12	✓	FAC
2.			
3.			
4.			
5.			
	12 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Foeniculum vulgare	1		NL
2. Dipsacus fullonum	5		FAC
3. Juncus effusus ssp. pacificus	1		FACW
4. Agrostis gigantea	30	✓	FAC
5. Geranium dissectum	1		NL
6. Vicia sativa ssp. sativa	1		UPL
7. Conium maculatum	10	✓	FAC
8.			
9.			
10.			
11.			
	49 = Total Cover		9.8/24.5
Woody Vine Stratum (Plot size: 5ft)			
1. Hedera helix	35	✓	FACU
2.			
	35 = Total Cover		

% Bare Ground in Herb Stratum 51

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: leaf litter 39%, bare ground 10%

Sampling Point: TP1

SOIL

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
0-2	10YR 3/1	100					L	
2-8	10YR 3/2	50			sand increase		L	charcoal, bright clasts
	2.5Y 3/2	50						fill materials mixed
8-14+	10YR 4/2	65	7.5YR 4/6	10	Conc.	PL	Gr SL	conc. on cobble faces, minimal
	10YR 3/2	25						soil (~15% soil, 85% 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)
- 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)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Aquitard (compacted fill layer)

Depth (inches): @ 8"

Hydric Soil Present? Yes X No ___

Remarks: Modified floodplain in industrial site. Soils forming over large cobble fill. Adjacent to I st. (western parcel boundry). Concentrations begin right at top of layer containing cobble. Bottom horizon dominated by compacted fill, very disturbed, Impenetrable past 14" (breaker bar refusal).

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)
- X Geomorphic Position (D2)
- X 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 X No ___

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

Remarks: wetland hydrology transitory as evidenced by lack of primary indicators at time of delineation during an above normal rainfall period.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 3/21/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP2

Investigator(s): Cindy Wilcox, Paul Stiles, J. Soler Section, Township, Range:

Landform (hillslope, terrace, etc.): ~~former~~ Industrial Site Local relief (concave, convex, none): Convex Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864308° Long: -124.090280° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (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 excavated in raised, well drained location. Fill soils present. Conditions recorded here represent a large portion of the surroundings. WETS climate data wetter than normal.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Symphyotrichum chilense	8		FAC
2. Dipsacus fullonum	40	✓	FAC
3. Cotula coronopifolia	25	✓	FAC
4. Anthoxanthum odoratum	17		FACU
5. Festuca perennis	5		FAC
6. Rumex crispus	2		FAC
7. Hirschfeldia incana	2		NL
8. Geranium dissectum	1		NL
9. Foeniculum vulgare	3		NL
10.			
11.			
	103 = Total Cover		20.6/51.5
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: 2 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	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 ___ No X*

Remarks:
*Litter and thatch from past years mowing. Vegetation composition reflects fill and disturbance. Well drained. *Invasive FAC dominants not functioning as hydrophytes.

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
0-4	10YR 2/2	100					L	Many fine roots
4-18+	10YR 3/2	90					SCL	occ. charcoal Mixed materials
	7.5YR 5/8	5						mixed matrix } fill
	10YR 4/6	2						mixed matrix w/occ. gravel+ } Cobble
	10YR 2/2	3						

[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 soils 4/6, 5/8 C&V colors not in situ redox colors. Brought in from another source. Sharp, angular boundaries & small inclusive gravel pieces

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: TP location and surroundings elevated and well drained. No evidence of wetland hydrology.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 3/21/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP3

Investigator(s): Cindy Wilcox, Joseph Sabo, Paul Stiles Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864553° Long: -124.090138° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (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 excavated at north end of shallow swale along I street. Slightly elevated above wetland. WETS climate data wetter than normal

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	7	✓	FAC
2.			
3.			
4.			
5.			
	7 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Agrostis stolonifera	50	✓	FAC
2. Symphyotrichum chilense	5		FAC
3. Rumex crispus	4		FAC
4. Dactylis glomerata	10		FACU
5. Festuca perennis	15		FAC
6. Cirsium vulgare	2		FAC
7. Festuca arundinacea	2		
8.			
9.			
10.			
11.			
	86 = Total Cover		
Woody Vine Stratum (Plot size: ____)	12.2/43		
1.			
2.			
	____ = Total Cover		
% Bare Ground in Herb Stratum 20*			

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	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 ____ No X*

Remarks:

* litter and thatch from last year mowing. Vegetation reflects disturbed nature of the site. *Invasive FAC dominants not functioning as hydrophytes.

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
0-3	10YR 2/2	100					L	Many fine roots
3-13	10YR 3/2	98	7.5YR 4/6	<1%	C	PL	VGrSCL	redox on gravel faces
	10YR 3/1	1						mixed matrix
13-16	10YR 3/1	99	7.5YR 4/6	1	C	M	CL	

[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:

Transitional hydric soil boundary. Slight redox occurance, but depth too low. TP4 also in transition boundary zone.

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)
- X 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:

Slightly elevated above wetland conditions, no evidence of wetland hydrology. Wetland hydrology evident ~5 ft south of TP ~4 inches lower in elevation

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 3/21/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 4

Investigator(s): Joseph Sabo, Cindy Wilcox, Paul Stiles Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864539 Long: -124.090145 Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (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* meets CCA wetland definition
Hydric Soil Present?	Yes ___	No X	
Wetland Hydrology Present?	Yes X	No ___	

Remarks: TP excavated in geomorphic position in 2p transitional feature. 3-p wetlands south, upland north (see TP 3). WETS climate data is wetter than normal.

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. Symphyotrichum chilense	15	✓	FAC
2. Agrostis gigantea	1		FAC
3. Festuca perennis	5		FAC
4. Agrostis stolonifera	50	✓	FAC
5. Rumex crispus	2		FAC
6. Dipsacus fullonum	1		FAC
7. Dactylis glomerata	1		FACU
8.			
9.			
10.			
11.			
	75 = Total Cover		

Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

15/37.5

% Bare Ground in Herb Stratum 25%

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	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: Veg composition not restricted to geomorphic low point. More reflective of fill and disturbance.

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
0-10/12	10YR 3/2	100					SiL	
10/12-16	10YR 2/1 +	99	5YR 4/6	1	C	PL/M	CL	3in Gravel/cobble-top of horizon w/some colors

[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:

FG boundary transitional, one side of pit 10in, other side 12 inch

3in gr.

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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X 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 X No ___

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

Remarks:

Hydrology strongly associated with storm events, and pooling in adjacent 3-parameter wetland.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 3/21/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP5

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

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864684° Long: -124.089961° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (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 excavated in geomorphic position, no evidence of wetland conditions. WETS climate data wetter than normal

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	3		FAC
2.			
3.			
4.			
5.			
	3 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Symphyotrichum chilense	13		FAC
2. Taraxacum officinale	1		FACU
3. Anthoxanthum odoratum	54	✓	FACU
4. Vicia sativa ssp. sativa	2		UPL
5. Leontodon saxatilis	1		FACU
6. Carduus pycnocephalus	1		NL
7. Geranium dissectum	1		NL
8. Foeniculum vulgare	1		NL
9. Festuca arundinacea	2		FAC
10. Dipsacus fullonum	1		FAC
11.			
	77 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 25%*

15.4 / 38.5

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	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 and thatch from yearly mowing. Vegetation composition typical of surroundings.

SOIL

Sampling Point: TP 5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					L	Many fine roots
4-8	10YR 3/2	88					VGrCo.SL	Fill, compacted
	7.5YR 5/8	10						Mixed Matrices
	10YR 4/4	2						Mixed fill
8-19+	10YR 2/2	99	7.5YR 5/8	1%	C	M	CL	Percent of redox varies, avg. 1%

[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 in upper horizons. Redox in 8-19 has varied redox concentrations, average of 1%. Decreases w/ depth.

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)
- X 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 evidence of wetland hydrology other than geomorphic low point. Well drained.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 3/21/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP6

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

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864773° Long: -124.089708° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (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 geomorphic low point in northwest corner of study area. WETS climate data wetter than normal. Isolated. Cowardin: PEM1ArOn

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	3		FAC
2.			
3.			
4.			
5.			
	3 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Juncus effusus	25	✓	FACW
2. Symphyotrichum chilense	25	✓	FAC
3. Anthoxanthum odoratum	28	✓	FACU
4. Ranunculus repens	1		FAC
5. Lotus corniculatus	1		FAC
6. Agrostis gigantea	3		FAC
7. Leucanthemum vulgare	1		FACU
8. Taraxacum officinale	2		FACU
9. Rumex crispus	3		FAC
10. Plantago lanceolata	2		FACU
11.			
	91 = Total Cover		
Woody Vine Stratum (Plot size: ____)	10.2/45.5		
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 10%

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (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: Veg composition restricted to geomorphic low point.

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 2/2	90					L	fill
	2.5Y 3/2	8					w/occ. Gr.	pockets of mixed fill
	10YR 4/4	2						mixed fill
7-15	10YR 2/1	98	5YR 4/6	2	C	M	C	avg redox ~2%
15-20+	10YR 4/1+	95	10YR 5/6	5	D	M	C	depleted

[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:

in 7-15 horizon redox avg. 2% some areas with greater % and some with less.

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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X 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 X No ___

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

Remarks:

No evidence of prolonged saturation or surface water. Wetland hydrology likely very closely associated with storm events.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 3/21/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 7

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

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864741° Long: -124.089721° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (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 excavated in elevated upland just outside of wetland recorded at TP 6. Conditions representative of surrounding area. WETS climate data wetter than normal

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: 5ft)			
1. Rubus armeniacus	2		FAC
2. Baccharis pilularis ssp. consanguinea	1		NL
3.			
4.			
5.			
	3 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Anthoxanthum odoratum	60	✓	FACU
2. Plantago lanceolata	12		FACU
3. Symphyotrichum chilense	15		FAC
4. Vicia sativa	1		UPL
5. Dipsacus fullonum	2		FAC
6. Leucanthemum vulgare	2		FACU
7. Geranium dissectum	1		NL
8.			
9.			
10.			
11.			
	93 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 10*

18.6 / 46.5

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	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: Vegetation composition representative of surrounding upland areas. * Litter and thatch from annual mowing.

SOIL

Sampling Point: TP 7

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
1-3	10YR 3/2	100					CL	
3-7	10YR 3/2	85					GrSCL	fill
	10YR 5/8	10						Mixed matrices → fill
	2.5Y 5/1	3						Mixed matrices → fill
	2.5Y 5/6	2						Mixed matrices → fill
7-11	10YR 6/8	55					GrSCL	Same colors as above except 10YR3/2
11-19+	10YR 2/1+	100					CL	

[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:

7-11 horizon is mixed fill with some colors as 3-7 horizon with slightly different percentages and no 10YR 3/2.

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 evidence of wetland hydrology. Elevated above adjacent wetland.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 3/21/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 8

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

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

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864596° Long: -124.089384° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (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 excavated in low point within coast willow thicket. No wetland conditions present, with upland vegetation in the understory. WETS climate data wetter than normal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	85	✓	FACW
2.			
3.			
4.			
	85	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5ft)			
1. Baccharis pilularis	5	✓	UPL
2. Rubus armeniacus	15	✓	FAC
3.			
4.			
5.			
	20	= Total Cover	4/6

Herb Stratum (Plot size: 5ft)			
1. Allium triquetrum	20	✓	NL
2. Phalaris arundinacea	12	✓	FACW
3. Arrhenatherum elatius	8	✓	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	20/8

Woody Vine Stratum (Plot size: ___)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 50

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (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: Upland veg dominant in understory of willow thicket, throughout most of the willow thicket along the north property boundary. Some areas have deep leaf litter w/ less vegetative cover, with no hydric soils or hydrology

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
0-4	10YR 4/2	100					L	
4-14	10YR 3/2	99	10YR 4/4	<1%	C	M	grSL	faint
14-16+	10YR 3/2	70					coSL	Mixed fill matrices
	10YR 4/4	10						
	2.5Y 3/2	20						

[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:

Leaflayer @ ground surface. Topsoil over fill material. Other nearby exploratory pits show no hydric soil indicators.

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 evidence of wetland hydrology. Loose gravelly soils are well drained.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 3/21/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP9

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

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

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864557° Long: -124.089595° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (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 ___	
Hydric Soil Present?	Yes ___	No X	Is the Sampled Area within a Wetland? Yes ___ No X * Meets CCA wetland definition
Wetland Hydrology Present?	Yes X	No ___	

Remarks: TP excavated within shallow swale that trends west to east.
*WETS climate data wetter than normal

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Cyperus eragrostis	12		FACW
2. Symphyotrichum chilense	20	✓	FAC
3. Rumex crispus	3		FAC
4. Lotus corniculatus	1		FAC
5. Agrostis stolonifera	40	✓	FAC
6. Poa trivialis	20	✓	FAC
7. Dipsacus fullonum	1		FAC
8.			
9.			
10.			
11.			
	99 = Total Cover		20/50
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: 3 (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:
Veg composition restricted to shallow swale.

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
0-1	10YR 2/2	100					L	Metal and debris
1-9	10YR 2/2	100					GrSiCL	Super compacted
9-11	2.5Y 3/1	100					CL	Metal and debris w/ false redox indicators
11-20+	10YR 3/1	93	10YR 5/8	5	C	M	CL	
			7.5YR 4/4	2	C	M		

[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 with debris, occassional metal with false positive redox.

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)
- X Algal Mat or Crust (B4)
- X 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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X 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 X No ____ Depth (inches): 11.5

Wetland Hydrology Present? Yes X No ____

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

Remarks:

Wetland hydrology restricted to shallow swale. Algal mat intermittent. Hydrology appears to be strongly associated with precipitation. No drainage features in or out.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/1/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP10

Investigator(s): J. Berg, P. Stiles, J. Sder Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Convex Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.884509 Long: -124.090047° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

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

Are Vegetation X, 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

Hydric Soil Present? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks: Wets climate data is wetter than normal. TP excavated in raised fill prism. fill placed on asphalt foundation in 2008 per communication with the heavy equipment operator

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Conium maculatum	17		FAC
2. Anthoxanthum odoratum	28	✓	FACU
3. Cardunus pycnocephalus	1		NL
4. Holcus lanatus	2		FAC
5. Symphyotrichum chilense	30	✓	FAC
6. Vicia sativa ssp. sativa	2		UPL
7. Geranium dissectum	2		NL
8. Juncus lescurii	2		FACW
9. Galium aparine	2		FACU
10. Dipsacus fullonum	5		FAC
11. Raphanus sativus	3		NL
	94 = Total Cover		18.8
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 6%

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 ____	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: Symphyotrichum chilense + Juncus lescurii are remnants from where fill was excavated. fill originated in a wetland area in the Arcata Marsh.

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)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
1-5	10YR 3/1	100					SiCl	
5-13	2.5Y 4/1	60	Mixed fill				GrSiCl	increase of pebble + cobble.
"	2.5Y 5/4	30					"	Mixed fill Matrices
"	10YR 4/6	10					Gr	Gravel beds
13-14.5	Black	100					Asphalt	Asphalt Layer
14.5-21	10YR 4/1	70	10YR 4/6	10	C	M	GrSCl	Cobble dominating Gravel.
"	10YR 2/1	20					"	Mixed fill matrices

[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 on top of asphalt layer at 13 in. Second horizon has increased clay. fill originated from Arcata marsh wetland. Hydric soil conditions are relictual.

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:

Area is elevated and well drained.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/1/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 11

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

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864491° Long: -124.089504° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

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

Are Vegetation ____, Soil ____, or Hydrology X 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 excavated in industrial fill, downslope from TP9 which has more pronounced veg and hydrology.

Climate WETS rainfall is wetter than normal

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. Trifolium subterraneum	18		NL
2. Mentha pulegium	7		OBL
3. Festuca perennis	15		FAC
4. Festuca myuros	20	✓	FACU
5. Poa annua	7		FAC
6. Agrostis stolonifera	5		FAC
7. Rumex crispus	1		FAC
8. Geranium dissectum	T		NL
9. Vicia sativa	3		NL
10. Plantago lanceolata	T		FAC
11. (Lotus) Corniculatus	T		FAC
Lupinus bicolor	T		NL
1. Bromus diandrus	20	✓	NL
2.			
	96 = Total Cover		

% Bare Ground in Herb Stratum ____ 19.2/49

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: Vegetation a mix of upland and FAC/weak wetland indicator species, reflecting upland conditions and transitory, stormwater dependent hydrology.

SOIL

Sampling Point: TP 11

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
0-3	10YR 2/2	100					L	w/occ. gravel Many fine roots
3-11	10YR 4/1	100					VGrCoSCL	Gravel/Cobble fill, occ. redox & metal debris
11-24+	10YR 2/1	100					GrCL	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: Compacted fill
Depth (inches): 3 inches

Hydric Soil Present? Yes ____ No X

Remarks:
Soils composed of industrial fill. Some redox features in 3-11 horizon associated with metal fragments and 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 X No ___ Depth (inches): 0.5
Water Table Present? Yes ___ No X Depth (inches): N/A
Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0-4

Wetland Hydrology Present? Yes ___ No X

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

Remarks:
Recent stormwater perched on top of extremely compacted industrial fill. Veg community and soil conditions indicate saturation is from recent rainfall and wetter than normal climatic conditions. Saturation perched on fill.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/1/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 12

Investigator(s): J. Berg, P. Stiles, J. Salter, C. Wilcox Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864286° Long: -124.089942° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

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

Are Vegetation ____, Soil X, or Hydrology X 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 ____	
Hydric Soil Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X * Meets CCA wetland definition
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Wets climate data is wetter than normal. TP excavated in a small depression adj. to concrete foundation, between foundation and fill prism

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	5	✓	FACW
2.			
3.			
4.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	1		FAC
2. Baccharis pilularis ssp. consanguinea	5	✓	NL
3.			
4.			
5.			
	6	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Symphyotrichum chilense	8		FAC
2. Dipsacus fullonum	6		FAC
3. Geranium dissectum	1		NL
4. Allium triquetrum	1		NL
5. Festuca perennis	50	✓	FAC
6. Bromus diandrus	6		NL
7. Anthoxanthum odoratum	2		FACU
8. Daucus carota	T		FACU
9. Holcus lanatus	T		FAC
10. Vicia sativa ssp. sativa	T		NL
11. Poa annua	T		FAC
	74	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 26%

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (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: Vegetation composition restricted to low points in swale between concrete and upland fill slope.

SOIL

Sampling Point: TP12

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
1-12	5Y 2.5/1	100	—	—	—	—	L	
12-20+	2.5Y 3/1	100	—	—	—	—	GrSL	

[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)
- _X_ 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)
- _X_ 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)
- _X_ 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. Representative soil conditions from 3x5ft trench described above.

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)
- _X_ 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)

- _X_ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- _X_ 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): 20in

Saturation Present? (includes capillary fringe) Yes _X_ No ___ Depth (inches): 12in

Wetland Hydrology Present? Yes _X_ No ___

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

Remarks:
Wetland hydrology restricted to small depression alongside concrete foundation. Upland conditions surrounding.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/1/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 13

Investigator(s): J. Sater, G. Wilcox Section, Township, Range:

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

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864440 Long: -124.089828 Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

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

Remarks: TP excavated in low point, just downslope from TP 12.
Climate WETS rainfall is wetter than normal

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Plantago coronopus	5	✓	FAC
2. Plantago lanceolata	2		FAC
3. Geranium dissectum	T		NL
4. Hypochaeris radicata	1		FACU
5. Lythrum hyssopifolia	3		OBL
6. Poa annua	2		FAC
7. Medicago polymorpha	1		FACU
8. Lysimachia arvalis	T		FAC
9. Festuca perennis	1		FAC
10. Lotus corniculatus	3		FAC
11. Trifolium hirsutum	3		NL
Festuca myuros	2		FACU
1. Agrostis stolonifera	1		FAC
2.			
	24 = Total Cover		4.8 TP2
% Bare Ground in Herb Stratum 76%			

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
- ___ 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:
Extremely compacted gravel restricts vegetation growth. All individuals observed are stunted. *Invasive FAC dominant not functioning as hydrophyte.

SOIL

Sampling Point: TP 13

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
0-3	10YR 3/2	97	10YR 4/6	2	C	PL	GrL	
			10YR 3/6	1	C	PL		
3-24+	10YR 3/1	50	7.5YR 5/6	<1	C	M	~~EXGrSCL~~	Mixed Matrices
	10YR 3/2	50						

[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: Extremely compacted gravel

Depth (inches): 3 in

Hydric Soil Present? Yes ____ No X

Remarks:

Extremely compacted gravel + cobble, industrial fill material. Small pockets of different soil colors reflecting mixed fill.

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 evidence of hydrology.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/1/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP14

Investigator(s): P. Stiles, C. Wilcox, J. Salo, J. Berg Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864245° Long: -124.089855° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 geomorphic low point under willow canopy. Isolated. Cowardin: PFO1AR0n
WETS climate rainfall data is wetter than normal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	65	✓	FACW
2. Salix sitchensis	25	✓	FACW
3.			
4.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	3		FAC
2.			
3.			
4.			
5.			
	3	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Agrostis gigantea	30	✓	FAC
2. Vicia sativa ssp. sativa	2		NL
3. Bromus diandrus	10	✓	NL
4. Anthoxanthum odoratum	2		FACU
5. Conium maculatum	5		FAC
6. Raphanus sativus	2		NL
7. Allium triquetrum	1		NL
8. Geranium dissectum	T		NL
9. Galium aparine	T		FACU
10. Symphyotrichum chilense	3		FAC
11. Dipsacus fullonum	1		FAC
	76	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1. Hedera helix	1	15.2/38	FACU
2.			
	1	= Total Cover	

% Bare Ground in Herb Stratum 24

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%
- ___ 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:
12. Festuca perennis 5 FAC
13. Holcus lanatus 1 FAC
14. Arrhenatherum elatius 4 UPL
shaded from willow overstory. Veg composition varies considerably.

SOIL

Sampling Point: TP 14

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
0-2	10YR 2/1+	100	/	/	/	/	L	
2-8	10YR 2/1+	100	/	/	/	/	GrL	
8-16	10YR 2/1	97	10YR 3/6	3	C	M	CL	less gravel

[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:

profile had iron trash throughout

Gravel fill from 2-8in. Clay increasing below.

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)
- ___ 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)

- X Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X 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): 16

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 8

Wetland Hydrology Present? Yes X No ____

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

Remarks:

Wetland hydrology restricted to low points within geomorphic position

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/1/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 15

Investigator(s): J. Berg, J. Sales, P. Stiles, C. Wilcox Section, Township, Range:

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

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864218 Long: -124.089790 Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 excavated at edge of willow canopy.
Climate WETS rainfall is wetter than normal

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. Salix hookeriana	30	✓	FACW
2.			
3.			
4.			
	30 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Prunus cerasifera	3		
2.			
3.			
4.			
5.			
	3 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Vicia sativa	50	✓	NL
2. Dipsacus fullonum	20	✓	FAC
3. Vicia villosa ssp. villosa	10		NL
4. Geranium dissectum	7		NL
5. Symphyotrichum chilense	1		FAC
6. Bromus diandrus	13		NL
7. Festuca perennis	20	✓	FAC
8. Rumex crispus	2		FAC
9. Conium maculatum	1		FAC
10. Holcus lanatus	1		FAC
11. Daucus carota	2		FACU
	127 = Total Cover		
Woody Vine Stratum (Plot size: ____)	25.4/63.5		
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0

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 ____ No X*

Remarks:
Dense herbaceous vegetation with some willow cover.

*Invasive FAC dominants not functioning as hydrophytes.

SOIL

Sampling Point: TP 15

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
0-2	10YR 2/2	100					L	
2-11	10YR 4/1	100					XGr SiL	Sig. increase gravel/cobble
11-16	2.5YR 3/1	100					Gr SiCL	
16-20	10YR 3/1	98	10YR 4/6	2	C	M	SiCL	

[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:

Industrial fill

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): 14in

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Well-drained, upland conditions. No evidence of hydrology

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/1/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 16

Investigator(s): J. Berg, P. Stiles Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864364° Long: -124.089460° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 at edge of willow canopy.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	90	✓	FACW
2.			
3.			
4.			
	90 = Total Cover		

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

Herb Stratum (Plot size: 5 ft)			
1. Vicia sativa ssp. Sativa	3		NL
2. Ranunculus repens	20	✓	FAC
3. Daucus carota	1		FACU
4. Rumex crispus	1		FAC
5. Plantago lanceolata	3		FAC
6. Anthoxanthum odoratum	30	✓	FACU
7. Festuca perennis	30	✓	FAC
8. Galium aparine	3		FACU
9. Geranium dissectum	2		NL
10. Rumex crispus	2		FAC
11. Agrostis stolonifera	1		FAC
12. Juncus effusus	2		
1.			
2.			
	98 = Total Cover		

% Bare Ground in Herb Stratum 4%

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 _____ No X*

Remarks:
* Invasive FAC dominants are not functioning as hydrophytes.

SOIL

Sampling Point: TP16

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					L	
5-10	10YR 3/1	100					L	increase gravel & clay
11-20	10YR 3/1	100					EXCBCL	increase cobble

[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:

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): 20

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

well-drained. No evidence of hydrology. Deep saturation reflects recent rains.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/1/24
Applicant/Owner: City of Arcata State: CA Sampling Point: TP 7
Investigator(s): J. Saker, C. Wilcox Section, Township, Range:
Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR): LRR A - MLRA 4B Lat: 40.864328° Long: -124.089421° Datum: WGS 84
Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes 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:
Excavated w/; small wetland under willow canopy. Directly adj. to and connected to Jacoby Creek, A TNW. Cowardin: PF01Br On

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. Salix hookeriana	80	✓	FACW
2.			
3.			
4.			
	80 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Scirpus microcarpus	10		OBL
2. Phalaris arundinacea	8		FACW
3. Ranunculus repens	25	✓	FAC
4. Agrostis stolonifera	38	✓	FAC
5. Festuca perennis	10		FAC
6. Anthoxanthum odoratum	2		FACU
7. Holcus lanatus	1		FAC
8.			
9.			
10.			
11.			
	94 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 6%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (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:
Vegetation composition restricted to area under willow canopy. Scirpus only in small (10ft x 10ft) standing water that is sparsely vegetated.

SOIL

Sampling Point: TP 17

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 3/1	100					SCL	
7-13+	10YR 3/1	97	7.5YR 3/4	3	C	M/PL	GrSCL	

[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:

Hard gravel layer @ 13 inches. Industrial fill

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)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- X 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)

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

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): 4

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

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:

Standing water in small 10ft x 10ft pool that is sparsely vegetated. Wetland hydrology, confined to geomorphic depression, has above ground connectivity to Jacoby Creek.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/1/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP18

Investigator(s): J. Soler, C. Wilcox, J. Berg Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): None, sloping Slope (%): 2

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864228 Long: -124.089453 Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

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

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

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

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

Remarks: upland bank of Jolly Giant Creek & wetland flood plain.

Climate WETS rainfall is wetter than normal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	90	✓	FACW
2. Picea sitchensis	5		FAC
3.			
4.			
	95	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5)			
1. Rubus armeniacus	4	✓	FAC
2. Camellia sasanqua	8	✓	NL
3.			
4.			
5.			
	12	= Total Cover	2.4/6

Herb Stratum (Plot size: 5)			
1. Allium triquetrum	75	✓	NL
2. Rumex crispus	2		FAC
3. Galium aparine	8		FACU
4. Phalaris arundinacea	15		FACW
5. Arrhenatherum elatius	8		UPL
6.			
7.			
8.			
9.			
10.			
11.			
	108	= Total Cover	21.6/54

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 1

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (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:

Veg composition typical in willow understory at this location.

SOIL

Sampling Point: TP18

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					L	many fine roots
6-14	10YR 4/1	7					SCL	occasional gravel / increased clay — Mixed Matrix
	10YR 3/2	93						

[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:

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 and elevated above adjacent wetland.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/1/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 19

Investigator(s): J. Berg, J. Salar, P. Stiles, C. Wilcox Section, Township, Range:

Landform (hillslope, terrace, etc.): Slough, alluvial Local relief (concave, convex, none): Sloping Slope (%): 5%

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864198° Long: -124.089403° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 at edge of Jacoby Creek Slough in the northern portion of the study area. Directly adj. and connected to Jacoby Creek, a TNW. Cowardin: PFO4DOn.
Climate WETS rainfall is wetter than normal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Picea sitchensis	80	✓	FAC
2. Salix hookeriana	8		FACW
3.			
4.			
	88	= Total Cover	

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

Herb Stratum (Plot size: 5ft)			
1. Scirpus microcarpus	6		OBL
2. Agrostis stolonifera	50	✓	FAC
3. Phalaris arundinacea	3		FACW
4. Anthoxanthum odoratum	5		FACU
5. Daucus carota	1		FACU
6. Symphyotrichum chilense	3		FAC
7. Rubus armeniacus	1		FACU
8. Geranium dissectum	1		NL
9. Rumex crispus	5		FAC
10. Dipsacus fullonum	6		FAC
11. Raphanus sativus	2		NL
	83	= Total Cover	16.6/41.5

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 19%

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	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 X No ____

Remarks: Hydrophytic veg. dominance becomes pronounced in slough. Herb cover under willow cover reduced, hydrophytic veg dominance diminishes with increasing elevation.

SOIL

Sampling Point: TP 19

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/1	97	10YR 4/6	3	C	M	SCL	
6-11	10YR 4/2	60	7.5YR 4/6	10	C	M	SCL	
	7.5YR 5/8	30						mixed fill matrix
11-21+	7.5YR 4/1	60					SCL	
	7.5YR 6/8	40						mixed fill matrices.

[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)
- X 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:

6-11 in horizon has mild hydrogen sulfide smell.
Soils show evidence of fill and manipulation with mixed matrices.

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)
- X Aquatic Invertebrates (B13)
- X 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)
- X 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 X No ___ Depth (inches): 6in

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

TP excavated at edge of slough. Wetland hydrology becomes more pronounced toward center of slough; TP ~ 6 inches above slough area. Water table coming up to 6in.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/9/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 20

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

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864119° Long: -124.090213° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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:

Climate WETS rainfall is wetter than normal

Cowardin: PEM1Ar0n

TP excavated in small depression. Hydrophytic veg dominance restricted to low point. Manipulated fill soils. Isolated.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Mentha pulegium	18	✓	OBL
2. Festuca arundinacea	10		FAC
3. Glyceria declinata	2		FACW
4. Hordeum brachyantherum	42	✓	FACW
5. Lotus hyssopifolia	5		OBL
6. Rumex crispus	1		FAC
7. Callitriche heterophylla	6		OBL
8.			
9.			
10.			
11.			
	83 = Total Cover		
	16.6/41.5		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 17

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	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 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:

Hydrophytic veg. dominance restricted to small geomorphic position. Hordeum brachyantherum likely seeded during soil storage as observed in other areas.

SOIL

Sampling Point: TP 20

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
0-3	10YR 3/1	~~100~~ 98	7.5YR 5/8	2	C	PL,	L	many roots - mass roots on packed soil layer. redox around mainset... some natural
3-12	5Y 5/1	96	10YR 4/4	4	C	PL	VagrSL	
12-18+	10YR 3/2	25					CoGrLS	Very compacted fill
	10YR 4/4	60						Mixed matrices
	5Y 5/1	10						
	10YR 3/1	5						

[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)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Compacted fill

Depth (inches): 12in.

Hydric Soil Present? Yes X No ___

Remarks:

5Y 5/1 is a fill color, not gley.

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)
- X 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)
- X Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X 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 X No ___

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

Remarks:

Wetland hydrology restricted to geomorphic low point. Stormwater dependent, perched on compacted gravel. Stunted or stressed plants (D1) may be a result of soil compaction rather than hydrology.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/9/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 21

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

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Convex, Sloping Slope (%): 5-10

Subregion (LRR): LRR A - MLRA 4B Lat: 40.86428° Long: -124.09095° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 excavated in upland area. Conditions representative of surrounding.
Climate WETS rainfall is wetter than normal

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Bromus diandrus	47	✓	NL
2. Geranium dissectum	12		NL
3. Plantago lanceolata	3		FACU
4. Festuca arundinacea	1		FAC
5. Daucus carota	1		FACU
6. Bromus hordeaceus	6		FACU
7. Cordylanthus pycnocephalus	1		NL
8. Vicia sativa	10		UPL
9. Dipsacus fullonum	3		FAC
10. Anthoxanthum odoratum	7		FACU
11. Juncus lescurii	1		FACW
	92 = Total Cover		18.4
			18.4/46
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 8%

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	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:
Veg composition representative of surrounding upland. Thatch over soils.

SOIL

Sampling Point: TP 21

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					L-SL	w/ occ. cobble + concrete
4-17	10YR 5/6	15					CoGrSL	mixed fill, compacted
	10YR 3/2	75						cobbly gravelly.
	10YR 4/2	5						
	10YR 4/4	5						
17-24+	2.5Y 4/2	100					Crushed Rock	Concrete and gravel

mixed matrices

[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.

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 and sloping.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/9/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 22

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

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863896° Long: -124.090030° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification:

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks: TP excavated near cater of shallow depression with willow cover. Isolated. Cowardin: PFO1Ar On.
Climate WETS rainfall is wetter than normal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiandra	20	✓	FACW
2. Salix hookeriana	33	✓	FACW
3.			
4.			
	53	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	10	✓	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Carex hendersonii	25	✓	FAC
2. Anthoxanthum odoratum	1		FACU
3. Lotus corniculatus	4		FAC
4. Dipsacus fullonum	30	✓	FAC
5. Lythrum hyssopifolia	1		OBL
6. Agrostis stolonifera	15		FAC
7. Methanolepium	1		OBL
8. Epilobium ciliatum	1		FACW
9. Juncus carota	1		FACU
10. Glyceria declinata	3		FACW
11.			
	81	= Total Cover	16.2/40.5
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 19

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (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:
Veg composition restricted to shallow depression. Evidence of past homeless encampment (garbage and fire damage) likely influences veg composition.

SOIL

Sampling Point: TP 22

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
0-2	10YR 3/2	100					L	
2-17	10YR 4/2	80	10YR 5/6	20	C	M/PL	SCL	w/occ. charcoal
17-24+	2.5Y 4/1	30	10YR 6/6	15	C	PL	GrCoSCL	fill, mixed.
/	10YR 4/2	25	/	/	/	/	/	Mixed matrix } fill w/
	10YR 3/2	30						Mixed matrix } debris

[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)
- ___ 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:

17-24in horizon → buried plastic + wood. Industrial fill.

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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X 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 X No ____

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

Remarks:

No primary indicators. Wetland hydrology closely associated with storm events.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/9/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 23

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

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

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863876° Long: -124.090098° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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:

Climate WETS rainfall is wetter than normal TP excavated in flat upland area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiandra	50	✓	FACW
2.			
3.			
4.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	4		FAC
2.			
3.			
4.			
5.			
	4	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Medicago polymorpha	25	✓	UPL
2. Geranium dissectum	9		NL
3. Dipsacus fullonum	4		FAC
4. Festuca myuros	27	✓	FACU
5. Anthoxanthum odoratum	4		FACU
6. Daucus carota	6		FACU
7. Symphyotrichum chilense	12		FAC
8. Plantago lanceolata	5		FACU
9. Rumex crispus	2		FAC
10. Bromus hordeaceus	1		FACU
11. Festuca perennis	20		FAC
12. Holcus lanatus	1		FAC
13. Hypochaeris radicata	1		FACU
2.			
	106	= Total Cover	21.2/53

% 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: 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:

Extremely dense herbaceous vegetation with pruned willow canopy. Veg composition typical of surrounding upland areas.

SOIL

Sampling Point: TP 23

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
0-3	10YR 2/2	100					L	
3-8	10YR 3/2	100					CoGrSL	
8-22+	2.5Y 4/2	99	10YR 5/6	<1%	C	PL	VCoGrLS	Redox on pedfaces, extremely compacted fill material

[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:

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, topsoil on fill. Conditions representative of surroundings. No evidence of hydrology.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/9/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP24

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

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

Subregion (LRR): LRR A - MLRA 4B Lat: 40.864023° Long: -124.089560° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

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

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 * Meets CCA wetland definition
Hydric Soil Present?	Yes ___	No X	
Wetland Hydrology Present?	Yes X	No ___	

Remarks: USACE wetter than normal rainfall period
TP excavated in shallow geomorphic lowpoint. Transitory hydrology, no hydric soils.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	70	✓	FACW
2.			
3.			
4.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	3		FAC
2.			
3.			
4.			
5.			
	3	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Equisetum arvense	4		FAC
2. Phalaris arundinacea	40	✓	FACW
3. Galium aparine	1		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	44	= Total Cover	
Woody Vine Stratum (Plot size: 5ft)			
1. Hedera helix	1		FACU
2.			
	1	= Total Cover	

% Bare Ground in Herb Stratum 56%

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	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:
Vegetation recently manipulated by homeless persons activity. Bare ground in herb layer reflects disturbance.

SOIL

Sampling Point: TP 24

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					SCL	
10-16	10YR 3/2	91	7.5YR 4/6	6	C	M	GrSCL	increase in sand from above.
			10YR 3/6	3	C	M		

[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 soils, but with minimal gravel

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)
- X 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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X 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 X No _____

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

Remarks:

No water table or saturation. Hydrology is likely closely associated with storm events and is transitory.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/9/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 25

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

Landform (hillslope, terrace, etc.): Saltmarsh Local relief (concave, convex, none): Concave Slope (%): 0-5

Subregion (LRR): LRR A - MLRA 4B Lat: 40.862745° Long: -124.089800° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (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 saltmarsh immediately east of the fill prism edge. Conditions representative. Water table normal. Directly adj. and connected to Jacoby Creek, a TNW Cowardin: E2EM1

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. Carex lyngbyei	25	✓	OBL
2. Deschampsia cespitosa	12		FACW
3. Potentilla anserina ssp. pacifica	4		OBL
4. Triglochin maritima	14	✓	OBL
5. Jaumea carnosa	11		OBL
6.			
7.			
8.			
9.			
10.			
11.			
	66 = Total Cover		13.2/33
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 34*

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	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 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:

* Dense thatch. Veg composition typical in jolly giant slough adj. to study area

SOIL

Sampling Point: TP25

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
0-2	7.5YR 3/2	100					Peat	
2-3	10YR 4/1	60	7.5YR 5/8	40	C	M	SCL	
3-8	7.5YR 3/4	50					SCL/Peat	woody debris, peat mixed w/ flood sediments. Many fine roots
	10YR 4/1	30	7.5YR 5/8	20	C	M		
8-12	10YR 3/2	93	10YR 4/6	3	C	M	CL	black lining, root pores (Mn?) → 4%
12-18+	7.5YR 3/4	50					Peat	buried peat
	7.5YR 4/6	50						

[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)
- X 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:

Salt marsh soils with a history of sediment input and manipulation. Buried peat at 12 inches, could be native, could be sawdust.

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)
- X 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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X 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 X No ___ Depth (inches): 3in

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Pronounced hydrology from brackish Jolly Giant Creek, tidally influenced at this location.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/9/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 26

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

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

Subregion (LRR): LRR A - MLRA 4B Lat: 40.862763° Long: -124.089842° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (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: Wetter than normal rainfall period. TP excavated on slope of fill prism, Elevated above adjacent wetland by ~ 24 inches.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Baccharis pilularis ssp. Consanguinea	18	✓	NL
2.			
3.			
4.			
5.			
	18 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Vicia sativa ssp. sativa	26	✓	UPL
2. Anthoxanthum odoratum	15		FACU
3. Ranunculus repens	27	✓	FAC
4. Dipsacus fullonum	T		FAC
5. Daucus carota	1		FACU
6. Galium aparine	1		FACU
7. Holcus lanatus	25	✓	FAC
8. Helminthotheca echioides	7		FAC
9. Symphyotrichum chilense	1		FAC
10.			
11.			
	103 = Total Cover		
Woody Vine Stratum (Plot size: ____)	26.6/51.5		
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum Ø

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (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: Dense herbaceous veg, typical of industrial fill edge.

SOIL

Sampling Point: TP 26

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	7.5YR3/1	100					L	
5-11	10YR3/1	45					SCL	mixed fill
	10YR3/2	30						mixed fill
	10YR4/6	5						ind. chunk of fill, rust
	10YR4/1	17	7.5YR3/4	3	C*	M		*relictual redox in 10YR4/1 clod.
11-16+	10YR4/1	>99%	7.5YR5/8	<1%	C	M	SCL	Cobble and rock at 16in.

[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:

rusting logging cable in 5-11 horizon. Abundant wood chunks and woody debris in 5-11 horizon. Abundant metal chunks in 11-16 horizon giving false redox colors.

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): 12.5

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Well-drained and sloping fill prism. No evidence of surface hydrology. Some saturation from buried wood chunks above 12 inches, but not representative of wetland conditions. Saturation at 12.5 inches, inconsistent, and associated with clay fill chunks.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/10/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP27

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

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

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863919 Long: -124.089919 Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 excavated in upland area between 3p wetland and 2p feature. Conditions representative of surrounding upland area.

WETS climate rainfall data is wetter than normal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	43	✓	FACW
2.			
3.			
4.			
	43 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	4		FAC
2.			
3.			
4.			
5.			
	4 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Dipsacus fullonum	15		FAC
2. Anthoxanthum odoratum	60	✓	FACU
3. Holcus lanatus	12		FAC
4. Vicia sativa	10		UPL
5. Daucus carota	3		FACU
6. Symphyotrichum chilense	3		FAC
7. Epilobium ciliatum	1		FACW
8.			
9.			
10.			
11.			
	104 = Total Cover		52/20.8
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: 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 ____	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: Dense herbaceous veg growth at edge of willow canopy.

SOIL

Sampling Point: TP 27

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
0-2	10YR 3/1	100					L	
2-9	10YR 3/2	>99	7.5YR 5/8	<1	C	M	GrSL	Minor redox mottled faces.
9-16+	10YR 3/2	90	10YR 4/4	8	C	M	VGrCoSL	Metal debris rusting
			10YR 5/2	2	D	PL		

[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:

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. No evidence of wetland hydrology.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/10/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP28

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

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863920° Long: -124.089870° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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	
Hydric Soil Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X* Meets CCA wetland definition
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

WETS climate rainfall data is wetter than normal

TP excavated in geomorphic position. No hydric soils or hydrophytic veg dominance.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiandra	90	✔	FACW
2.			
3.			
4.			
	90	= Total Cover	

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

Herb Stratum (Plot size: 5ft)			
1. Juncus patens	12		FACW
2. Holcus lanatus	5		FAC
3. Vicia villosa	18	✔	NL
4. Anthoxanthum odoratum	40	✔	FACU
5. Agrostis stolonifera	15		FAC
6. Vicia tetrasperma	T		NL
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	13/45

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

% Bare Ground in Herb Stratum 8

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:

Veg dominance varies. Marginal hydrophytic veg component restricted to geomorphic depression and willow canopy effect.

SOIL

Sampling Point: TP 28

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-5	10YR 3/2	100					L	many roots
5-13	2.5Y 3/1	100					CoGr SL	
13-18+	10YR 3/1	92	10YR 5/6	8	C	M	SCL	metal debris noting w/occ gravel compacted

[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 soils. No evidence of hydric soil indicators

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1) on willow trunk
- ___ 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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X 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 X No _____

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

Remarks:

weak hydrology indicators with no soils and weak hydrophytic veg suggests very temporary pooling during storm events.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/10/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 29

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

Landform (hillslope, terrace, etc.): Alluvial plain, Saltmarsh Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.861984° Long: -124.090530° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: PEM1C

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks:

WETS climate rainfall data is wetter than normal

TP excavated in saltmarsh in slough south of fill. Directly adj to and connected to Jacoby Creek, a TNW. Cowardin: E2EM1.

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. Jaumea carnosa	14		OBL
2. Triglochin maritima	15		OBL
3. Salicornia pacifica	1		NL (OBL)
4. Distichlis spicata	68	✓	FACW
5. Castilleja ambigua ssp. humboldtiensis	1		FACW
6. Spartina densiflora	1		OBL
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		50/20

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum Ø

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:

X 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:

Vegetation comporition typical of mid-high saltmarsh in the vicinity

SOIL

Sampling Point: TP29

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-1	7.5YR 3/2+	100					Peat	
1-5	N4/	80	10YR 4/4	15	C	M/PL	C	
			7.5YR 3/4	5	C	PL		
5-9+	10BG 3/1	96	7.5YR 3/4	<1	C	PL	C	
			Black	4				No hydrogen peroxide reaction

[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)**
- X 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:

Native saltmarsh soils

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)
- X Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- X 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)

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

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 0.5 in

Water Table Present? Yes X No ___ Depth (inches): 9 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:

Pronounced hydrology provided by brackish tidal waters.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/10/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 30

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

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): None, Sloping Slope (%): 20

Subregion (LRR): LRR A - MLRA 4B Lat: 40.862012° Long: -124.090554° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 excavated on fill slope just above saltmarsh.

WETS climate rainfall data is wetter than normal

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: 5ft)			
1. Baccharis pilularis ssp. consanguinea	30	✓	NL
2.			
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Bromus racemosus	30	✓	NL
2. Vicia sativa ssp. sativa	3		UPL
3. Festuca myuros	15	✓	FACU
4. Brassica nigra	1		NL
5. Anthoxanthum odoratum	10		FACU
6. Cotula coronopifolia	14		FAC
7. Festuca perennis	6		FAC
8. Rumex crispus	2		FAC
9. Dipsacus fullonum	4		FAC
10.			
11.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 15*

17/42.5

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (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: Thatch. Vegetation reflects sloping upland fill slope conditions.

SOIL

Sampling Point: TP 30

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1	10YR 3/1	100					L	
1-17+	10YR 3/1	100					SCL	w/ occ. cobble

[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 soils. Occ. inclusions of clay nodules as part of fill.

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:

10/11 drained, sloping fill. TP elevated above adj. marsh by ~3ft.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/11/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP31

Investigator(s): C. Wilcox, J. Salter Section, Township, Range:

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

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863452° Long: -124.089663° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 * Meets CCA wetland definition
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: In low spot behind berm bordering Jolly Giant Creek (west) in depression. Hydric soils from Jolly Giant floodplain used in berm.

WETS climate rainfall data is wetter than normal

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	2		FAC
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Scirpus microcarpus	22	✓	OBL
2. Elymus triticoides	25	✓	FAC
3. Ranunculus repens	16		FAC
4. Anthoxanthum odoratum	7		FACU
5. Vicia sativa ssp. sativa	25	✓	UPL
6. Dipsacus fullonum	2		FAC
7. Symphyotrichum chilense	5		FAC
8. Holcus lanatus	1		FAC
9.			
10.			
11.			
	103 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum Ø

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (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:

Dense herbaceous vegetation. Scirpus dominance restricted to geomorphic low point.

SOIL

Sampling Point: TP31

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 3/1	100					SCL	many roots Topsoil
7-9	10YR 3/1	80	7.5YR 5/8	<1%	C	M	SCL	mixed matrix occ. cobble
	2.5Y 2/1	15						Mixed Matrices
	7.5YR 5/8	5 wl	some in situ redox					Mixed Matrices
9-14	N 4/	75	10YR 5/8	5	C	PL/M	CL	Actual in situ redox occ. cobble
	10YR 5/8	19	black organic matter		C	PL		This 10YR 5/8 is fill-relict
14-22+	10YR 3/1	50	mixed fill				SCL	
	N4/ 7.5YR 5/8	20 20						

[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:

Relict hydric fill soils in 7+ layers, but also seeing subtle in situ redox features - diffuse boundries in matrix & pore linings.

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)
- X 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 evidence of primary wetland hydrology indicators. Marginal hydric soil development and weak hydrophytic veg dominance support conclusion that insufficient wetland hydrology present to form 3p wetland conditions.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/11/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP32

Investigator(s): C. Wilcox J. Salter Section, Township, Range:

Landform (hillslope, terrace, etc.): slight incline on Industry fill Local relief (concave, convex, none): none Slope (%): 1-3

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863524° Long: -124.089697 Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

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

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

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

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

Remarks: Upland paired pit to TP31. **WETS climate rainfall data is wetter than normal** shallow swale. Condition representative of surrounding upland. Elevated above, adjacent

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	7	✓	FAC
2.			
3.			
4.			
5.			
	7 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Vicia villosa ssp. villosa	15		NL
2. Anthoxanthum odoratum	20	✓	FACU
3. Bromus diandrus	50	✓	NL
4. Daucus carota	1		FACU
5. Hypochaeris radicata	2		FACU
6. Plantago lanceolata	1		FACU
7. Rumex crispus	2		FAC
8. Symphyotrichum chilense	1		FAC
9. Geranium dissectum	1		NL
10. Juncus effusus	10		FACW
11. Juncus patens	5		FACW
	107 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum Ø

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.

21.4/53.5

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Vegetation Composition typical of surrounding upland.

SOIL

Sampling Point: TP32

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					grSCL	many roots
5-8	2.5Y 4/1	80	7.5YR 5/8	1	C	M	c/gr SCL	Fill material
	10YR 3/1	19						mixed matrices
8-16	10YR 3/1	100					cgr LS	
16-18+	10YR 3/1	30	} mixed fill				cgr LS	Mixed fill
	2.5Y 4/1	15						Matrices.
	7.5YR 5/6	55						

[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:

Cobbly fill soils. many different fill sources

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:

Sloping, no evidence of wetland hydrology.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/11/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP33

Investigator(s): C. Wilcox, J. Saler Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill terrace Local relief (concave, convex, none): slightly concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863694° Long: -124.090024° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification:

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 ____	
Hydric Soil Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X* Meets CCA wetland definition
Wetland Hydrology Present?	Yes X	No ____	

Remarks: TP excavated in Juncus lescurii dominated area, surrounded by concrete. No soils, weak hydrology indicators

WETS climate rainfall data is wetter than normal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	30	✓	FACW
2.			
3.			
4.			
	30 = Total Cover		

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

Herb Stratum (Plot size: 5ft)			
1. Juncus lescurii	95	✓	FACW
2. Symphyotrichum chilense	6		FAC
3. Mentha pulegium	1		OBL
4. Rubus ursinus	1		FAC
5. Cyperus eragrostis	T		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	103 = Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum Ø

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	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 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:

Juncus lescurii overwhelmingly dominant. restricted to small area, not depressed.

SOIL

Sampling Point: TP 33

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
0-3	7.5YR 3/1	100					L	Many roots
3-8	10YR 3/2	100					GrSL	
8-15	2.5Y 4/1	>99%	10YR 4/6	<1%	C	M/PL	V CoGr SCL	Very compacted, metal chunks
15-18+	10YR 3/1	97	10YR 4/6	3	C	M	CL	Very compacted

[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:

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)
- X Algal Mat or Crust (B4) (minimal)
- ___ 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)

- X 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)
- X 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 X No _____

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

Remarks:

Wetland hydrology indicators are very faint. Transitory hydrology dependent on storm events.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/11/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP34

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

Landform (hillslope, terrace, etc.): Inactive fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863388° Long: -124.090431° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 shallow depression connected to linear swale that drains down the center of the site and eventually into Jolly Giant Creek, at NW. **WETS climate rainfall data is wetter than normal** Cowardin: PFO1Brdn

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. Salix hookeriana	90	✔	FACW
2.			
3.			
4.			
	90 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	2		
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Carex hendersonii	15	✓	FAC
2. Equisetum arvense	1		FAC
3. Glyceria declinata	1		FACW
4. Poa trivialis	40	✓	FAC
5. Holcus lanatus	1		FAC
6. Polystichum munitum	10		FACU
7.			
8.			
9.			
10.			
11.			
	68 = Total Cover		
Woody Vine Stratum (Plot size: ____) 13.16/34			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 32

Dominance Test worksheet:

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

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

- X 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: Dense willow canopy limits herbaceous vegetation growth. Recent houseless activity has also reduced herbaceous cover and has left abundant garbage.

SOIL

Sampling Point: TP 34

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
0-25	10YR 2/1	100					SL	
25-34	2.5Y 4/1	80	7.5YR 4/6	20	C	M	SCL	

[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)
- X 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:

Well developed deep, dark soils.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- X 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)
- X 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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- X 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): 20 in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 11 in

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Shallow swale collects stormwater from surrounding concrete/impervious surfaces. flows into linear swale that eventually drains into Jolly Grant Creek.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 4/11/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 35

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

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

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863482° Long: -124.090502° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 excavated in flat upland area, adjacent to shallow swale described in TP 34.
WETS climate rainfall data is wetter than normal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	20	✓	FACW
2.			
3.			
4.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Baccharis pilularis ssp. consanguinea	15	✓	UPL
2. Rubus armeniacus	35	✓	FAC
3.			
4.			
5.			
	50	= Total Cover	
Herb Stratum (Plot size: 5ft)		10/25	
1. Anthoxanthum odoratum	80	✓	FACU
2. Geranium dissectum	6		NL
3. Cardus pycnocephalus	3		NL
4. Cerastium fontanum	T		FACU
5. Symphyotrichum chilense	T		FAC
6. Hypericum perfoliata	T		FACU
7. Vicia sativa	T		UPL
8.			
9.			
10.			
11.			
	89	= Total Cover	17.0/44.5
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 11

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (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: Vegetation composition representative of uplands in vicinity.

SOIL

Sampling Point: TP35

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	10YR 2/2	100					SL	Many fine roots, occ. cobble
3-10	10YR 4/1	100					GrLS	
10-16	10YR 4/1	97					VC GrLS	Fill, mixed matrices
	7.5YR 5/6	3						weathering clasts.

[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:

10-16 horizon with large boulders.

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 evidence of wetland hydrology. Well-drained

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/23/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP36

Investigator(s): C. Wilcox, J. Salter Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1°

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863273 Long: -124.090126 Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes 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 linear drainage swale. Isolated. Cowardin: PSS1CxOn

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: 5ft)			
1. Salix hookeriana	75	✓	FACW
2. Rubus armeniacus	6		FAC
3.			
4.			
5.			
	81 = Total Cover		40.5 / 16.2
Herb Stratum (Plot size: 5ft)			
1. Juncus hesperius	15	✓	NL(FACW)
2. Cyperus eragrostis	1		FACW
3. Mentha pulegium	2		OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	18 = Total Cover		9 / 3.6
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 82

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	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 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: Sparsely vegetated concave surface for the majority of the wetland. Some hydrophytic herbaceous species along fleperimeter. Shrubby willow cover overlaps wetland.

SOIL

Sampling Point: TP 36

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
0-3	Organic Material						OE	Duff and Litter. minor decomp.
3-9	.5Y 5/1	100					Loam	
9-17	2.5Y 2.5/1	95	7.5YR 5/8	5	C	M	CL	redox% increases w/ depth

[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)
- X 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:

* Strong AAD reaction. within 12" of mineral soil surface. Start indicator depth at 3" for delineation 0-3" leaf litter, poorly decomposed.

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)
- X 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)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- X 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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X 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 X No ___ Depth (inches): 6in

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:

Linear drainage feature with pronounced wetland hydrology. Wetland 9 flows into wetland 10 over concrete, water pools in wetland 10 and does not flow into Jacoby Creek / Butcher Slough.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/23/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP37

Investigator(s): J. Saler, C. Wilcox Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): none Slope (%): 2-4

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863280 Long: -124.090117 Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: none

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

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

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

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

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

Remarks: TP excavated immediately adj. to linear drainage swale Wetland (see TP36). Upland ~20 inches elevation above wetland. Conditions present typical of surrounding area.

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: 5ft)			
1. Salix hookeriana	55	✓	FACW
2. Rubus armeniacus	8		FAC
3.			
4.			
5.			
	63 = Total Cover		31.5 / 12.6
Herb Stratum (Plot size: 5ft)			
1. Anthoxanthum odoratum	50	✓	FACU
2. Vicia sativa	7		UPL
3. Holcus lanatus	18	✓	FAC
4. Briza maxima	3		NL
5. Symphyotrichum chilense	1		FAC
6. Poa trivialis	T		FAC
7.			
8.			
9.			
10.			
11.			
	79 = Total Cover		39.5 / 15.8
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 21%

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (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 ____ No X*

Remarks: Vegetation composition typical of upland area at edge of willow canopy. *Invasive FAC dominant not acting as hydrophytes, Willow rooted in adjacent wetland.

SOIL

Sampling Point: TP 37

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					L	w/occ. gravel
6-16	2.5Y 4/1	100					VGrCoLS	fill material

[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 soils typical offsite.

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 upland conditions.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/23/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP30

Investigator(s): C. Wilcox, S. Salver Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): slightly concave Slope (%): 2-5

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863243° Long: -124.090241 Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: none

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

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

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

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

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

Remarks: Industrial fill, adjacent to concrete pad. Sypor compacted.

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: 5ft)			
1. Rubus armeniacus	18	✓	FAC
2.			
3.			
4.			
5.			
	18 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Hordeum Marinum	30	✓	FAC
2. Linum bienne	2		NL
3. Mentha pulegium	28	✓	OBL
4. Briza Maxima	3		NL
5. Festuca myuros	2		FACU
6. Plantago lanceolata	1		FACU
7. Lotus corniculatus	13		FAC
8. Festuca perennis	2		FAC
9. Cyperus eragrostis	7		FACW
10. Bromus hordeaceus	2		FACU
11. Anthoxanthum odoratum	15		FACU
	104 = Total Cover		52/20.8
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (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
- ___ 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: Vegetation composition restricted to shallow depression.

SOIL

Sampling Point: TP 38

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
0-3	10YR 2/2	100					L	
3-11	10YR 3/1	100					GrSL	Compacted
11-16+	10YR 4/1	100					VCoGrLS	Very compacted

[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:

Industrial fill, typical of the site.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X 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 X No _____

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

Remarks:

Slight geomorphic depression. No evidence of primary wetland hydrology.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/23/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP39

Investigator(s): J. Sater, C. Wilcox Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): slightly concave Slope (%): 2-4

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863813° Long: -124.090752° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: none

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

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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: Testpit next to 1st at slight concavity w/ strong hydrophytic veg. dominance. Isolated. Cowardin: PEM1ArOh

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Baccharis pilularis ssp. consanguinea	2	✓	NL
2. Rubus armeniacus	8	✓	FAC
3.			
4.			
5.			
	10 = Total Cover		5/2
Herb Stratum (Plot size: 5ft)			
1. Carex hendersonii	41	✓	FAC
2. Equisetum arvense	5		FAC
3. Festuca arundinacea	28	✓	FAC
4. Dipsacus fullonum	6		FAC
5. Juncus effusus	9		FACW
6. Anthoxanthum odoratum	3		FACU
7. Symphyotrichum chilense	2		FAC
8. Juncus patens	3		FACW
9. Holcus lanatus	2		FAC
10. Vicia sativa	1		UPL
11.			
	100 = Total Cover		50/50
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum Ø

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: Hydrophytic vegetation dominance restricted to geomorphic depression.

SOIL

Sampling Point: 39

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
0-3	10YR 2/2	100					L	
3-8	10YR 3/1	95	5YR 4/6	5	C	M+PL	VGrSL	Fill
8-17+	10YR 3/1	80	5YR 3/4	20	C	M	CL	possible native soils

[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:

Well developed hydric soils.

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)
- X 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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X 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 X No ___

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

Remarks:

Wetland hydrology restricted to depression and is likely highly dependent upon precipitation.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/23/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 40

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

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): None Slope (%): 10°

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863834 Long: -124.090669 Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

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

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

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

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

Remarks: TP excavated in upland conditions just outside of wetland described at TP 39.

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: 5ft)			
1. Baccharis pilularis ssp. consanguinea	42	✓	NL
2. Rubus armeniacus	4		FAC
3.			
4.			
5.			
	46 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Raphanus sativus	40	✓	NL
2. Dipsacus fullonum	50	✓	FAC
3. Anthoxanthum odoratum	12		FACU
4. Geranium dissectum	1		NL
5. Poa trivialis	1		FAC
6. Carduus pycnocephalus	2		NL
7. Allium triquetrum	T		NL
8.			
9.			
10.			
11.			
	106 = Total Cover 53 21.2		
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: 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: Dense herbaceous cover comprised of invasive species, typical on raised area outside of wetland.

SOIL

Sampling Point: TP 40

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 2/2	100					SCL	
5-11	10YR 3/2	100					CoGrSCL	
11-16	10YR 3/1	100					VCoGrSL	Compacted

[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 soils.

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:

Upland, well-drained and sloping.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/23/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP41

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

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.862788° Long: -124.091620° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

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

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

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

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

Remarks: TP excavated in geomorphic position. Angled boulders in soil profile. Recent soil movement and manipulation adjacent.

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: 5ft)			
1. Salix hookeriana	60	✓	FACW
2. Rubus armeniacus	10		FAC
3. Rubus ursinus	8		FACU
4.			
5.			
	78 = Total Cover		39/15.6

Herb Stratum (Plot size: 5ft)			
1. Juncus hesperius	6	✓	NL(FACW)
2. Rumex crispus	4		FAC
3. Symphyotrichum chilense	2		FAC
4. Agrostis stolonifera	7	✓	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	19 = Total Cover		9.5/3.8

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 81

Dominance Test worksheet:

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

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

- 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: Sparsely vegetated concave surface.

SOIL

Sampling Point: TP 41

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
0-8	10YR 3/2	100					VCoGr SCL	
8-15	10YR 3/2	40					FxCoGr SCL	3 Mixed matrices, some angular boulders present & very compacted
	2.5Y 5/1	30						
	10YR 4/6	30						
15-17+	10YR 3/1	90	7.5YR 3/4	10	C	M	CL	

[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:

8-15 horizon → ped faces, difficult to determine if infrequent (<1%) coloration is redox or parent material (10YR 4/6). 10YR 4/6 weathering clasts & matrix from other source - not in situ.

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)
- X 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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- X 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 X No _____

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

Remarks:

Wetland hydrology likely transitory and dependent upon precipitation.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/29/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP42

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

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

Subregion (LRR): LRR A - MLRA 4B Lat: 40.862725° Long: -124.090345° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 _____	
Hydric Soil Present?	Yes _____	No X	Is the Sampled Area within a Wetland? Yes _____ No X* meets CCA wetland definition
Wetland Hydrology Present?	Yes X*	No _____	

Remarks: TP excavated in extremely compacted fill, that appears to have water puddling during storm events, that then evaporates over time. In access road with regular use. Artificial

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. Lythrum hyssopifolia	10		OBL
2. Polypogon monspeliensis	1		FACW
3. Juncus bufonius	30	✓	FACW
4. Festuca perennis	2		FAC
5. Hordeum marinum	7		FAC
6. Festuca myuros	3		FACU
7. Linum bienne	2		NL
8. Parentucellia viscosa	1		FAC
9. Lupinus bicolor	1		NL
10. Melilotus indicus	1		FACU
11. Briza minor	1		FAC
12. Triphysaria versicolor ssp. versicolor	1		NL
1.			
2.			
	59 = Total Cover		29.5 / 11.8

% Bare Ground in Herb Stratum 41%

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:

- X 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: Veg limited in cover by extremely compacted soils and regular disturbance due to use of the area for access. Veg composition representative of surrounding compacted area.

SOIL

Sampling Point: TP42

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
0-2	7.5Y 3/2	97	7.5YR 5/8	3	C	PL	GrSL	Many reddish roots
2-12	2.5Y 4/1	>99	7.5YR 5/8	<1	C	M/PL	ExGrSL	Extremely compacted fill w/ occ. cobble.
12-25+	5Y 2.5/1	100	—	—	—	—	CL	

[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: compacted gravel roadway / pads

Depth (inches): 2"

Hydric Soil Present? Yes ___ No X

Remarks:

Fine roots with similar redox color, but not oxidized rhizospheres. Stormwater unable to infiltrate through extremely compacted 2-12 fill layer, and perches on top. Minimal evidence of 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)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X 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)
- X Geomorphic Position (D2) Shallow.
- ___ Shallow Aquitard (D3)
- X 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 X* No ___

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

Remarks:

Hydrology indicators suggest water puddles on compacted substrate during and after storm events until water evaporates. * Artificial conditions with little habitat value.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/29/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 43

Investigator(s): Joseph Sater, Cody Wilcox Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave, shallow Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.862650° Long: -124.090089 Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation ____, Soil X, 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 shallow depression with evidence of stormwater dependent hydrology. Isolated. Cowardin: PEM1Ar0n

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. Juncus bufonius	10		FACW
2. Lythrum hyssopifolia	18		OBL
3. Isolepis cernua	14	✓	OBL
4. Cyperus eragrostis	5		FACW
5. Hordeum marinum	2		FAC
6. Methapogegium	15	✓	OBL
7. Festuca perennis	3		FAC
8. Festuca myuros	T		FACU
9.			
10.			
11.			
	67 = Total Cover		33.5 / 13.4

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 33%

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	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: Vegetation composition restricted to shallow depression. Recent disturbance nature of the site has reduced veg cover.

SOIL

Sampling Point: TP43

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
0-1	7.5YR3/2	98	7.5YR5/8	2	C	M+PL	GrSL	Many fine roots
1-18	2.5Y3/1	89	7.5YR5/8	5	C	PL	VGrCoLS	Very compacted, redox on ped faces.
/	7.5YR4/6	5	/	/	/	/	/	Imported clasts
/	5Y2.5/1	1	/	/	/	/	/	clast color
18-29+	5Y2.5/1	92	7.5YR5/8	8	C	M	CL	

[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:

some iron chunks and wire in 1-18 horizon.

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)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X 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)
- X Geomorphic Position (D2) (Shallow)
- ___ Shallow Aquitard (D3)
- X 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 X No _____

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

Remarks:

Hydrology appears transitory and dependent on stormwater from precipitation events. Habitat conditions more developed than other middle areas.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/29/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP44

Investigator(s): C. Wilcox, J. Saler Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Slope (%): 0-2%

Subregion (LRR): LRR A - MLRA 4B Lat: 40.862720° Long: -124.090058° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

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

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

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

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

Remarks: Upland pit for TP43 on raised soils pile.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Anthoxanthum odoratum	25	✓	FACU
2. Vicia sativa	10		UPL
3. Juncus hesperii	15		FACW
4. Briza maxima	6		NL
5. Festuca myuros	1		FACU
6. Poa trivialis	15		FAC
7. Vicia tetrasperma	30	✓	NL
8. Carex hendersonii	3		FAC
9. Geranium dissectum	1		NL
10. Potentilla anserina ssp. pacifica	T		OBL
11. Holcus lanatus	5		FAC
Cynosurus echinatus	T		NL
1. Briza minor	T		FAC
2. Hordeum marinum	T		FAC
	111 = Total Cover		55.5 / 22.2
% Bare Ground in Herb Stratum 0			

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:
Dense vegetation, such as that recorded above, exists on less compacted fill material in vicinity.

SOIL

Sampling Point: TP44

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
0-3	10YR 3/2	100					L	Many fine roots.
3-17	10YR 3/2	99+	5YR 4/6	<1%	C	M/PL	cgr SL	redox on occ. cobble faces & matrix
17-21	2.5Y 4/1	95	7.5YR 5/8	2	C	M/PL	cgr LS	on cobble face
			10YR 4/6	3	C	M		some redox color also color of imported fill material

[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: well drained soils with minimal soil development. Fill soils

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 soils slightly raised above depression recorded at TP43. No evidence of wetland hydrology.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/29/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 45

Investigator(s): Cindy Wilcox, Josef Sajer Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill, Swale Local relief (concave, convex, none): Concave, linear Slope (%): 0-3

Subregion (LRR): LRR A - MLRA 4B Lat: 40.862336° Long: -124.091088° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 within a linear drainage swale. Dominant hydrology indicators and native willow cover. Isolated. Cowardin: PFO1CxOn

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	82	✓	FACW
2. Salix lasiandra var. lasiandra	10		FACW
3.			
4.			
	92 = Total Cover		96/100
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	3		FAC
2.			
3.			
4.			
5.			
	3 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	8 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 100%

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:

X 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: Sparsely vegetated concave surface with dense willow canopy.

SOIL

Sampling Point: TP 45

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 2.5/1	100					Oi	Thick Duff, slightly decomposing leaves
6-20	2.5Y 3/1	88	10YR 5/8	12	C	M	SiC	

[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)
- X 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:

strong a-acid reaction. Thick developed hydric soils in drainage basin.

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)
- X 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)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- X 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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X 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 X No ____ Depth (inches): 6in

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:

Pronounced wetland hydrology restricted to linear swale that passes through a series of culverts.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/29/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 46

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

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

Subregion (LRR): LRR A - MLRA 4B Lat: 40.862371° Long: -124.091060° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 excavated in upland above linear swale recorded at TP45. Willow cover present extending from swale where they are rooted.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. Salix hookeriana	60	✓	FACW
2.			
3.			
4.			
	60 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Baccharis pilularis ssp. consanguinea	7	✓	NL
2. Rubus armeniacus	15	✓	FAC
3.			
4.			
5.			
	22 = Total Cover		44
Herb Stratum (Plot size: 5ft)			
1. Anthoxanthum odoratum	43	✓	FACU
2. Vicia sativa	38	✓	UPL
3. Holcus lanatus	4		FAC
4. Briza maxima	2		NL
5. Cardus pycnocephalus	1		NL
6.			
7.			
8.			
9.			
10.			
11.			
	88 = Total Cover		44/126
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 12

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 _____	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: Veg composition typical in upland with willow cover.

SOIL

Sampling Point: TP 46

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/2	100					L	Many fine roots
4-9	10YR 3/2	100					VGr LS	very compacted
9-20+	2.5Y 3/1	>99	7.5YR 5/8	<1	C	M	VCoGrLS	Very compacted

[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:

Very compacted fill soils typical of surrounding upland fill

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 and elevated above adjacent wetland. Upland conditions typical of surrounding area.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/29/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP47

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

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.862099° Long: -124.091019° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 shallow depression along backside of berm separating industrial fill from Jacoby Creek Slough. Directly adjacent, with above ground connectivity. Cowardin: PEM1Ax0h

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Oenanthe sarmentosa	60	✓	OBL
2. Typha latifolia	3		OBL
3. Agrostis stolonifera	28	✓	FAC
4. festuca perennis	5		FAC
5. Hordeum brachyantherum	2		FACW
6. Elymus triticoides	15		FAC
7. Holcus lanatus	7		FAC
8.			
9.			
10.			
11.			
	120 = Total Cover		50/24
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: 2 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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: Dense hydrophytic vegetation restricted to shallow swale/depression. Well developed wetland vegetation cover and native dominance.

SOIL

Sampling Point: TP47

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	7.5YR 2.5/2	100					L	
7-20+	10YR 3/1	94	7.5 YR 3/4	5	C	M	SCL	w/occ. fill nodules
			10YR 6/6	1	C	M		gravelly fill increases w/ depth.

[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:

Thick topsoil over loose fill, well drained

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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X 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 X No _____

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

Remarks:

Well drained soils likely prevent persistent pooling.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/29/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP48

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

Landform (hillslope, terrace, etc.): Industrial Fill Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR): LRR A - MLRA 4B Lat: 40.862124° Long: -124.091046° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification:

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 excavated in upland adjacent to wetlands recorded at TP47. Conditions typical of upland in vicinity.

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. Briza Maxima	21	✓	NL
2. Vicia sativa	30	✓	UPL
3. Festuca arundinacea	12		FAC
4. Festuca perennis	15		FAC
5. Agrostis stolonifera	8		FAC
6. Bromus hordeaceus	3		FACU
7. Symphyotrichum chilense	3		FAC
8. Anthoxanthum odoratum	5		FACU
9. Hordeum brachyantherum	1		FACW
10.			
11.			
	98 = Total Cover	49	19.6

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 2%

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: Ø (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: Veg. composition varies in vicinity related to soil depth, concrete and other historic disturbance reasons.

SOIL

Sampling Point: TP48

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
0-8	10YR3/2	100					CoGrSL	topsoil forming
8-19	2.5Y 4/1	99+	7.5YR5/8	<1%	C	M	ExCoGrSL	very compacted fill
19-27+	5Y2.5/1	85	5YR 4/4	15	C	M	SiCL	native?

[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: compacted fill over possible native slaghsoils.

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: Elevated above adjacent wetland, typical of surroundings. Upland, with no evidence of wetland hydrology.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/29/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP49

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

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.862246° Long: -124.090428° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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: Trexcavated in shallow depression with hydrophytic veg dominance and hydric soils. Weak hydrology indicators. Isolated. Cowardin: PEM1Ar On.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	4		FAC
2.			
3.			
4.			
5.			
	4 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Typha latifolia	15		OBL
2. Agrostis stolonifera	47	✓	FAC
3. Helminthotheca echioides	4		FAC
4. Rumex crispus	2		FAC
5. Festuca perennis	10		FAC
6. Anthoxanthum odoratum	2		FACU
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		40/18
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 20%

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: Small depression supports hydrophytic vegetation including Typha.

SOIL

Sampling Point: TP 49

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					L	
4-19+	5Y 2.5/1	91	10YR 5/8	1	C	M	SiCL	red roots present in addition to redox.
			7.5YR 5/8	8	C	M+PL		

[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:

Gravel abundant at 4-6in w/ 10YR 3/2 color, GrCoLS.

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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X 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 X No ____

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

Remarks:

Weak wetland hydrology indicators suggest transitory and stormwater related hydrology.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/29/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 50

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

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

Subregion (LRR): LRR A - MLRA 4B Lat: 40.862215° Long: -124.090445° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 excavated in upland area between wetlands recorded at TP 49+51.

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: 5ft)			
1. Rubus armeniacus	10	✓	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Conium maculatum	1		FAC
2. Vicia sativa	50	✓	UPL
3. Symphyotrichum chilense	10		FAC
4. Holcus lanatus	13		FAC
5. Anthoxanthum odoratum	15		FACU
6. Helminthotheca echioides	2		FAC
7. Briza maxima	15		NL
8. Bromus hordeaceus	1		FACU
9. Cynosurus echinatus	1		NL
10. Festuca perennis	3		FAC
11. Carduus pycnocephalus	4		NL
	115 = Total Cover		57.5/23
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: 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 _____	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: Dense herbaceous vegetation typical of upland surrounding area.

SOIL

Sampling Point: TP 50

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
0-3	10YR 3/2	100	—	—			L	many fine roots
3-11	10YR 3/2	100	—	—	—	—	cogr SL	compacted fill soil
11-18	5Y 2.5/1	80	7.5YR 5/8	20	C	M	SiCL	fine 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:

Elevated gravel pile above TP49. slightly compacted

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 upland, elevated.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/29/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP51

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

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.862135 Long: -124.090425 Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification:

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes 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: Upland paired pit is TP50. Cowardin: PEM1Ax0n. TP excavated in shallow swale behind berm seperating industrial fill from Jacoby Creek slough. Feature is directly adjacent w/ above ground connectivity.

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. Agrostis stolonifera	62	✓	FAC
2. Hordeum brachyantherum	3		FACW
3. Festuca perennis	15		FAC
4. Lotus corniculatus	15		FAC
5. Holcus lanatus	3		FAC
6. Symphyotrichum chilense	1		FAC
7. Daucus carota	1		FACU
8. Vicia sativa	1		UPL
9.			
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: Dense herbaceous vegetation composition changes throughout wetland. Overall dominant portions as well as Elymus triticoides.

SOIL

Sampling Point: TP 51

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
0-2	5Y 5/1	100					GrLS	many fine roots
2-14	7.5YR 2.5/1	94	5YR 3/4	6	C	M+PL	SCL	
14-22	2.5Y 4/2	88	7.5YR 3/4	12	C	M	CL	

[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)
- X 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: Thick dark soils

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X 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)
- X 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 X No ____

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

Remarks: Transitory wetland hydrology suggests wetland hydrology is closely associated with storm events.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/29/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP52

Investigator(s): J. Sale, C. Wilcox Section, Township, Range:

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863108 Long: -124.089850 Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 * Meets CCA wetland definition
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: TP excavated in depression downslope from drainage swale.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Mentha pulegium	17	✓	OBL
2. Festuca perennis	25	✓	FAC
3. Hordeum marinum	3		FAC
4. Lythrum hyssopifolia	6		OBL
5. Vicia sativa	1		UPL
6. Juncus bufonius	T		FACW
7. Isolepis cernua	25	✓	OBL
8. Polygon monspeliensis	T		FACW
9. Briza minor	T		FAC
10. Leontodon saxatilis	1		FACU
11. Trifolium dubium	T		FACU
	78 = Total Cover		39 / 15.6
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 22

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (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: Vegetation composition restricted to geomorphic depression. Species vary widely in vicinity.

SOIL

Sampling Point: TP52

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 3/2	100					GrCoLS	Loose fill
11-13	2.5Y 3/1	95	7.5YR 5/6	5	C	M	CL	w/ woody debris
13-20+	10YR 4/6	15					C	Mixed fill Matrices
	10YR 5/4	80						w/ woody debris
	2.5Y 6/3	5						

[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: Loose gravelly fill material over disturbed soils. Woody debris & charcoal abundant.

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)
- X 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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X 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): 20.5

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): 19 in

Wetland Hydrology Present? Yes X No _____

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

Remarks: Stormwater dependent hydrology restricted to geomorphic depression.

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

Project/Site: Little Lakes City/County: Arcata, Humboldt Sampling Date: 5/29/24

Applicant/Owner: City of Arcata State: CA Sampling Point: TP 53

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

Landform (hillslope, terrace, etc.): Industrial fill Local relief (concave, convex, none): Concave (slight) Slope (%): 0-1 %

Subregion (LRR): LRR A - MLRA 4B Lat: 40.863186° Long: -124.089825° Datum: WGS 84

Soil Map Unit Name: MU 140 - Occidental, 0 to 2 percent slopes NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 3p wetland, directly adjacent to Jacoby Creek a TNW, w/ above ground connectivity. Cowardin: PEM1Ar On. TP52 is wetland TP.

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: 5ft)			
1. Rubus armeniacus	7	✓	FAC
2.			
3.			
4.			
5.			
	7 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Oenanthe sarmentosa	27	✓	OBL
2. Equisetum arvense	15		FAC
3. Holcus lanatus	10		FAC
4. Carex hendersonii	12		FAC
5. Mentha pulegium	1		OBL
6. Juncus hesperus	4		NL (FACW)
7. Briza maxima	1		NL
8. Symphyotrichum chilense	12		FAC
9. Agrostis stolonifera	5		FAC
10. Dipsacus fullonum	1		FAC
11. Anthoxanthum odoratum	13		FACU
	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: 2 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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: Dense herbaceous vegetation. Hydrophytic veg dominance restricted to wetland, however species composition varies widely.

SOIL

Sampling Point: TP53

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 2/2	95	7.5YR 4/4	5	C	M+PL	L	
11-24+	10YR 4/1	70	7.5YR 5/8	3	C	M	CoGrSL	
	10YR 2/2	27						mixed fill matrices

[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)
- 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:

Mixed fill soils

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)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X 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): 23 in

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Seasonal, precipitation dependent wetland hydrology indicators not present at time of delineation.

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U.S. Army Corps of Engineers (USACE)

INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-COR.

Form Approved - OMB No. 0710-0024 Expires: 2024-04-30

The Agency Disclosure Notice (ADN)

The Public reporting burden for this collection of information, 0710-0024, is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: Arcata Little Lake | Site Name: Stream1 OHWM#1 | Date and Time: 6/9/24 1:15

Location (lat/long): 40.962605 -124.089600 | Investigator(s): Cindy Wilcox

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [ ] topographic maps
- [x] Other: NHD

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

USACE WETS climatic data records normal conditions.

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc. mapped current channel in floodplain. Aerial shows different channel. Old channel scars indicate channel moves frequently. Jolly Giant Creek is a perennial stream that is connected to Humboldt Bay, a TNW.

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- [x] **Break in slope:**
  - [x] *on the bank:* TOB
  - [x] *undercut bank:* eOHWM
  - [ ] *valley bottom:*
  - [ ] Other: _____
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* _____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
- [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [x] **Secondary channels:** side channels & old channel scars

Sediment indicators

- [x] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* mucky SiC *to* CL
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators

- [ ] **Change in vegetation type and/or density:**

  Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

  - [x] *vegetation absent to:*
  - [ ] *moss to:*
- [x] *forbs to:* above & below OHWM
- [x] *graminoids to:* above & below OHWM
- [ ] *woody shrubs to:*
- [ ] *deciduous trees to:*
- [ ] *coniferous trees to:*
- [x] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

Ancillary indicators

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [x] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

Other observed indicators? Describe:

Slow slowing reach of Jolly Giant creek before entering H Bay slough. Carex lyngbyei predominates along banks & in channel. Floating aquatic veg growing in streams, Humboldt owls clover Triglochin maritima - seaside arrow grass

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Project ID #: stream 1 OHWM#4

Step 4 Is additional information needed to support this determination? ☐ Yes ☒ No If yes, describe and attach information to datasheet:

Step 5 Describe rationale for location of OHWM

Incised Jolly Giant Creek channel prior to flowing into slough. cutbanks, incision under OHWM. to to Top of bank at floodplain with predominant OBL to FACW vegetation. mapped, established creek. sediment mucky mineral in channel to developing soils on bank - clay loam

current channel seems human induced incision to control flooding of homes & yards on east bank of JGC.

Additional observations or notes

OHWM - 02 inches

TOB 94 inches

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☐ No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description
1	upstream
2	downstream
3	OHWM & strata
4	flora - representative

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