Biological Resources Assessment

Arcata Land Company, LLC
Assessor's Parcel Number Parcel "D"
Arcata, California





Prepared for:

Arcata Land Company



June 2020 017062



Reference: 017062

June 17, 2020

Rudolf Visser Arcata Land Company, LLC 3318 Foster Avenue Arcata, CA 95521

Subject: Biological Resources Assessment

Metchen O'Breen

Dear Rudolf Visser:

Enclosed is the Biological Resources Assessment for your project site referred to as Parcel "D" in Arcata, CA. This report addresses special-status species that may have the potential to occur within the study area. The findings of this report will serve as a tool for guidance on land management decisions.

Feel free to contact me at 707-822-5785 with any questions or concerns.

Respectfully submitted,

SHN

Gretchen O'Brien

Biologist

GAO:ceg

Enclosure: Biological Resources Assessment – Parcel "D"



Reference: 017062

Biological Resources Assessment

Arcata Land Company, LLC Parcel "D" Arcata, California

Prepared for:

Rudolf Visser

Prepared by:



June 2020

QA/QC:GSW

Table of Contents

			Page
List of	Illustratio	ons	ii
Abbre	viations a	and Acronyms	iii
1.0	Introdu	uction	1
	1.1	Project Location	1
2.0	Project	t Description	1
	2.1	Site Description	
3.0	Motho	dology	1
3.0	3.1	Literature Review	
	3.2	Coordination with Permitting and Regulatory Agencies	
	3.3	Field Observations and Studies	
4.0	Pogulat	tory Setting	
4.0	4.1	Federal Laws	
	4.1	4.1.1 Clean Water Act Sections 404 and 401	
		4.1.2 Fish and Wildlife Coordination Act	
		4.1.3 Federal Endangered Species Act	
		4.1.4 Migratory Bird Treaty Act	4
	4.2	State Laws	4
		4.2.1 Porter-Cologne Water Quality Control Act	
		4.2.2 California Endangered Species Act	
		4.2.3 California Environmental Quality Act	
		4.2.4 California Fish and Game Code Section 1600	
		4.2.5 California Fish and Game Code Sections 3503 and 3513	
		4.2.6 Fully Protected Species and Species of Special Concern4.2.7 Native Plant Protection Act of 1973	
		4.2.7 Native Plant Protection Act of 1973	
	4.3	Other Statutes, Codes, and Policies Affording Limited Species Protection—Humboldt	0
	4.5	County Streamside Management Area Ordinance	8
		4.3.1 County of Humboldt Commercial Cannabis Cultivation Land Use Ordinance	
		(non-coastal zone)	8
5.0	Special	l-status Biological Resources	9
	5.1	Special-status Plant Species	
	5.2	Special-status Animal Species	
		5.2.1 Amphibians	
		5.2.2 Birds	
		5.2.3 Fish	
		5.2.4 Insects	
		5.2.5 Mammals	
		5.2.7 Reptiles	
	5.3	Special-status Natural Communities and Habitats	
	5.5	5.3.1 Sensitive Natural Communities	
		5.3.2 Wetland and Riparian Habitats	
		5.3.3 Nesting Bird Habitat	



Table of Contents, Continued

		5.3.4	Wildlife Movement Corridors	
		5.3.5	Designated Critical Habitat	14
	5.4	Invasiv	ve Species	14
6.0	Concl	usion		15
7.0	Recor	nmendat	tions	15
8.0	Refer	ences		15

Appendix

- 1. Site Photographs
- 2. Species Lists

List of Illustrations

Figures		Follows Page
1.	Project Location	1
2	Study Area	1

Abbreviations and Acronyms

	don's and Actoryins		
C°	degrees Celsius	MBTA	Migratory Bird Treaty Act
F° c	degrees Fahrenheit	NCCP	Natural Community Conservation
	·		Planning
AE A	Agriculture Exclusive	NMFS	National Marine Fisheries Service
	_		Native Plant Protection Act
	Assessor's Parcel Number	NPPA	
	Biogeographical Information and	PT	proposed threatened species
(Observation System		status
BMP k	best management practices	RWQCB	Regional Water Quality Control
BRA E	Biological Resources Assessment		Board
C	candidate species status	SAA	Streambed Alteration Agreement
	Consortium of California Herbaria	SMAO	Streamside Management Area
	California Code of Regulations	3.7.7.10	Ordinance
	_	SSC	
	California Department of Fish and		species of special concern
	Wildlife	SWRCB	State Water Resources Control
CEQA (California Environmental Quality		Board
1	Act	T	threatened species status
CESA (California Endangered Species Act	U.S.	United States
CFGC (California Fish and Game Code	USACE	United States Army Corps of
CFR (Code of Federal Regulations		Engineers
	California Natural Diversity	USC	United States Code
	Database	USDA	United States Department of
	California Native Plant Society	OSDA	Agriculture
	· · · · · · · · · · · · · · · · · · ·	LICEVAC	_
	California Rare Plant Rank	USFWS	United States Fish and Wildlife
	candidate threatened species		Service
_	status	USGS	United States Geological Survey
CWA (Clean Water Act	VegCAMP	Vegetation Classification and
D 0	delisted species status		Mapping Program
DPS N	Northern California distinct	WDR	Waste Discharge Requirement
ŗ	population segment/species	WL	watch list species status
•	status		·
E e	endangered species status		
	U.S. Environmental Protection		
	Agency		
	evolutionarily significant		
	unit/species status		
	Federal Endangered Species Act		
FP f	fully protected species status		
G1/S1 c	critically imperiled species		
ł	heritage rank		
G2/S2 i	imperiled species heritage rank		
	vulnerable species heritage rank		
	apparently secure species		
•	heritage rank		
	-		
	species heritage rank		
	Information for Planning and		
	Conservation		
LSA L	Lake or Streambed Alteration		



1.0 Introduction

SHN has conducted preliminary site investigations including literature reviews and database query for an assessment to determine biological resources potentially present in relation to the Arcata Land Company, LLC property near Arcata, California (Figure 1). This Biological Resources Assessment (BRA) will serve as a tool to identify potential sensitive natural resources that may occur onsite and help determine project-related impacts and offer recommendations for minimal disturbance to biological resources.

1.1 Project Location

The project is located in Arcata, California, on the United States Geological Survey (USGS) Arcata North 7.5-minute Quadrangle (USGS, 2012), located in the Township 06 North, Range 01 east, Section 19 in the Humboldt Meridian. The parcel covers approximately 30 acres with a central location latitude 40.886551° and longitude -124.102427° (Figure 2).

2.0 Project Description

The proposed project includes greenhouse structures, water storage, leach field, and production building for agricultural purposes; therefore, the entire study area will be considered the area of potential impact.

2.1 Site Description

The study area consists of greenhouse structures, soil composting, and an agricultural field that has historically been used for agricultural purposes and is currently used for quinoa production (Appendix 1, Photo 1). Much of the study area is disturbed and managed, with mostly grassland habitat available for plants and animals (Appendix 1, Photos 1 and 2). There is a small drainage along the western parcel boundary that may provide habitat for amphibians (Appendix 2, Photo 3). The property is zoned Heavy Industrial (MH/Q) by the Humboldt County Zoning Regulations, and the current Humboldt County General Plan Land Use designation is Agricultural Exclusive (AE). Much of the surrounding area is active agricultural land.

The study area is predominantly non-native grass and forb species, supporting cutleaf geranium (*Geranium dissectum*), orchard grass (*Dactylis glomerata*), wild radish (*raphanus sativus*), velvet grass (*holcus lanatus*), sweet vanilla grass (*anthoxanthum odoratum*), and field mustard (*brassica rapa*).

3.0 Methodology

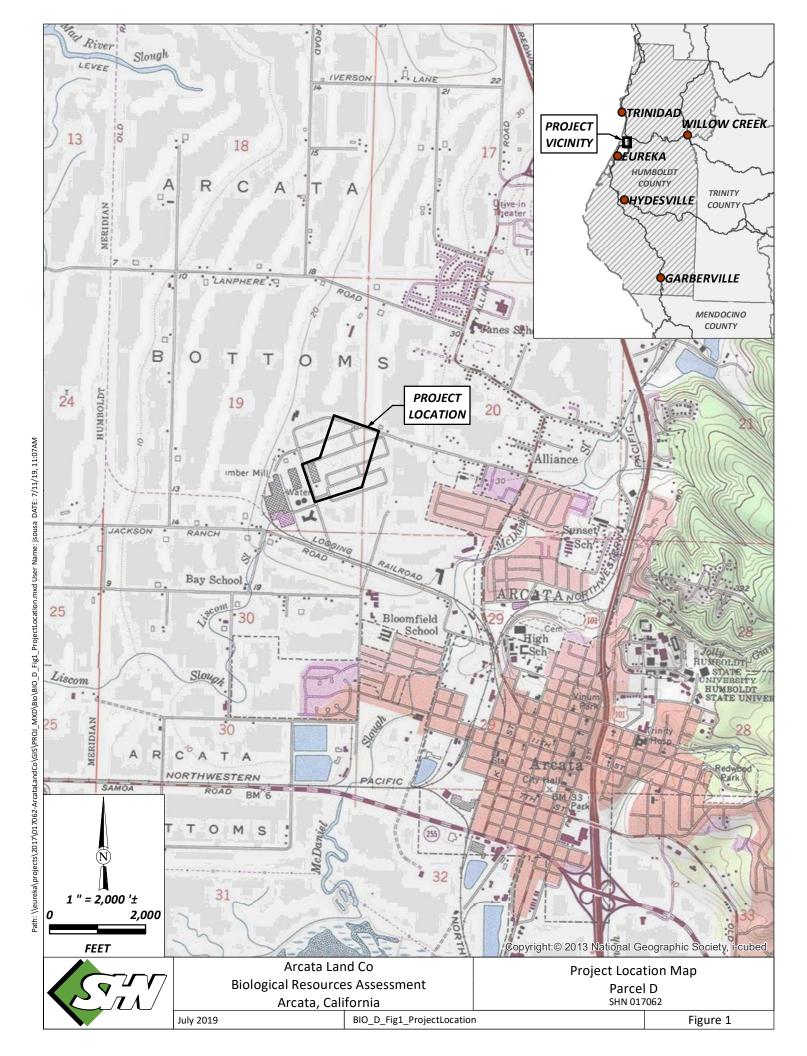
3.1 Literature Review

This Biological Resources Assessment includes a review of pertinent literature on habitat characteristics of the site, and a review of information related to special-status species of plants and animals that could potentially use the described habitats.

The findings for this report are a result of several sources, including a review of existing literature regarding sensitive resources that have the potential to occur within the site. Resources for this determination included:

California Natural Diversity Database (CNDDB) query for the Arcata North and surrounding USGS
 7.5-minute topographic quadrangles (Tyee City, Trinidad, Crannel, Panther Creek, Blue Lake, Arcata South, and Eureka) (California Department of Fish and Wildlife [CDFW], 2019a).







- Biogeographical Information and Observation System (BIOS; CDFW, 2019b).
- Electronic Inventory of Rare and Endangered Vascular Plants of California (California Native Plant Society [CNPS], 2019) query for a list of all plant species reported for the Arcata North and surrounding USGS 7.5-minute topographic quadrangles.
- Special Animals of California List (CDFW, 2019c).
- United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC)
 was queried for threatened, endangered, proposed, and candidate species, as well as proposed and
 final designated critical habitat, that may occur within the boundary of the proposed project and/or
 may be affected by the proposed project (USFWS, 2019a).

From the database queries, a list of potential target special-status species for the study area was compiled. Tables 1 and 2 in Appendix 2 include species reported by the CNDDB and USFWS, and species listed in the CNPS inventory of rare plants.

3.2 Coordination with Permitting and Regulatory Agencies

SHN staff will subsequently coordinate with CDFW staff on wildlife concerns as needed.

3.3 Field Observations and Studies

A preliminary site visit was conducted on December 5, 2018 to assess the available habitat for the potential special-status species that were reported in the vicinity, and determine where to focus survey efforts. Following survey methods from CDFW's *Protocols for Surveying and Evaluating Impacts to Special-status Native Plant Populations and Natural Communities* (CDFW, 2009), seasonally-appropriate site visits were conducted on May 2 and July 19, 2019 for the highest probability of detecting special-status plant species. A thorough reconnaissance of habitat availability for and presence of special-status animals was conducted on the May 2 visit, during the breeding season for many of the animal species reported to occur in the vicinity.

4.0 Regulatory Setting

Regulatory authority over biological resources is shared by federal, State, and local authorities under a variety of legislative acts. The following section summarizes the federal, State, and local regulations for special-status species, jurisdiction waters of the U.S. and State of California, and other sensitive biological resources. This section provides a listing and overview of these federal and State laws.

4.1 Federal Laws

4.1.1 Clean Water Act Sections 404 and 401

Under Section 404 (33 U.S. Code (USC) 1344) of the Clean Water Act (CWA), as amended, the Army Corps of Engineers (USACE) retains primary responsibility for permits to discharge dredged or fill material into waters of the U.S. All discharges of dredged or fill material into jurisdictional waters of the U.S. that result in permanent or temporary losses of waters of the U.S. are regulated by the USACE. A permit from the USACE must be obtained before placing fill or grading in wetlands or other waters of the U.S., unless the activity is exempt from CWA Section 404 regulation (for example, certain farming and forestry activities).

The USACE defines wetlands as "those areas that are inundated or saturated by surface or ground water 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" (Environmental Laboratory, 1987). In other words, the USACE defines wetlands by the presence of all three wetland indicators: hydrophytic vegetation, hydric soils, and wetlands hydrology.

Waters of the U.S. are defined at 33 Code of Federal Regulations (CFR) Part 328. They include traditional navigable waters; relatively permanent, non-navigable tributaries of traditional navigable waters; and certain wetlands. Following recent court cases, the U.S. Environmental Protection Agency (EPA) and USACE published a memorandum entitled Clean Water Act Jurisdiction (USACE/EPA, 2008) to guide the determination of jurisdiction over waters of the U.S., especially for wetlands. The applicability of Section 404 permitting over discharges to wetlands is, therefore, a two-step process: 1) determining the areas that are wetlands, and 2) where a wetland is present, assessing the wetland's connection to traditional navigable waters and non-navigable tributaries to determine whether the wetland is jurisdictional under the CWA. A wetland is considered jurisdictional if it meets certain specified criteria.

The USACE is required to consult with the USFWS and/or National Marine Fisheries Service (NMFS) under Section 7 of the FESA if the action subject to CWA permitting could result in "Take" of federally listed species or an adverse effect to designated critical habitat. The project is within the jurisdiction of the Sacramento District of the USACE.

Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification from the state in which the discharge originates or would originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the affected waters at the point where the discharge originates or would originate, that the discharge will comply with the applicable effluent limitations and water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility. The responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB). The project is within the jurisdiction of the North Coast RWQCB.

4.1.2 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 U.S.C. Sections 661-667e, March 10, 1994, as amended 1946, 1958, 1978, and 1995) requires that whenever waters or channel of a stream or other body of water are proposed or authorized to be modified by a public or private agency under a federal license or permit, the federal agency must first consult with the USFWS and/or NMFS and with the head of the agency exercising administration over the wildlife resources of the state where construction will occur (in this case the CDFW), with a view to conservation of birds, fish, mammals, and all other classes of wild animals, and all types of aquatic and land vegetation upon which wildlife is dependent.

If direct permanent impacts occur to waters of the U.S. from a proposed project, then a permit from USACE under CWA Section 404 is required for the construction of the proposed project. USACE is required to consult with USFWS and/or NMFS as appropriate regarding potential impacts to federally listed species under FESA. Such action may prompt consultation with CDFW, which would review the project pursuant to California Endangered Species Act (CESA) and issue a consistency letter with USFWS and/or NMFS, if required.

4.1.3 Federal Endangered Species Act

The United States Congress passed the FESA in 1973 to protect species that are endangered or threatened with extinction. The FESA is intended to operate in conjunction with the National Environmental Policy Act



(NEPA) to help protect the ecosystems upon which endangered and threatened species depend and within which they live. The USFWS and the NMFS are the designated federal agencies responsible for administering the FESA.

The FESA prohibits the "Take" of endangered or threatened wildlife species. A "Take" is defined as harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species, or any attempt to engage in such conduct (16 U.S.C. 1531, 50 CFR 17.3). An activity can be defined as a "Take" even if it is unintentional or accidental. Taking can result in civil or criminal penalties. Activities that could result in "Take" of a federally listed species require an incidental "Take" authorization resulting from FESA Section 7 consultation or FESA Section 10 consultation. Plants are legally protected under the FESA only if "Take" occurs on federal land or from federal actions, such as issuing a wetland fill permit.

A federal endangered species is one that is considered in danger of becoming extinct throughout all, or a significant portion, of its range. A federal threatened species is one that is likely to become endangered in the foreseeable future. The USFWS also maintains a list of species proposed for listing as threatened or endangered. Proposed species are those for which a proposed rule to list as endangered or threatened has been published in the Federal Register. In addition to endangered, threatened, and proposed species, the USFWS maintains a list of candidate species. Candidate species are those for which the USFWS has on file sufficient information to support issuance of a proposed listing rule.

Pursuant to the requirements of the FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed endangered or threatened species may be present in the project area and determine whether the proposed project will have a potentially significant impact on such a species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under the FESA or result in the destruction or adverse modification of critical habitat designated or proposed to be designated for such species (16 U.S.C. 1536[3], [4]). Project-related impacts to species on the FESA endangered or threatened list would be considered significant and would require mitigation.

4.1.4 Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) of 1918 makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in CFR Part 10, including feather or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The MBTA also prohibits disturbance and harassment of nesting migratory birds at any time during their breeding season. The USFWS is responsible for enforcing the MBTA (16 U.S.C. 703). The migratory bird nesting season is generally considered to be between March 1 and August 31 within the study region.

4.2 State Laws

4.2.1 Porter-Cologne Water Quality Control Act

The state and RWQCB also maintain independent regulatory authority over the placement of waste, including fill, into waters of the State under the Porter-Cologne Water Quality Control Act. Waters of the State are defined by the Porter-Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The SWRCB protects all waters in its regulatory scope, but has special responsibility for isolated wetlands and headwaters. These water bodies might not be regulated by other programs, such as Section 404 of the CWA. Waters of the State are regulated by the RWQCBs under the State Water Quality Certification Program, which regulates discharges of dredged and fill



material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require an USACE permit, or fall under other federal jurisdiction, and have the potential to impact waters of the State are required to comply with the terms of the Water Quality Certification Program. If a proposed project does not require a federal license or permit, but does involve activities that may result in a discharge of harmful substances to waters of the State, the RWQCBs have the option to regulate such activities under their state authority in the form of Waste Discharge Requirements (WDRs) or certification of WDRs.

4.2.2 California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. The CESA is similar to the Federal Endangered Species Act (FESA) but pertains to state-listed endangered and threatened species. Under the CESA, the CDFW has the responsibility for maintaining a list of threatened and endangered species designated under State law (California Fish and Game Code [CFGC] 2070). Section 2080 of the CFGC prohibits "Take" of any species that the commission determines to be an endangered or threatened species. "Take" is defined in Section 86 of the CFGC as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

The state and federal lists of threatened and endangered species are generally similar; however, a species present on one list may be absent from the other. CESA regulations are also somewhat different from the FESA in that the State regulations included threatened, endangered, and candidate plants on non-federal lands within the definition of "Take." CESA allows for "Take" incidental to otherwise lawful development projects.

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project area and determine whether the proposed project will have a potentially significant impact on such species. Project-related impacts to species on the CESA endangered or threatened list (or, in addition, designated by the CDFW as a "Species of Special Concern," which is a level below threatened or endangered status) would be considered significant and would require mitigation.

4.2.3 California Environmental Quality Act

California Environmental Quality Act (CEQA) Guidelines Sections 15125(c) and 15380(d) provide that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. Thus, CEQA provides the ability to protect a species from potential project impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

The CNPS maintains a list of plant species native to California whose populations that are significantly reduced from historical levels, occur in limited distribution, or are otherwise rare or threatened with extinction. This information is published in the Inventory of Rare and Endangered Plants of California (CNPS, 2019). Taxa with a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, 2B, and 3 in the CNPS inventory consist of plants that meet the definitions of the CESA of the CFGC, are eligible for state listing, and meet the definition of Rare or Endangered under CEQA Guidelines Sections 15125(c) and 15380(d). Some taxa with a CRPR 4 may meet the definitions of the CESA of the CFGC. CRPR 4 populations may qualify for consideration under CEQA if they are peripheral or disjunct populations; represent the type locality of the species; or exhibit unusual morphology and/or occur on unusual substrates.

Additionally, CDFW maintains lists of special animals and plants. These lists include a species conservation ranking status from multiple sources, including FESA, CESA, federal departments with unique jurisdictions,



CNPS, and other non-governmental organizations. Based on these sources, CDFW assigns a heritage rank to each species according to their degree of imperilment (as measured by rarity, trends, and threats). These ranks follow NatureServe's Heritage Methodology, in which all species are listed with a G (global) and S (state) rank. Species with state ranks of S1-S3 are also considered highly imperiled.

CEQA Guidelines checklist IV(b) calls for the consideration of riparian habitats and sensitive natural communities. Sensitive vegetation communities are natural communities and habitats that are either unique, of relatively limited distribution in the region, or of particularly high wildlife value. However, these communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies, or regulations, or by the CDFW (i.e., the CNDDB program and Vegetation Classification and Mapping Program [VegCAMP]) or the USFWS. Impacts to sensitive natural communities and habitats must be considered and evaluated under the CEQA (California Code of Regulations [CCR]: Title 14, Div. 6, Chap. 3, Appendix G).

Although sensitive natural communities do not (at present) have legal protection, CEQA calls for an assessment of whether any such resources would be affected, and requires a finding of significance if there will be substantial losses. High quality occurrences of natural communities with heritage ranks of 3 or lower are considered by CDFW to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents (such as, general plans) often identify these resources as well. Avoidance, minimizations, or mitigation measures should be implemented if project-affected stands of rare vegetation types or natural communities are considered high-quality occurrences of the given community.

As a trustee agency under CEQA, CDFW reviews potential project impacts to biological resources, including wetlands. In accordance with the CEQA thresholds of significance for biological resources, areas that meet the state criteria of wetlands and could be impacted by a project must be analyzed. Pursuant to CFGC Section 2785, CDFW defines wet areas as "lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools."

4.2.4 California Fish and Game Code Section 1600

Streams, lakes, and riparian vegetation as habitat for fish and other wildlife species, are subject to jurisdiction by the CDFW under Sections 1600-1616 of the CFGC. Any activity that will do one or more of the following: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake generally require a Streambed Alteration Agreement (SAA).

The term "stream," which includes creeks and rivers, is defined in the CCR as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life." This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation (14 CCR 1.72).

In addition, the term "stream" can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. Riparian is defined as "on, or pertaining to, the banks of a stream"; therefore, riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFW, 1994). Removal of riparian vegetation also requires an SAA from the CDFW.



4.2.5 California Fish and Game Code Sections 3503 and 3513

According to Section 3503 of the CFGC it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird (except English sparrows [Passer domesticus] and European starlings [Sturnus vulgaris]). Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds-of-prey). Section 3513 essentially overlaps with the MBTA, prohibiting the "Take" or possession of any migratory non-game bird. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "Take" by the CDFW.

4.2.6 Fully Protected Species and Species of Special Concern

The classification of "fully protected" was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced with possible extinction. Lists were created for fish, amphibian and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The CFGC sections (fish at Sec. 5515, amphibian and reptiles at Sec. 5050, birds at Sec. 3511, and mammals at Sec. 4700) dealing with "fully protected" species states that these species "...may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species," (CDFW, 1998) although "Take" may be authorized for necessary scientific research. This language makes the "fully protected" designation the strongest and most restrictive regarding the "Take" of these species. In 2003, the code sections dealing with fully protected species were amended to allow the CDFW to authorize "Take" resulting from recovery activities for state-listed species.

Species of special concern (SSC) are broadly defined as animals not listed under the CESA, but that are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing or historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologists, and others, and is intended to focus attention on the species to help avert the need for costly listing under CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although the SSC designation provides no special legal status, they are given special consideration under CEQA during project review.

Table 2 in Appendix 2 includes potentially-occurring federal- and state-listed species and SSC animals that may occur in the project area.

4.2.7 Native Plant Protection Act of 1973

The Native Plant Protection Act (NPPA) of 1973 (Sec.1900-1913 of the CFGC) includes provisions that prohibit the taking of endangered or rare native plants from the wild and a salvage requirement for landowners. The CDFW administers the NPPA and generally regards as "rare" many plant species included on Lists 1A, 1B, 2A, 2B, 3, and 4 of the CNPS Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2019).

Table 1 in Appendix 2 includes potentially-occurring endangered or rare native plants that may occur in the project area (including CNPS lists).



4.2.8 Natural Community Conservation Planning Act

The Natural Community Conservation Planning (NCCP) Act of 1991 is an effort by the State of California, and numerous private and public partners that is broader in its orientation and objectives than the CESA and FESA (refer to discussions above). The primary objective of the NCCP Act is to conserve natural communities at the ecosystem scale while accommodating compatible land use. The NCCP Act seeks to anticipate and prevent the controversies and gridlock caused by species listings by focusing on the long-term stability of wildlife and plant communities and including key interests in the process.

No regionally-occurring natural community or associated plan is listed by the state for the project area.

4.3 Other Statutes, Codes, and Policies Affording Limited Species Protection—Humboldt County Streamside Management Area Ordinance

Riparian and wetland habitats receive protection under Humboldt County's Streamside Management Area Ordinance (SMAO); as defined in Title 3, Section 314-61.1 of the Humboldt County Code. Development and work within SMAs requires a special permit from the County, if those activities are not exempt.

The purpose of the SMAO is to provide oversight in the use and development of land located within wet areas such as rivers, creeks, springs, and other wetland types. This includes natural resource areas along both sides of streams containing the channel and adjacent land. In areas outside of urban development and expansion areas, SMAs are identified as a 100-foot setback from the stream transition line of perennial streams and 50-foot setback for streams with seasonal intermittent flow. In areas inside of urban development and expansion areas, SMAs are identified as a 50-foot setback from perennial streams and 25-foot setback for streams with seasonal intermittent flow. The stream transition line is defined in the Humboldt County General Plan as, "that line closest to a stream where riparian vegetation is permanently established," which is typically interpreted in riparian areas as the closest rooted tree to the water course.

Routine maintenance activities are permitted under the SMAO, if trees that are more than 12 inches in diameter are not cut, and that no more than 6,000 cumulative square feet of woody vegetation is removed. Additionally, activities are not considered routine maintenance if they could result in a significant environmental impact. Significance with regard to environmental impact can be difficult to qualify on a case-by-case level. However, the California Department of Fish and Wildlife generally considers the removal of riparian woody vegetation greater than 4 inches in diameter as an activity that requires compensatory mitigation. Mitigation measures for projects within SMAs can include retaining snags and trees that support nesting birds, replanting of disturbed areas equal to the development area, and other potential site-specific habitat improvements.

4.3.1 County of Humboldt Commercial Cannabis Cultivation Land Use Ordinance (non-coastal zone)

On May 8, 2018, the Humboldt County Board of Supervisors adopted Ordinance Number 2599, amending provisions of Title III of the Humboldt County code relating to the commercial cultivation, processing, manufacturing, distribution, testing, and sale of cannabis for medicinal or adult use for the areas outside the coastal zone. The ordinance established land use regulations concerning commercial cultivation, processing, manufacturing, and distribution of cannabis for medical use within the County of Humboldt in order to limit and control such cannabis activities in coordination with the State of California.



Section 55.4.12.1.10 establishes performance standards for biological resource protection for all cannabis cultivation and processing operations, referring to the mitigation measures established in the Final Environmental Impact Report for the ordinance which includes:

- MM 3.4-1a. Pre-approval biological reconnaissance survey to determine if suitable habitat is present for any special-status plant or animal species; and
- MM 3.4-3a. CDFW (2009) Protocol level special-status plant surveys prior to new development related to cannabis activities.

Section 55.4.12.1.10 establishes performance standards for biological resource protection for all cannabis cultivation and processing operations. Section 55.4.12.6 specifies performance standards for project-related noise produced by a generator used for commercial cannabis cultivation. The noise effects on wildlife are focused on avoiding impacts to marbled murrelet and northern spotted owl. Project-related noise impacts are assumed to be less than significant if noise levels are 50 decibels or less at 100 feet distance or the edge of the nearest habitat, whichever is closer.

5.0 Special-status Biological Resources

An evaluation was conducted for the potential presence or absence of habitat for special-status plant and animal species. CNDDB RareFind (CDFW, 2019d), BIOS (CDFW, 2019b), and CNPS (CNPS, 2019) searches were completed for the Arcata North 7.5-minute USGS quadrangle and all adjacent quadrangles. The aforementioned databases were queried for historical and existing occurrences of state- and federally-listed threatened, endangered, and candidate plant and animal species, species proposed for listing, and all special-status plants listed by the CNPS. In addition, a list of all federally listed species that are known to occur or may occur in the vicinity was obtained from the USFWS' Information for Planning and Conservation database (USFWS, 2019a).

Table 1 in Appendix 2 includes all plant species reported from the queries, their preferred habitat, and whether there is suitable habitat present within the study area for the species. Table 2 includes all animal species reported from the queries, their preferred habitat, and whether there is suitable habitat present within the study area for the species. The potential for occurrence of those species included on the list were then evaluated based on the habitat requirements of each species relative to the conditions observed under desktop review and during the initial site visit.

Each species was evaluated for its potential to occur in the study area according to the following criteria:

- None. Species listed as having "none" are those species for which:
 - there is no suitable habitat present in the study area (that is, habitats in the study area are unsuitable for the species requirements [for example, elevation, hydrology, plant community, disturbance regime, etc.]).
- **Low**. Species listed as having a "low" potential to occur in the study area are those species for which:
 - o there is no known record of occurrence in the vicinity, and
 - o there is marginal or very limited suitable habitat present within the study area.
- **Moderate**. Species listed as having a "moderate" potential to occur in the study area are those species for which:
 - o there are known records of occurrence in the vicinity, and
 - o there is suitable habitat present in the study area.



- High. Species listed as having a "high" potential to occur in the study area are those species for which:
 - there are known records of occurrence in the vicinity (there are many records and/or records in close proximity), and
 - o there is highly suitable habitat present in the study area.

5.1 Special-status Plant Species

Based on a review for special-status plant species, 72 special-status plant species have been reported from the region consisting of the site's quadrangle and their surrounding quadrangles. Of the special-status plant species reported in the region, 66 plant species are considered to have a low or no potential to occur at the project site and 6 species have a moderate or high potential (Table 1 in Appendix 2). Surveys were completed May 2, 2019 and July 19, 2019. Species with a moderate potential for occurrence within the study area are described below:

Hosackia gracilis is a perennial herb in the Fabaceae family. It is neither State nor federally listed, but has a CRPR of 4.2 and a heritage rank of G4/S3. Its elevation range is reported from 0 to 700 meters above sea level. Within its range state-wide, its blooming period is reported as March through July. This species is reported from wetlands, roadsides, and a variety of habitats from coastal scrub to coniferous forests. Although suitable habitat may exist within the study area for this species, it was not detected.

Lathyrus palustris is a perennial herb in the Fabaceae family. It is neither State nor federally listed, but has a CRPR of 2B.2 and a heritage rank of G5/S2. Its elevation range is reported from 2 to 140 meters above sea level. Within its range state-wide, its blooming period is reported as March through August. This species is reported from bogs, fens, lower montane coniferous forest, marsh, swamp, coastal prairie, and coastal scrub. Although suitable habitat may exist within the study area for this species, it was not detected.

Montia howellii is an annual herb in the Montiaceae family. It is neither State nor federally listed, but has a CRPR of 2B.2 and a heritage rank of G3G4/S2. Its elevation range is reported from 0 to 835 meters above sea level. Within its range state-wide, its blooming period is reported as March through May. This species is reported from meadows and seeps, north coast coniferous forests, vernal pools, vernally mesic sites, and sometimes roadsides. Although suitable habitat may exist within the study area for this species, it was not detected.

Sidalcea malachroides is a perennial herb in the Malvaceae family. It is neither State nor federally listed, but has a CRPR of 4.2 and a heritage rank of G3/S3. Its elevation range is reported from 0 to 730 meters above sea level. Within its range state-wide, its blooming period is reported as March through August. This species is reported from woodlands, clearings near the coast, and often in disturbed areas. Although suitable habitat may exist within the study area for this species, it was not detected.

Sidalcea malviflora ssp. patula is a perennial herb in the Malvaceae family. It is neither State nor federally listed, but has a CRPR of 1B.2 and a heritage rank of G5T2/S2. Its elevation range is reported from 5 to 1,255 meters above sea level. Within its range state-wide, its blooming period is reported as May through August. This species is reported from coastal bluff scrub, coastal prairie, roadcuts and north coast coniferous forests. Although suitable habitat may exist within the study area for this species, it was not detected.

Sidalcea oregana ssp. eximia is a perennial herb in the Malvaceae family. It is neither State nor federally listed, but has a CRPR of 1B.2 and a heritage rank of G5T1/S1. Its elevation range is reported from 5 to 1,805



meters above sea level. Within its range state-wide, its blooming period is reported as June through August. This species is reported from meadows, seeps, low montane conifer forests, and in gravelly soil. Although suitable habitat may exist within the study area for this species, it was not detected.

5.2 Special-status Animal Species

Based on a review of special-status animal species, 66 special-status animal species have been reported with the potential to occur in the project region. Due to the minimal natural, undisturbed vegetation or water resources within the study area, many of the regionally occurring special-status species are not likely to utilize the available habitat. Of the 66 special-status animal species potentially occurring in the region, 51 animal species are considered to have a no or low potential to occur at the project site and 15 species have a moderate to high potential to occur (Table 2 in Appendix 2). Species with a moderate or high potential for occurrence within the study area are described below. Field investigations particularly focused on determining presence or potential use of the study area by these species.

5.2.1 Amphibians

The northern red-legged frog (*Rana aurora*) is an amphibian in the Ranidae family. Reported habitats include Klamath and north coast flowing waters and riparian forests, usually near dense riparian cover. It is generally found near permanent water, but is sometimes found far from water in damp woods and meadows during the non-breeding season (May to November).

Status: Federal None, State None, Species of Special Concern, Global rank Apparently Secure, State rank Vulnerable.

Suitable dispersal habitat for this species exists within the study area and potential breeding habitat exists in the drainage along the western boundary of the study area, although it was not detected.

5.2.2 Birds

The Cooper's hawk (*Accipiter cooperii*) occurs in woodlands, riparian forest, chiefly of open, interrupted, or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river floodplains; also, live oaks. This species builds stick platform nests lined with bark in crotches of riparian deciduous trees and second-growth conifers near streams.

Status: Federal None, State None, Watchlist, Global rank Secure, State rank Apparently Secure. Foraging habitat for this species exists in the eastern half of the study area and adjacent to the study area. Potential foraging habitat exists for this species within the study area, nesting habitat exists on adjacent property, although it was not detected.

The sharp-shinned hawk (*Accipiter striatus*) can be found in ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine habitats, and prefers riparian areas. North-facing slopes with plucking perches are critical requirements. Nests are usually within 275 feet of water.

Status: Federal None, State None, Watchlist, Global rank Secure, State rank Apparently Secure. Foraging habitat for this species exists in the study area and adjacent to the study area, although it was not detected.

The great egret (*Ardea alba*) is a colonial nester in large trees. Rookery sites are located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes. This species is most often found foraging around water, including wet fields and grassy meadows near water.

Status: Federal None, State None, Sensitive, Global rank Secure, State rank Apparently Secure. Potential foraging habitat exists for this species within the study area during the wet season, although it was not detected.



The great blue heron (*Ardea herodias*) is a colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows. This species is most often found foraging near or in water, or in grassy fields near water.

Status: Federal None, State None, Sensitive, Global rank Secure, State rank Apparently Secure. Potential foraging habitat exists for this species within the study area during the wet season, although it was not detected.

The short-eared owl (*Asio flammeus*) lives in large, open areas with low vegetation including grasslands, savannah, marshes, and agricultural areas. They can be seen during the day and make their nests on the ground.

Status: Federal None, State None, Species of Special Concern, Global rank Secure, State rank Vulnerable. Suitable foraging and potential nesting habitat exist for this species within the study area, although it was not detected.

The Vaux's swift (*Chaetura vauxi*) typically nests in tree cavities and forages in the air over streams and standing water that support invertebrates. Status: Federal None, State None, Species of Special Concern, Global rank Secure, State rank Imperiled/Vulnerable.

Potential aerial foraging habitat exists within the study area for this species, although it was not detected.

The northern harrier (Circus cyaneus) is most common in large undisturbed tracts of wetlands and grasslands with low, thick vegetation during the breeding season. In winter, they use a wider range of habitat types with low vegetation including sand dunes, deserts, pastures, and croplands.

Status: Federal None, State None, Species of Special Concern, Global rank Secure, State rank Vulnerable. Winter foraging habitat exists for this species within the study area, although it was not detected.

The snowy egret (*Egretta thula*) nests in colonies in isolated areas, often near water. They forage in marshes and estuaries, grassy ponds, pools, and wet fields.

Status: Federal None, State None, Global rank Secure, State rank Apparently Secure.

Potential foraging habitat exists for this species within the study area during the wet season, although it was not detected.

The white-tailed kite (*Elanus leucurus*) can be found in foothills, valleys, and river bottomlands and marshes. They typically use open grasslands for foraging and nest in densely-topped trees.

Status: Federal None, State None, Fully Protected, Global rank Secure, State rank Apparently Secure/Vulnerable.

Potential foraging habitat exists for this species in the study area and nesting habitat adjacent to the study area, although it was not detected.

The Merlin (*Falco columbarius*) nests near forest openings near water and forages typically for smaller birds in the air in open areas.

Status: Federal None, State None, Watch List, Global rank Secure, State rank Sensitive/Apparently Secure. Foraging habitat exists for this species within the study area, although it was not detected.

The American peregrine falcon (*Falco peregrinus anatum*) occupies wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, and human-made structures. Nest consists of a scrape or a depression or ledge in an open site.

Status: Federal Delisted, State Delisted, Fully Protected, Global rank Apparently Secure, State rank Vulnerable/Apparently Secure.

Potential foraging habitat exists within the study area for this species, although it was not detected.



The Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*) live in grasslands, meadows, and cultivated fields, as well as coastal scrub and estuaries.

Status: Federal None, State None, Species of Special Concern, Global rank imperiled/sensitive, State rank imperiled/sensitive.

Foraging and nesting habitat exists for this species within the study area, although it was not detected.

5.2.3 Fish

None of the fish species listed on the CNDDB report are considered to have a moderate or high potential to occur within the project area due to the lack of any stream connectivity through the study area.

5.2.4 Insects

The western bumble bee (*Bombus occidentalis*) is an insect in the Apidae family. This species was once common and widespread, but has declined precipitously from central California to southern British Columbia, perhaps from disease.

Status: Federal None, State None, Sensitive, Global Rank Imperiled/Vulnerable, State Rank Critically Imperiled.

There is suitable foraging and nesting habitat available for this species within the study area, although it was not detected.

The obscure bumblebee (*Bombus calignosus*) lives in along coastal areas of the western states in underground burrows or above ground in abandoned bird nests.

Status: Federal None, State None, Vulnerable, Global Rank Apparently Secure, State Rank Critically Imperiled/Imperiled.

There is suitable foraging and nesting habitat available for this species within the study area, although it was not detected.

5.2.5 Mammals

None of the mammal species listed on the CNDDB report are considered to have a moderate or high potential to occur within the project area due to the lack of suitable habitat available within the study area.

5.2.6 Mollusks

None of the mollusk species listed on the CNDDB report are considered to have a moderate or high potential to occur within the project area due to the lack of suitable habitat available within the study area.

5.2.7 Reptiles

The only reptile listed on the CNDDB report was Western Pond Turtle (*Emys marmorata*) and is not considered to have a moderate or high potential to occur within the study area as no suitable habitat for this species exists within the study area.

5.3 Special-status Natural Communities and Habitats

5.3.1 Sensitive Natural Communities

Sensitive natural communities are habitats that are generally defined by vegetation type and geographical location and are increasingly restricted in abundance and distribution. Recognition of natural communities is an ecosystem-based approach to maintaining biodiversity in California. Holland-type CNDDB natural



communities are habitat for numerous special-status plant and animal species. CDFW no longer updates their tracking of Holland-type CNDDB natural communities and has since standardized alliance and association-level vegetation nomenclature for California to comply with the National Vegetation Classification System. High quality occurrences of natural communities with heritage ranks of 3 or lower are considered by CDFW to be significant resources and fall under the CEQA Guidelines for addressing impacts.

No sensitive natural communities were found within the study area.

5.3.2 Wetland and Riparian Habitats

Refer to the wetland delineation report prepared by SHN staff for full description of wetland and riparian habitats in the project area (SHN, 2018). Riparian areas typically provide habitat for a mosaic of wildlife species and are considered sensitive habitat under the Humboldt County SMAO Preservation of waterways are included in Section 7.0 Recommendations.

5.3.3 Nesting Bird Habitat

There is limited nesting habitat for birds within the study area. Some species, such as western meadowlark (*Sturnella neglecta*), may nest in tall grasses. Protection measures for nesting birds are included in Section 7.0 Recommendations.

5.3.4 Wildlife Movement Corridors

Watercourses and their associated riparian zones are likely the primary wildlife movement corridors due to their complex structure, providing cover and hiding places from predators, and the extensive connectivity to other habitats the riparian zones typically provide. Additionally, wildlife may use existing roads and trails that provide corridors between patches of vegetation. There are no significant wildlife movement corridors within the parcel, although some animals, especially nocturnal mammals may use the existing and proposed roadways as movement corridors.

5.3.5 Designated Critical Habitat

USFWS's Critical Habitat Portal (USFWS, 2019b) query for habitat designated as critical for species listed under the FESA reported that the closest designated critical habitat is for the Tidewater Goby (*Eucyclogobius newberryi*), 1.08 miles to the west of the study area (Mad River Slough).

5.4 Invasive Species

Non-native species are often introduced to an area, whether intentionally or unintentionally, by human activities and can have a detrimental effect on native species. The non-native invaders do not have natural predators or controls in an introduced environment so they are able to spread freely and out-compete native species, particularly sensitive species with particular habitat requirements that may change drastically due to the spread of the invasive species.

Invasive species of concern found on site include bristly oxtongue (*Helmenthotheca echioides* [Cal-IPC Limited]), bull thistle (*Cirsium arvense* [Cal-IPC Moderate]), pampas grass (*Cortaderia jubata* [Cal-IPC High]), reed canary grass (*Phalaris arundinacea*), Himalayan blackberry (*Rubus armeniacus* [Cal-IPC High]), Fuller's teasel (*Dipsacus follonum* [Cal-IPC Moderate]), field mustard (*Brassica rapa* [Cal-IPC Limited]), ripgut (*Bromus diandrus* [Cal-IPC Moderate]), and poison hemlock (Conium maculatum [Cal-IPC] moderate).



This area undergoes frequent disturbance. Due to these activities and the existing establishment of invasive species populations, invasive species are expected to remain prevalent.

6.0 Conclusion

This BRA outlines information related to biological resources that have the potential to occur within the study area. No special-status plants or animals were observed during site visits. Several special-status species have the potential to occupy the study area based on the available habitat, although the surrounding landscape may provide suitable habitat for animals that are able to move outside of the project area. For minimizing impacts on wildlife, plants, and natural communities discussed, as well as development effects, and avoiding conflicts with local policies protecting biological resources, the following recommendations are provided.

7.0 Recommendations

The following recommendations are provided for guidance in developing mitigation and minimization measures for the protection of biological resources.

- Use standard BMPs during ground disturbance activities and remove construction debris and waste from and up to 100 feet around drainage ditches.
- Limit clearing of vegetation to the non-breeding season for birds. If vegetation removal or work on structures is done between September 1 and February 28 (outside reproductive season for most birds), these activities are not likely to affect reproductive success. If brush clearing must occur during the reproductive season, nesting bird surveys should be performed by a qualified biologist to ensure that no active nests are destroyed.

8.0 References

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds). (2012). *The Jepson Manual: Vascular Plants of California, Second Edition*. Berkeley, CA: University of California Press, Berkeley.
- Calflora. (NR). Calflora database. Berkeley, CA: Calflora. Accessed May 2019 at: http://calflora.org/.
- Consortium of California Herbaria. (NR). *Consortium of California Herbaria database*. Berkeley, CA:CCH. Accessed May 2019 at: http://ucjeps.berkeley.edu/consortium/.
- California Department of Fish and Wildlife. (1984). *California Endangered Species Act*. CFGC Sections 2070, 2080. Sacramento, CA:CDFW.
- ---. (1994). A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607, California Fish and Game Code. Sacramento, CA:CDFW.
- ---. Natural Community Conservation Planning Act. Fish and Game Code Section 2800. Sacramento, CA:CDFW.
- ---. (1998). Fish and Game Code. Sacramento, CA:CDFW.
- ---. (November 2009). Protocols for Surveying and Evaluating Impacts to Special-status Native Plant
 Populations and Natural Communities. Accessed May 2019 at:
 https://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols for Surveying and Evaluating Impacts.
 pdf.



- ---. (2019a). *California Natural Diversity Database (CNDDB).* Accessed May 2019 at: http://www.dfg.ca.gov/biogeodata/cnddb/. Sacramento, CA:CDFW.
- ---. (2019b). Biogeographic Information and Observation System (BIOS), Version 5.1. Sacramento, CA:CDFW. Accessed May 2019 at: http://bios.dfg.ca.gov/.
- ---. (2019c). Special Animals List. Sacramento, CA:CDFW.
- ---. (2019d). Rarefind 5 database, internet application. Accessed May 2019 at: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data.
- ---. (2019e). Vegetation Classification and Mapping Program (VegCAMP), *Natural Communities List*. Sacramento, CA:CDFW. Accessed May 2019 at: http://www.dfg.ca.gov/biogeodata/vegcamp/natural_communities.asp.
- ---. (2019f). Special Vascular Plants, Bryophytes, and Lichens List. Sacramento, CA:CDFW.
- California Native Plant Society. (2019). CNPS Rare Plant Program, Inventory of Rare and Endangered Plants (online edition, v8-02). Sacramento, CA:CNPS. Accessed December 2018 at: http://www.rareplants.cnps.org.
- California Natural Resources Agency. (1970). *California Environmental Quality Act.* CCR: Title 14, Div. 6, Chap. 3, Appendix G; Sections 15125(c) and 15380(d).
- County of Humboldt. (1988). *Humboldt County General Plan: Volume I Framework Plan (Amended 1998*). Eureka, CA.
- County of Humboldt. (2005). *Streamside Management Area Ordinance*. Title 3, Section 314-61.1 of the Humboldt County Code. Eureka, CA.
- Environmental Laboratory. (1987). Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1 (online edition). U.S. Army Engineer Waterways Experiment Station, Vicksberg, US:USACE.

 Accessed May 2019 at: www.nrcs.usda.gov/internet/FSE DOCUMENTS/16/nrcs143 020653.pdf.
- Environmental Protection Agency. (2002). *Clean Water Act of 1972, 33 U.S.C. § 1251 et seq.* Washington, D.C.
- ---. Section 401 of the Clean Water Act, 33 USC § 1341. Washington, D.C.
- Sawyer, J.O., T. Keeler-Wolf, and J Evans. (2009). *A Manual of California Vegetation, Second Edition*. Sacramento, CA:CNPS Press.
- SHN. (2018). Wetland and Other Waters Delineation Report: Arcata Land Company, LLC. Eureka, CA:SHN.
- State Water Resource Control Board. (1969.) *Porter-Cologne Water Quality Control Act*. CWC Section 7. Sacramento, CA.
- U.S. Army Corps of Engineers/Environmental Protection Agency. (2008). *Clean Water Act Jurisdiction*. Washington, D.C.:USACE/EPA.
- U.S. Fish and Wildlife Service. (1918). Migratory Bird Treaty Act. 50 CFR 21, 16 USC 703. Washington, D.C.
- ---. (1934). The Fish and Wildlife Coordination Act (16 USC Sections 661-667e, March 10, 1994, as amended 1946, 1958, 1978, and 1995). Washington, D.C.
- ---. (1973). Endangered Species Act. 16 USC 1532, 16 U.S.C. 1536, 50 CFR 17.3. Washington, D.C.
- ---. (2019a). *Information, Planning and Conservation System (IPAC), Trust Resources List.* Washington D.C.:USFWS. Accessed May 2019 at: https://map.dfg.ca.gov/bios/?tool=cnddbQuick.



- ---. (2019b). Critical Habitat for Threatened & Endangered Species. USFWS. Accessed May 2019 at: https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8 <a href="https://doi.org/doi.or
- USGS. (2012). *US Topo: Maps For America*. Washington D.C.:USGS. Accessed December 2018 at: https://www.usgs.gov/core-science-systems/national-geospatial-program/us-topo-maps-america?qt-science_support_page_related_con=0#qt-science_support_page_related_con.



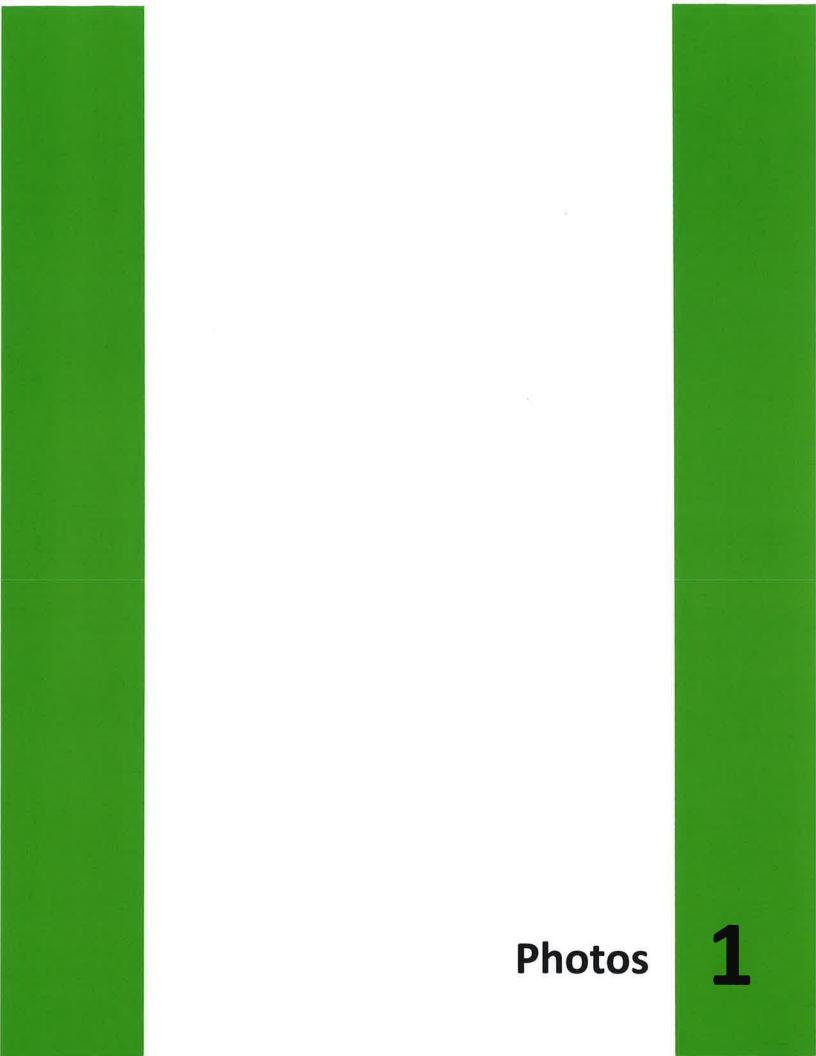




Photo 1. Agricultural field in the study area.



Photo 2. Typical vegetation in study area.



Photo 3. Drainage alongside greenhouses on the western boundary of the study area.



Photo 4. Access roads with predominantly non-native vegetation.

Regionally-Occurring Special-status Plant Species Scoping List CNDDB, CNPS, IPaC

Arcata Land Co.

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Abronia umbellata var. breviflora	pink sand- verbena	Nyctaginac eae	None	None	G4G5- T2	S 1	18.1	June- Oct.	Coastal dunes and coastal strand.	Foredunes and interdunes with sparse cover. Usually the plant closest to the ocean. 0-10 m.	None
Angelica lucida	sea-watch	Apiaceae	None	None	G5	\$3	4.2	May- Sept.	Coastal strand	Coastal bluff scrub, coastal dunes, coastal scrub, coastal salt marshes. 0-150 m	None
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk- vetch	Fabaceae	None	None	G2T2	S2	1B.2	April- Oct.	Coastal dunes, marshes & swamps, coastal scrub.	Mesic sites in dunes or along streams or coastal salt marshes. 0-155 m.	None
Astragalus rattanii var. rattanii	Rattan's milk-vetch	Fabaceae	None	None	G4T4	S4	4.3	April- July	Chaparral, cismontane woodland, lower montane conifer forest.	Open grassy hillsides, gravelly flats in valleys, & gravel bars of stream beds. 30-825 m.	Low
Astragalus umbraticus	Bald Mountian milk-vetch	Fabaceae	None	None	G3	S2	2B.3	May- August	Cismontane woodland, lower montane coniferous forest.	Dry open oak and pine woodlands; sometimes on roadsides. 210-1,220 m	Low
Bryoria pseudocapillaris	false gray horsehair lichen	Parmeli- aceae	None	None	G3	S2	3.2	Lichen	Coastal dunes, North Coast coniferous forest (immediate coast).	Usually on conifers. 0-90 m.	None
Bryoria spiralifera	twisted horsehair lichen	Parmeli- aceae	None	None	G3	S1S2	1B.1	Lichen	North coast coniferous forest.	Usually on conifers. 0-30 m.	None



Regionally-Occurring Special-status Plant Species Scoping List CNDDB, CNPS, IPaC Arcata Land Co.

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Calamagrostis bolanderi	Bolander's reed grass	Poaceae	None	None	G4	S4	4.2	May- August	Closed-cone conifer forest, N. coast conifer forest, broadleaf upland forest, coast scrub, marsh & swamps, meadows & seeps, bogs & fens.	Mesic sites. 0-455 m.	Low
Cardamine angulata	seaside bittercress	Brassic- aceae	None	None	G5	S1	2B.1	Jan July	Low montane, conifer forest, N. coast conifer forest, wetland	Wet areas, streambanks. 90-155 m.	None
Carex arcta	northern clustered sedge	Cyperaceae	None	None	G5	S1	2B.2	June- Sept.	Bogs and fens, north coast conifer forest.	Mesic sites. 60-1,405 m.	None
Carex buxbaumii	Buxbaum's sedge	Cyperaceae	None	None	G5	S3	4.2	March- August	Bogs and fens, meadows and seeps, marshes and swamps.	Mesic sites. 3-3,300 m.	Low
Carex Ienticularis var. Iimnophila	lagoon sedge	Cyperaceae	None	None	G5T5	S1	2B.2	June- August	Bogs, fens, marsh, swamp, No. coast conifer forest.	Lakeshores, beaches. Often in gravelly substrates. 0-6 m.	None
Carex leptalea	bristle- stalked sedge	Cyperaceae	None	None	G5	S1	2B.2	March- July	Bogs, fens, meadows, seeps, marshes, swamps.	Mostly known from bogs and wet meadows. 3-1,395 m.	Low
Carex lyngbyei	Lyngbye's sedge	Cyperaceae	None	None	G5	S 3	2B.2	April- August	Marsh & swamp (brackish or freshwater).	0-200 m.	Low



Regionally-Occurring Special-status Plant Species Scoping List CNDDB, CNPS, IPaC Arcata Land Co.

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Carex praticola	northern meadow sedge	Cyperaceae	None	None	G5	S2	2B.2	May- July	Meadows and seeps.	Moist to wet meadows. 15-3,200 m.	Low
Carex viridula ssp. viridula	green yellow sedge	Cyperaceae	None	None	G5T5	S2	2B.3	June- July	Bogs, fens, marshes, swamps (freshwater), no. coast coniferous forest.	Mesic sites. 0-1,705 m.	Low
Castilleja ambigua var. humboldtiensis	Humboldt Bay owl's- clover	Orobanch- aceae	None	None	G4T2	S2	1B.2	April- August	Marshes and swamps.	Coastal saltmarsh with Spartina, Distichlis, Salicornia, Jaumea. 0-20 m.	None
Castilleja litoralis	Oregon coast paintbrush	Orobanch- aceae	None	None	G3	S 3	2B.2	June	Coastal bluff scrub, coastal dunes, coastal scrub.	Sandy sites. 5-255 m.	None
Castilleja mendocinensis	Mendocino Coast paintbrush	Orobanch- aceae	None	None	G2	S2	1B.2	April- August	Coast bluff scrub, coast scrub, coastal prairie, closed- cone conifer forest, coastal dunes.	Often on sea bluffs or cliffs in coastal bluff scrub or prairie. 0-160 m.	None
Chloropyron maritimum ssp. palustre	Point Reyes salty bird's- beak	Orobanch- aceae	None	None	G4?T2	S2	1B.2	June- Oct.	Coastal salt marsh.	Usually in coastal salt marsh with <i>Salicornia</i> , <i>Distichlis, Jaumea</i> , <i>Spartina</i> , etc. 0-10 m.	None
Chrysosplenium glechomifolium	Pacific golden saxifrage	Saxifrag- aceae	None	None	G5	S3	4.3	Feb June	North Coast conifer forest, riparian forest	Streambanks, sometimes seeps, or roadsides. 10-220 m.	Low



Regionally-Occurring Special-status Plant Species Scoping List CNDDB, CNPS, IPaC Arcata Land Co.

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Collinsia corymbosa	round- headed Chinese- houses	Plantagin- aceae	None	None	G1	S1	1B.2	April- June	Coastal dunes.	10-30 m.	None
Coptis laciniata	Oregon goldthread	Ranuncul- aceae	None	None	G4	S3	4.2	March- April	North Coast coniferous forest, meadows and seeps.	Mesic sites such as moist streambanks. 0-1,000 m.	Low
Discelium nudum	naked flag moss	Disceliacea e	None	None	G4G5	S1	2B.2	Moss	Coastal bluff scrub.	Moss on moist silty clay to fine sandy banks in some-what shaded sites. 10-50 m.	None
Eleocharis parvula	small spikerush	Cyperaceae	None	None	G5	S 4	4.3	July- August	Marsh & swamp, salt marsh, wetland	In coastal salt marshes. 1-3,020 m.	None
Empetrum nigrum	black crowberry	Ericaceae	None	None	G5	S1	2B.2	July- August	Coastal bluff scrub, coastal prairie.	3-15 m.	None
Epilobium septentrionale	Humboldt County fuchsia	Onagraceae	None	None	G4	G4	4.3	July- Sept.	coniferous	Dry, sandy or rocky ledges. 45-1,800 m.	None
Erigeron bloomeri var. nudatus	Waldo daisy	Asteraceae	None	None	G5T4	S3	2B.3	June- July	Lower montane coniferous forest, upper montane coniferous forest.	In open areas on dry rocky outcrops on serpentine. 730-1,740 m.	None
Erysimum menziesii	Menzies' wallflower	Brassic- aceae	E	E	G1	S1	1B.1	March- Sept.	Coastal dunes.	Localized on dunes and coastal strand. 0-35 m.	None



Regionally-Occurring Special-status Plant Species Scoping List CNDDB, CNPS, IPaC Arcata Land Co.

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Erythronium oregonum	giant fawn lily	Liliaceae	None	None	G4G5	S2	2B.2	March- June	Cismontane woodland, meadows, seeps	Openings. Sometimes on serpentine; rocky sites. 300-1,435 m.	None
Erythronium revolutum	coast fawn lily	Liliaceae	None	None	G4G5	S 3	2B.2	March- August	Bogs & fens, broadleaf upland forest, N. coast conifer forest.	Mesic sites; streambanks. 60-1,405 m.	Low
Fissidens pauperculus	minute pocket moss	Fissident- aceae	None	None	G3?	S2	1B.2	Lichen	North coast coniferous forest, Redwood.	On damp soil along the coast. In dry streambeds and on stream banks. 10-1,024 m.	Low
Fritillaria purdyi	Purdy's fritillary	Liliaceae	None	None	G4	S4	4.3	March- June	Chaparral, cismontane wood-land, low montane conifer forest.	Usually on serpentine. 175-2,255 m.	None
Gilia capitata ssp. pacifica	Pacific gilia	Polemoni- aceae	None	None	G5T3	S2	1B.2	April- August	Coastal bluff scrub, chaparral, coastal prairie, valley & foothill grassland.	5-1,345 m.	Low
Gilia millefoliata	dark-eyed gilia	Polemoni- aceae	None	None	G2	S2	1B.2	April- July	Coastal dunes.	1-60 m.	None
Glehnia littoralis ssp. leiocarpa	American glehnia	Apiaceae	None	None	G5T5	S 3	4.2	May- August	Coastal Dunes	0-20 m.	None
Hemizonia congesta ssp. tracyi	Tracy's tarplant	Asteraceae	None	None	G5T4	S4	4.3	May- Oct.	Coastal prairie N. coast conifer forest, ultramafic, valley & foothill grassland	Openings; sometimes on serpentine. 120-1,200 m.	None



Regionally-Occurring Special-status Plant Species Scoping List CNDDB, CNPS, IPaC Arcata Land Co.

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Hesperevax sparsiflora var. brevifolia	short-leaved evax	Asteraceae	None	None	G4T3	S2	1B.2	March- June	Coastal bluff scrub, coastal dunes, coastal prairie.	Sandy bluffs and flats. 0-215 m.	None
Hosackia gracilis	harlequin lotus	Fabaceae	None	None	G4	S 3	4.2	March- July	Broadleaf upland forest, coast bluff scrub, coast prairie, coast scrub, closed- cone conifer forest, N. coast conifer forest, valley & foothill grassland.	Wetlands and roadsides. Meadow, seep, marsh & swamp. 0-700 m.	Moderate
Iliamna Iatibracteata	California globe mallow	Malvaceae	None	None	G2G3	S2	1B.2	June- August	N. Coast conifer forest, chaparral, low montane conifer forest, riparian scrub (streambanks).	Seepage areas in silty clay loam. 60-2,000 m.	Low
Juncus nevadensis var. inventus	Sierra rush	Juncaceae	None	None	G5T3- T4	S1	2B.2	July- Nov.	Bogs and fens, Wetlands.	0-10 m.	Low
Lasthenia californica ssp. macrantha	perennial goldfields	Asteraceae	None	None	G3T2	S2	1B.2	Jan Nov.	Coastal bluff scrub, coastal dunes, coastal scrub.	5-185 m.	Low
Lathyrus glandulosus	sticky pea	Fabaceae	None	None	G3	S 3	4.3	April- June	Cismontane woodland.	In oak woodlands upland from the coast redwood forests & along roadsides. 300-800 m.	Low



Regionally-Occurring Special-status Plant Species Scoping List CNDDB, CNPS, IPaC Arcata Land Co.

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Lathyrus japonicus	seaside pea	Fabaceae	None	None	G5	S2	2B.1	May- August	Coastal dunes.	3-65 m.	None
Lathyrus palustris	marsh pea	Fabaceae	None	None	G5	S2	2B.2	March- August	Bogs & fens, lower montane conifer forest, marsh & swamp, N. coast conifer forest, coastal prairie, coastal scrub.	Moist coastal areas. 2-140 m.	Moderate
Layia carnosa	beach layia	Asteraceae	E	E	G2	S2	18.1	March- July	Coastal dunes, coastal scrub.	On sparsely vegetated, semi-stabilized dunes, usually behind foredunes. 0-30 m.	Low
Lilium kelloggii	Kellogg's lily	Liliaceae	None	None	G3	S3	4.3	May- August	Lower montane conifer forest, N. coast conifer forest.	Gaps and roadsides in conifer forest. 3-1,300 m.	Low
Lilium occidentale	western lily	Liliaceae	E	E	G1	S1	1B.1	June- July	Coastal scrub, freshwater marsh, bogs & fens, coastal bluff scrub, coast prairie, N. coast conifer forest, marshes and swamps.	Well-drained, old beach washes overlain with wind-blown alluvium and organic topsoil; usually near margins of Sitka spruce. 3-110 m.	None
Listera cordata	heart-leaved twayblade	Orchidacea e	None	None	G5	S 4	4.2	Feb July	Low montane conifer forest, N. coast conifer forest, Bog & fen.	5-1,370 m.	Low



Regionally-Occurring Special-status Plant Species Scoping List CNDDB, CNPS, IPaC Arcata Land Co.

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Lycopodiella inundata	inundated bog- clubmoss	Lycopodi- aceae	None	None	G5	S1	2B.2	June- Sept.	Bogs and fens, lower montane coniferous forest, marshes and swamps.	Peat bogs, muddy depressions, pond margins. 5-915 m.	None
Lycopodium clavatum	running-pine	Lycopodi- aceae	None	None	G5	\$3	4.1	June- Sept.	Lower montane conifer forest, north coast coniferous forest, marsh & swamp.	Forest understory, edges, openings, roadsides; mesic sites with partial shade and light. 45-1,225 m.	Low
Lycopus uniflorus	northern bugleweed	Lamiacea e	None	None	G5	S4	4.3	July- Sept.	Bogs and fens, marshes and swamps, wetlands.	Wet places. 5-2,000 m.	None
Mitellastra caulescens	leafy- stemmed mitrewort	Saxifrag- aceae	None	None	G5	S 4	4.2	March- Oct.	Broadleaf upland forest, lower montane and North coast coniferous forests, meadows & seeps	Mesic sites. 5-1,700 m.	Low
Monotropa uniflora	ghost-pipe	Ericaceae	None	None	G5	S2	2B.2	June- Sept.	Broadleaf upland forest, north coast coniferous forest.	Often under redwoods or west hemlock. 15-855 m.	None
Montia howellii	Howell's montia	Montiaceae	None	None	G3G4	S2	2B.2	Feb May	Meadows and seeps, north coast coniferous forest, vernal pools.	Vernally wet sites; often on compacted soil. 10-1,005 m.	Moderate



Table 1

Regionally-Occurring Special-status Plant Species Scoping List CNDDB, CNPS, IPaC

Arcata Land Co.

Arcata North and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Oenothera wolfii	Wolf's evening- primrose	Onagraceae	None	None	G2	S 1	1B.1	May- Oct.	Coastal bluff scrub, dunes, and prairie, low montane conifer forest.	Sandy substrates; usually mesic sites. 0-125 m.	None
Packera bolanderi var. bolanderi	seacoast ragwort	Asteraceae	None	None	G4T4	S2S3	2B.2	Jan August	Coastal scrub, north coast conifer forest.	Often along roadsides. 30-915 m.	Low
Piperia candida	white- flowered rein orchid	Orchidacea e	None	None	G3	S3	1B.2	May- Sept.	forest, low montane conifer	Sometimes on serpentine. Forest duff, mossy banks, rock outcrops, and muskeg. 45-1,615 m.	None
Pityopus californicus	California pinefoot	Ericaceae	None	None	G4G5	S 4	4.2	March- August	Broadleaf upland forest, upper montane and, N. coast conifer forest, low montane conifer forest.	Deep shade with few understory species, often under layer of duff, in rocky to clay loam soil. 15-2,225 m.	None
Pleuropogon refractus	nodding semaphore grass	Poaceae	None	None	G4	S 4	4.2	March- August	forest, N. coast	Mesic sites along streams, grassy flats in shaded redwood groves. 0-1,600 m.	Low
Polemonium carneum	Oregon polemonium	Polemoni- aceae	None	None	G3G4	S2	2B.2	April- Sept.	Coast scrub & prairie, low montane conifer forest.	0-1,830 m.	Low
Ribes laxiflorum	trailing black currant	Grossulari- aceae	None	None	G5	S4	4.3	March- August		Grows over logs and stumps in moist, wet places. 5-1,395 m.	None



Table 1

Regionally-Occurring Special-status Plant Species Scoping List CNDDB, CNPS, IPaC Arcata Land Co.

Arcata North and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Romanzoffia tracyi	Tracy's romanzoffia	Boragin- aceae	None	None	G4	S2	2B.3	March- May	Coastal bluff scrub, coastal scrub.	Rocky sites. 15-300 m.	None
Sidalcea malachroides	maple- leaved checkerbloo m	Malvaceae	None	None	G3	S 3	4.2	March- August	Broadleaf upland forest, coast prairie, coast scrub, North coast coniferous forest, riparian.	Woodlands and clearings near coast; often in disturbed areas. 0-730 m.	Low
Sidalcea malviflora ssp. patula	Siskiyou checkerbloo m	Malvaceae	None	None	G5T2	S2	1B.2	May- August	Coast bluff scrub, coast prairie, north coast coniferous forest.	Open coastal forest; roadcuts. 5-1,255 m.	Moderate
Sidalcea oregana ssp. eximia	coast checkerbloo m	Malvaceae	None	None	G5T1	S1	1B.2	June- August	Meadow & seep, North coast & low montane conifer forest.	Near meadows, in gravelly soil. 5-1,805 m.	Low
Silene scouleri ssp. scouleri	Scoulers catchfly	Caryophylla ceae	None	None	G5T5	S2S3	2B.2	March- Sept.	Coastal bluff scrub, coastal prairie, valley and foothill grasslands.	0-1,970 m.	Low
Spergularia canadensis var. occidentalis	western sand- spurrey	Caryophyll- aceae	None	None	G5T4	S1	2B.1	June- August	Marshes and swamps (coastal salt marshes).	0-3 m.	Low
Tiarella trifoliata var. trifoliata	trifoliate laceflower	Saxifrag- aceae	None	None	G5T5	S2S3	3.2	June- August	Lower montane coniferous forest, north coast coniferous forest.	Forest edge; moist shady banks. 170-1,500 m.	None



Table 1

Regionally-Occurring Special-status Plant Species Scoping List CNDDB, CNPS, IPaC

Arcata Land Co.

Arcata North and Surrounding 7.5-min Quadrangles

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Trichodon cylindricus	cylindrical trichodon	Ditrichacea e	None	None	G4	S2	2B.2	Moss	Broadleaf upland forest, upper montane	Openings on sandy or clay soil on roadsides, stream banks, trails, fields. 50-1,500 m.	Low
Usnea Iongissima	Methuselah' s beard lichen	Parmeli- aceae	None	None	G4	S4	4.2	Lichen	forest, broadleaf	In the "redwood zone" on tree branches, incl. big leaf maple, oaks, ash, Douglas-fir, and bay. 45-1,465 m in CA.	Low
Viola palustris	alpine marsh violet	Violaceae	None	None	G5	S1S2	2B.2	March- August	Coastal scrub,	Swampy, shrubby places in coast scrub or coastal bogs. 0-150 m.	Low

1. Species indicator status as assigned by Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), and California Department of Fish and Wildlife (CDFW)

C: candidate

FP: fully protected

CT: candidate threatened

PT: proposed threatened

D: delisted

SSC: species of special concern

DPS: distinct population segment

T: threatened

E: endangered

WL: watch list

ESU: evolutionarily significant unit

2. Species Heritage rank as assigned by California Department of Fish and Wildlife (CDFW)

G1/S1: critically imperiled

G2/S2: imperiled G3/S3: vulnerable

G4/S4: apparently secure

G5/S5: secure

		T	Are		Company	·	ט ו 	
Calandifia Nama	Canada an Nama	F 11 1 - 4	6-11:-4	Other	Global	State	Habitats	Potential of
Scientific Name	Common Name	FedList	CalList	Status	Rank	Rank	nabitats	occurrence
		T		1	Amphibian	IS		
							Inhabits cold, clear, permanent rocky streams in wet	
							forests. They do not inhabit ponds or lakes. A rocky	
							streambed is necessary for protective cover for adults,	
Ascaphus truei	Pacific tailed frog	None	None	SSC	G4	S3S4	eggs, and larvae.	None
							Occurs in montane hardwood-conifer, redwood,	
5 1 .1 .1							Douglas-fir & ponderosa pine habitats. Restricted to	
Plethodon	Del Norte						perennial montane streams. Tadpoles require water	
elongatus	salamander	None	None	WL	G4	S3	below 15 degrees C.	None
							Humid forests, woodlands, grasslands, & streamsides in	
							NW California, usually near dense riparian cover.	
							Generally near permanent water, but can be found far	
	northern red-legged						from water, in damp woods and meadows, during non-	
Rana aurora	frog	None	None	SSC	G4	S3	breeding season.	Moderate
							Partly-shaded, shallow streams & riffles with a rocky	
							substrate in a variety of habitats. Need at least some	
	foothill yellow-						cobble-sized substrate for egg-laying. Need at least 15	
Rana boylii	legged frog	None	CT	SSC	G3	S3	weeks to attain metamorphosis.	Low
							Coastal redwood, Douglas-fir, mixed conifer, montane	
							riparian and montane hardwood-conifer habitats. Cold,	
							well-shaded, permanent streams and seepages, or	
Rhyacotriton	southern torrent						within splash zone or on moss-covered rock within	
variegatus	salamander	None	None	SSC	G3G4	S2S3	trickling water.Old growth forest.	None
					Birds			
							Woodland, chiefly of open, interrupted or marginal	
							type. Nest sites mainly in riparian growths of deciduous	
							trees, as in canyon bottoms on river flood-plains; also,	
Accipiter cooperii	Cooper's hawk	None	None	WL	G5	S4	live oaks.	High
							Ponderosa pine, black oak, riparian deciduous, mixed	
							conifer & Jeffrey pine habitat. Prefers riparian. North-	
							facing slopes, with plucking perches are critical	
Accipiter striatus	sharp-shinned hawk	None	None	WL	G5	S4	requirements. Nests usually within 275 ft of water.	Moderate



		1		1	a company	<u> </u>		
6				Other	Global	State	Habitats	Potential of
Scientific Name	Common Name	FedList	CalList	Status	Rank	Rank		occurrence
							Live in freshwater, brackish, and marine wetlands.	
Ardea alba	great egret	None	None	S	G5	S4	During the breeding season they live in colonies in trees or shrubs with other waterbirds.	High
Aluea alba	great egret	None	None	3	G5	34		півіі
							Colonial nester in tall trees, cliffsides, and sequestered spots on marshes.	
							Rookery sites in close proximity to foraging areas:	
							marshes, lake margins, tide-flats, rivers and streams,	
Ardea herodias	great blue heron	None	None	S	G5	S4	wet meadows.	Moderate
7 II ded Herodias	great blue heron	Itoric	110110		- 65	1	wet meddows.	Wioderate
							Live in large, open areas with low vegetation, including	
							prairie and coastal grasslands, heathlands, meadows,	
							shrubsteppe, savanna, tundra, marshes, dunes, and	
Asio flammeus	short-eared owl	None	None	SSC	G5	S5	agricultural areas.	High
							In winter they move to areas where water bodies don't	
							freeze, especially near the coast, where they	
							occasionally use brackish marshes.	
Botaurus							Usually build their nests among thick stands of cattails,	
lentiginosus	American bittern	None	None	None	G4	S3S4	bulrushes, and sedges that grow out of shallow water.	None
							Breeds in coniferous forests near coasts, nesting on	
Brachyramphus							large horizontal branches high up in trees.	
marmoratus	marbled murrelet	Т	E	None	G3G4	S1	Winters at sea.	None
Cerorhinca								
monocerata	rhinoceros auklet	None	None	WL	G5	S3	Mostly pelagic. Nests on islands in ground burrows.	None
							Nests in coniferous or mixed forest.	
Chaetura vauxi	Vaux's swift	None	None	SSC	G5	S2S3	Forages in forest openings, especially above streams.	Moderate
Charadrius								
alexandrinus	western snowy						Sandy beaches, salt pond levees & shores of large alkali	
nivosus	plover	Threatened	None	SSC	G3T3	S2S3	lakes. Needs sandy, gravelly or friable soils for nesting.	None
	h			1777		1=13	and the state of t	
							Short grasslands, freshly plowed fields, newly	
							sprouting grain fields, & sometimes sod farms.	
Charadrius							Short vegetation, bare ground & flat topography.	
montanus	mountain plover	None	None	SSC	G3	S2S3	Prefers grazed areas & areas with burrowing rodents.	None



.				Other	Global	State		Potential of
Scientific Name	Common Name	FedList	CalList	Status	Rank	Rank	Habitats	occurrence
							Breeding is most common in large, undisturbed tracts	
							of wetlands and grasslands with low, thick vegetation.	
							During winter they use a range of habitats with low	
							vegetation, including deserts, coastal sand dunes,	
							pasturelands, croplands, dry plains, grasslands, old	
Circus cyaneus	northern harrier	None	None	SSC	G5	S3	fields, estuaries, open floodplains, and marshes.	High/Present
							Yellow-billed Cuckoos use wooded habitat with dense	
							cover and water nearby, including woodlands with low,	
							scrubby, vegetation, overgrown orchards, abandoned	
Coccyzus							farmland, and dense thickets along streams and	
americanus	yellow-billed cuckoo	T	E	BCC, S	G5T2T3	S1	marshes.	None
							Winters at forest edges and clearings where tall trees	
							or snags are present.	
							Nest is an open cup of twigs, rootlets, and lichens,	
Contopus cooperi	olive-sided flycatcher	None	None	SSC	G4	S4	placed out near tip of horizontal branch of a tree.	Low
							In winter, drier fresh-water and brackish marshes, as	
Coturnicops							well as dense, deep grass, and rice fields.	
noveboracensis	yellow rail	None	None	SSC	G4	S1S2	Nest on the ground.	None
							Snowy Egrets nest in colonies on thick vegetation in	
							isolated places.	
							During the breeding season Snowy Egrets feed in	
							estuaries, saltmarshes, tidal channels, shallow bays,	
							and mangroves.	
							They winter in mangroves, saltwater lagoons,	
							freshwater swamps, grassy ponds, and temporary	
							pools, and forage on beaches, shallow reefs, and wet	
Egretta thula	snowy egret	None	None	None	G5	S4	fields.	Moderate
<u> </u>	, ,						Rolling foothills and valley margins w/scattered oaks &	
							river bottomlands or marshes next to deciduous	
							woodland.	
							Open grasslands, meadows, or marshes for foraging	
							close to isolated, dense-topped trees for nesting and	
Elanus leucurus	white-tailed kite	None	None	FP	G5	S3S4	perching.	High



Table 2
Regionally-Occurring Special-status Animal Species Scoping List CNDDB, RareFind, & IPaC Arcata North & surrounding 7.5" quadrangles.

Arcata Land Company, Parcel "D"

_				1	Chipany			5
Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Scientific Name	Common Name	reulist	Callist	Status	Naiik	Naiik	In the Pacific Northwest, also breed in drier scrubby	occurrence
							areas. In winter, use shrubby clearings, pastures, and	
							woodland edges often near water. Most nests are in	
							willow, but may also build a nest in box elder,	
							dogwood, hawthorn, bracken fern, and tamarisk about	
Empidonax traillii	willow flycatcher	None	E	S	G5T3T4	S1S2	2–5 feet above the ground.	None
							Breed in open and semi-open areas across northern No.	
							America. The boreal subspecies usually nest near	
							forested openings, in fragmented woodlots, near rivers,	
							lakes, bogs, and on lake islands. The Pacific Northwest	
Falco columbarius	merlin	None	None	WL	G5	S3S4	subspecies nests mostly in coastal areas, along rivers.	Moderate
							Elevations up to about 12,000 feet, as well as along	
							rivers and coastlines or in cities. Any open habitat, but	
Falco peregrinus	American peregrine						with a greater likelihood along barrier islands, mudflats,	
anatum	falcon	D	D	FP	G4T4	S3S4	coastlines, lake edges, and mountain chains.	Moderate
							Breeds on coastal slopes in ground burrows, sometimes	
							under boulders and piles of rocks, occasionally under	
Fratercula cirrhata	tufted puffin	None	None	SSC	G5	S1S2	dense vegetation.	None
							Ocean shore, lake margins, & rivers for both nesting &	
							wintering. Most nests within 1 mi of water. Nests in	
Ualia a atura							large, old-growth, or dominant live tree w/open	
Haliaeetus		5 1:	_		0.5	60	branches, especially ponderosa pine. Roosts	
leucocephalus	bald eagle	Delisted	E	FP	G5	S3	communally in winter.	Low
							Summer resident; inhabits riparian thickets of willow &	
							other brushy tangles near watercourses. Nests in low,	
lataria virana	vollavi hvanstad shat	Nana	Nana	ccc	CF	CO	dense riparian, consisting of willow, blackberry, wild	1
Icteria virens	yellow-breasted chat	None	None	SSC	G5	S3	grape; forages and nests w/i 10 ft of ground.	Low
Numenius							Breeds in upland shortgrass prairies & wet meadows in	
	long billed aurlaur	None	None	\A/I	CE	S2	northeastern California. Habitats on gravelly soils and	None
americanus	long-billed curlew	None	None	WL	G5	52	gently rolling terrain are favored over others.	None
							Marsh, swamp, riparian forest, riparian woodland,	
Nycticorax	black-crowned night						wetland. Colonial nester, in trees, occasionally in tule	
nycticorax	heron	None	None	None	G5	S4	patches. Rookery sites located adjacent to foraging	Low
TIYCUCUIAX	Heron	NOTIE	None	None	رق	34	areas: lake margins, mud-bordered bays, marshy spots.	Low



				Other	Global	State		Potential of
Scientific Name	Common Name	FedList	CalList	Status	Rank	Rank	Habitats	occurrence
Oceanodroma	fork-tailed storm-						Pelagic, foraging and wintering in nearshore waters.	
furcata	petrel	None	None	SSC	G5	S1S2	Nests in burrows and crevices.	None
							Near rivers, lakes, reservoirs, lagoons, swamps, and	
							marshes. Nests are usually built on snags, treetops, or	
							crotches between large branches and trunks; on cliffs	
Pandion haliaetus	osprey	None	None	WL	G5	S4	or human-built platforms.	Low
							Savannah Sparrows live in grasslands with few trees,	
Dagagaraulus							including meadows, pastures, grassy roadsides, sedge	
Passerculus	B						wetlands, and cultivated fields planted with cover crops	
sandwichensis	Bryant's savannah			666	057070	6060	like alfalfa. Near oceans, they also inhabit tidal	
alaudinus	sparrow	None	None	SSC	G5T2T3	S2S3	saltmarshes and estuaries.	High
Pelecanus							Colonial nester on coastal islands just outside the surf	
occidentalis	California brown						line. Nests on coastal islands of small to moderate size	
californicus				FP	G4T3	62	which afford immunity from attack by ground-dwelling	Nama
californicus	pelican	D	D	FP	G413	S3	predators. Roosts communally.	None
							Colonial nester on coastal cliffs, offshore islands, &	
Phalacrocorax	double-crested						along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground	
auritus	cormorant	None	None	WL	G5	S4	with sloping surface, or in tall trees along lake margins.	None
duritus	Commorant	None	IVOITE	VVL	03	37	Inhabits riparian woodlands in Del Norte and northern	None
							Humboldt counties. Mainly found in deciduous tree-	
	black-capped						types, especially willows and alders, along large or	
Poecile atricapillus	chickadee	None	None	WL	G5	S3	small watercourses.	Low
Ptychoramphus							Mostly pelagic. Nests on islands in ground burrows.	
aleuticus	Cassin's auklet	None	None	SSC	G4	S2S4	Dives in the ocean for prey.	None
							Ridgway's Rails live in saltmarsh swamps with extensive	
							vegetation, which they use as refuges, especially at high	
							tide. These birds live in low portions of coastal	
Rallus obsoletus	California Ridgway's						saltmarshes dominated by cordgrass and pickleweed,	
obsoletus	rail	E	E	FP	G5T1	S1	or in mangroves.	None
							Colonial nester; nests primarily in riparian and other	
							lowland habitats west of the desert. Requires vertical	
							banks/cliffs with fine-textured/sandy soils near	
Riparia riparia	bank swallow	None	Т	None	G5	S2	streams, rivers, lakes, ocean to dig nesting hole.	None



				Other	Global	State		Potential of
Scientific Name	Common Name	FedList	CalList	Status	Rank	Rank	Habitats	occurrence
Scientific Nume	Common rume	i carist	Cuilist	Status	Runk	Name	Mature coniferous forest stands with large trees and a	occurrence
							complex array of vegetation types, sizes and ages.	
							Typically in dense section of old forest, the nest is well	
Strix occidentalis	Northern spotted						protected from open sky by a dense tree canopy in a	
caurina	owl	Т	Т	SSC, S	G3T3	S2S3	broken-off treetop or in a cavity.	None
					Fish			
							The most marine species of sturgeon. Abundance	
							increases northward of Point Conception.	
							Spawns in the Sacramento, Klamath, & Trinity Rivers.	
							Spawns at temps between 8-14 C.	
Acipenser							Preferred spawning substrate is large cobble, but can	
medirostris	green sturgeon	Т	None	SSC	G3	S1S2	range from clean sand to bedrock.	None
							Brackish water habitats along the California coast from	
							Agua Hedionda Lagoon, San Diego County to the mouth	
							of the Smith River.	
							Found in shallow lagoons and lower stream reaches,	
Eucyclogobius							they need fairly still but not stagnant water & high	
newberryi	tidewater goby	E	None	SSC	G3	S3	oxygen levels.	None
							Euryhaline, nektonic & anadromous. Open waters of	
							estuaries, mostly mid to bottom of water column.	
							Prefer salinities of 15-30 parts per trillion (ppt), but can	
Spirinchus							be found in completely freshwater to almost pure	
thaleichthys	longfin smelt	С	Т	SSC	G5	S1	seawater.	None
							Found in Klamath River, Mad River, Redwood Creek &	
							in small numbers in Smith River & Humboldt Bay	
							tributaries.	
							Spawn in lower reaches of coastal rivers w/ moderate	
Thaleichthys							water velocities & bottom of pea-sized gravel, sand &	
pacificus	eulachon	Т	None	-	G5	S3	woody debris.	None
							Found in Pacific Coast streams north of San Luis Obispo	
							Co., however regular runs in Santa Clara River.	
							Size of runs is declining. Swift-current gravel-bottomed	
Entosphenus							areas for spawning with water temps between 12-18 C.	
tridentatus	Pacific lamprey	None	None	SSC	G4	S4	Ammocoetes need soft sand or mud.	None



			, (1	cata Earl	a company	, . a. cc.		
Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
							Small coastal streams from the Eel River to the Oregon	
							border. Small, low gradient coastal streams & estuaries.	
Oncorhynchus							Shaded streams with water temps <18C, & small gravel	
clarkii clarkii	coast cutthroat trout	None	None	SSC	G4T4	S3	for spawning.	None
							Small coastal streams, as well as larger rivers, e.g. the	
	coho salmon -						Klamath River system, as far upstream as Iron Gate	
	southern Oregon /						Dam and the Shasta River.	
Oncorhynchus	northern California						Females usually choose spawning sites near the head of	
kisutch pop. 2	ESU	Т	T	None	G4T2Q	S2?	a riffle with medium to small gravel substrates.	None
Oncorhynchus	steelhead - Klamath							
mykiss irideus pop.	Mountains Province						Klamath River and Rouge River watersheds. Mature in	
1	DPS	None	None	SSC	G5T2Q	S2	deep pools and spawn upstream.	None
							Aquatic, California coastal river basins from Redwood	
Oncorhynchus							Creek to and including the Gualala River.	
mykiss irideus pop.	steelhead - northern						Below natural and manmade impassable barriers.	
16	California DPS	T	None	None	G5T2T3Q	S2S3	Excavates in gravel for spawning.	None
							No. California coastal streams south to Middle Fork Eel	
							River. Within range of Klamath Mtns province DPS &	
0							No. California DPS.	
Oncorhynchus							Cool, swift, shallow water & clean loose gravel for	
mykiss irideus pop.	summer-run						spawning, & suitably large pools in which to spend the	
36	steelhead trout	None	None	SSC	G5T4Q	S2	summer.	None
Oncorhynchus	chinook salmon -							
tshawytscha pop.	California coastal						South of the Klamath River to and including the Russian	
17	ESU	Т	None	None	G5	S1	River.	None
Oncorhynchus	chinook salmon -							
tshawytscha pop.	upper Klamath and						Below natural and manmade impassable barriers. Cool,	
30	Trinity Rivers ESU	None	None	SSC	G5	S1S2	fast flowing water, deep with course gravel.	None
		1 1 1 1 1 1 1	1111111		Insects		and the time of time of the time of time of the time of the time of the time of time of time of the time of time o	
							Nests underground or above ground in abandoned bird	
							nests.	
							Coastal areas from Santa Barbara County to north to	
Bombus caliginosus	obscure bumble bee	None	None	VU	G4?	S1S2	Washington State.	Moderate



		I			Clabal			Potential of
Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	occurrence
Scientific Name	Common Name	Tealist	Callist	Status	Naiik	Nank	Once common & widespread, species has declined	occurrence
Bombus							precipitously from central CA to southern B.C. Nest in	
occidentalis	western bumble bee	None	None	S	G2G3	S1	cavities or abandoned burrows.	Moderate
				_			Inhabits areas adjacent to non-brackish water along the	
							coast of California from San Francisco Bay to northern	
							Mexico. Clean, dry, light-colored sand in the upper	
Cicindela hirticollis	sandy beach tiger						zone. Subterranean larvae prefer moist sand not	
gravida	beetle	None	None	None	G5T2	S2	affected by wave action.	None
					Mammals			
							North facing slopes near ample water sources, with	
							dense cover, on steep hillsides with loose soil. Dense	
							herbaceous cover is needed for protection from	
Aplodontia rufa	Humboldt mountain						predators, as well as for forage material, while steep	
humboldtiana	beaver	None	None	None	G5TNR	SNR	loose hillsides allow for burrow creation.	None
	_						Upper and lower montane coniferous forests. Make	
	North American						their dens in hollow trees or in rocky areas. Spend	
Erethizon dorsatum	porcupine	None	None	None	G5	S3	much of the time in trees.	None
							Mature coastal forests in Humboldt & Del Norte cos.	
							Prefers areas near small, clear streams with dense alder	
							& shrubs. Occupies the habitat from the ground surface	
							to the canopy. Feeds in all layers & nests on the ground	
Arborimus albipes	white-footed vole	None	None	SSC	G3G4	S2	under logs or rock.	None
							N. coast fog belt from Oregon border to Sonoma Co. In	
							Douglas-fir, redwood & montane hardwood-conifer	
							forests. Feeds almost exclusively on Douglas-fir	
							needles. Will occasionally take needles of grand fir,	
Arborimus pomo	Sonoma tree vole	None	None	SSC	G3	S3	hemlock or spruce.	None
	6.1						Southern Oregon, Northern California and the Southern	
	fisher - West Coast						Sierra Nevada Mountains, north coast coniferous	
Pekania pennanti	DPS	None	Т	SSC	G5T2T3Q	S2S3	forest, oldgrowth, riparian forest.	None
							Throughout California in a wide variety of habitats.	
•	_ "						Most common in mesic sites. Roosts in the open,	
Corynorhinus	Townsend's big-						hanging from walls & ceilings. Roosting sites limiting.	
townsendii	eared bat	None	None	SSC	G3G4	S2	Extremely sensitive to human disturbance.	None



Scientific Name Common Name FedList CalList Status Rank Rank Habitats Found in all brush, woodland & forest habitats from sea level to about 9000 ft. prefers coniferous. Nursery colonies in buildings, crevices, spaces under bark, & snags. Caves used primarily as night roosts. woodlands Myotis evotis long-eared myotis None None S G5 S3 & forests. Mollusks Eggs incubate and hatch into microscopic mussel infants which attach themselves to the gills or fins of a passing host fish. Once they drop from the fish, they'll burrow into the gravel bed and sediment of the river or falcata western pearlshell None None G4G5 S1S2 lake the fish has reached.	Potential of occurrence None
Found in all brush, woodland & forest habitats from sea level to about 9000 ft. prefers coniferous. Nursery colonies in buildings, crevices, spaces under bark, & snags. Caves used primarily as night roosts. woodlands & forests. Myotis evotis None None S G5 S3 & forests. Eggs incubate and hatch into microscopic mussel infants which attach themselves to the gills or fins of a passing host fish. Once they drop from the fish, they'll burrow into the gravel bed and sediment of the river or falcata Margaritifera Western pearlshell None None None G4G5 S1S2 lake the fish has reached.	
Interest of the second secon	None
Myotis evotis long-eared myotis None None S G5 S3 & forests. Mollusks Caves used primarily as night roosts. woodlands snags. Caves used primarily as night roosts. Woodland	None
Myotis evotis Iong-eared myotis None None S G5 S3 Snags. Caves used primarily as night roosts. woodlands & forests. Mollusks Eggs incubate and hatch into microscopic mussel infants which attach themselves to the gills or fins of a passing host fish. Once they drop from the fish, they'll burrow into the gravel bed and sediment of the river or falcata western pearlshell None None None S G5 S3 Sangs. Caves used primarily as night roosts. woodlands & forests. Eggs incubate and hatch into microscopic mussel infants which attach themselves to the gills or fins of a passing host fish. Once they drop from the fish, they'll burrow into the gravel bed and sediment of the river or lake the fish has reached.	None
Myotis evotis long-eared myotis None None S G5 S3 & forests. Mollusks Eggs incubate and hatch into microscopic mussel infants which attach themselves to the gills or fins of a passing host fish. Once they drop from the fish, they'll burrow into the gravel bed and sediment of the river or falcata western pearlshell None None G4G5 S1S2 lake the fish has reached.	None
Mollusks Eggs incubate and hatch into microscopic mussel infants which attach themselves to the gills or fins of a passing host fish. Once they drop from the fish, they'll burrow into the gravel bed and sediment of the river or falcata western pearlshell None None G4G5 S1S2 lake the fish has reached.	None
Margaritifera falcata Margaritifera Western pearlshell None None None G4G5 S1S2 Eggs incubate and hatch into microscopic mussel infants which attach themselves to the gills or fins of a passing host fish. Once they drop from the fish, they'll burrow into the gravel bed and sediment of the river or lake the fish has reached.	
infants which attach themselves to the gills or fins of a passing host fish. Once they drop from the fish, they'll burrow into the gravel bed and sediment of the river or falcata western pearlshell None None G4G5 S1S2 lake the fish has reached.	
Margaritifera falcata Mone M	
Margaritifera falcata Western pearlshell None None None None None Mone None Mone	
falcata western pearlshell None None G4G5 S1S2 lake the fish has reached.	
	None
Typically inhabit lakes, reservoirs, and slow-moving	
streams with mud or sand substrates, although they	
Anodonta have also been found in rivers and creeks with gravel	
californiensis California floater None None S G3Q S2? substrates	None
Reptiles	
Adult and juvenile green turtles live are generally found	
nearshore as well as in bays and lagoons, on reefs, and	
especially in areas with seagrass beds. They bury eggs	
Chelonia mydas green sea turtle None T None G3 S1 on sandy beaches.	None
A thoroughly aquatic turtle of ponds, marshes, rivers,	
streams & irrigation ditches, usually with aquatic	
vegetation, below 6000 ft elevation. Need basking sites	
and suitable (sandy banks or grassy open fields) upland	
Emys marmorata western pond turtle None None SSC G3G4 S3 habitat up to 0.5 km from water for egg-laying.	None
Species indicator status as assigned by Federal Endangered Species Act (FESA), Species Heritage rank as assigned by California Department of	
California Endangered Species Act (CESA), and California Department of Fish and Wildlife (CDFW): Fish and Wildlife (CDFW):	
C: candidate FP: fully protected G1/S1: critically imperiled	
CT: candidate threatened PT: proposed threatened G2/S2: imperiled	
D: delisted SSC: species of special concern G3/S3: vulnerable	
DPS: distinct population segment T: threatened G4/S4: apparently secure	
E: endangered WL: watch list G5/S5: secure	



Table 3 Botanical Species Observed 5/2/2019, 7/19/2019 Arcata Land Co. Parcel "D", Arcata, CA								
Scientific Name	Common Name	Family	Native?					
Trees								
Salix hookeriana	Hooker's willow	Salicaceae	Y ¹					
Salix lasiolepis	arroyo willow	Salicaceae	Y					
Thuja plicata	western red cedar	Cupressaceae	Y					
Ontono anton franchati"	Shrubs	I D	N12					
Cotoneaster franchettii	Franchett's cotoneaster	Rosaceae	N ²					
Rosa spp.	cultivated rose	Rosaceae	N					
Rubus armeniacus	Himalayan berry	Rosaceae	N					
Octobra de la cons	Sedges and Rushes							
Carex densa	dense sedge	Cyperaceae	Y					
Carex obnupta	slough sedge	Cyperaceae	Y					
Cyperus eragrostis	tall flat sedge	Cyperaceae						
Eleocharis macrostachya	common spikerush	Cyperaceae	Y					
Juncus effusus ssp. pacificus	common rush	Juncaceae	Y					
Agraptic atalanifora	Grasses	Doggoog	N I					
Agrostis stolonifera	creeping bentgrass	Poaceae	N N					
Aira caryophyllea	silver hairgrass	Poaceae						
Alopecurus pratensis	meadow foxtail	Poaceae	N					
Anthoxanthum odoratum	sweet vernal grass	Poaceae	N					
Avena barbata	wild oat	Poaceae	N N					
Briza maxima	large quaking grass	Poaceae	N N					
Briza minor	small quaking grass	Poaceae	N N					
Bromus carinatus var. carinatus	California brome	Poaceae	Y					
Bromus diandrus	rip-gut brome	Poaceae	N N					
Bromus hordeacus	soft chess	Poaceae	N N					
Cortaderia jubata	pampas grass	Poaceae	N N					
Dactylis glomeratum	orchard grass	Poaceae	N					
Deschampsia caespitosa ssp. holciformis	tufted bair grass	Poaceae	Y					
Festuca arundinacea	tufted hair grass California oat-grass	Poaceae	Y					
Festuca arundinacea Festuca bromoides	brome fescue	Poaceae	N N					
Festuca biomoides Festuca microstachys	small fescue	Poaceae	Y					
Festuca microstacinys Festuca Perennis	perennial rye grass	Poaceae	N					
Holcus lanatus		Poaceae	N					
Phalaris arundinacea	velvet grass reed canary grass	Poaceae	N					
Phleum pretense	Timothy grass	Poaceae	N					
Poa annua	annual grass	Poaceae	N					
Poa pratensis	Kentucky bluegrass	Poaceae	N					
Foa praterisis	Herbs	Foaceae	IN					
Allium triguatrum		Allianan	NI NI					
Allium triquetrum	three cornered leek	Alliaceae	N N					
Bellis perenne	English daisy common mustard	Asteraceae	N N					
Brassica rapa	Common mustard	Brassicaceae	IN					
Callitriche heterophylla var.	varied leaved water starwort	Plantaginaceae	Y					
heterophylla Cerastium glomeratum	mouse-ear chickweed	Ŭ	N Y					
Cerastium giomeratum Conium maculatum	poison hemlock	Caryophyllaceae Apiaceae	N N					
	Fuller's teasel		N N					
Dipsacus fullonum Enilohium ciliatum		Dipsacaceae						
Epilobium ciliatum	fringed willow herb	Onagraceae	N N					
Erodium circutarium	heron's bill	Geraniaceae	N					
Erodium moschatum	whitestem filaree	Geraniaceae	N					
Euphorbia peplans Fragaria vesca	petty spurge California strawberry	Euphorbiaceae Rosaceae	N Y					



	anical Species Observed 5						
Arcata Land Co. Parcel "D", Arcata, CA Scientific Name Common Name Family Nativ							
Galium aparine	cleaver plant	Rubiaceae	Y				
Gamochaeta ustulata	featherweed	Asteraceae	Y				
Geranium dissectum	cutleaf geranium	Geraniaceae	N				
Geranium robertianum	Robert's geranium	Geraniaceae	N				
Helminthotheca echioides	bristly ox-tongue	Asteraceae	N				
Hypochaeris radicata	hairy cat's-ear	Asteraceae	N				
Lathyrus latifolius	sweet pea	Fabaceae	N				
Leontodon saxatilis	hawkbit	Asteraceae	N				
Leucanthemum vulgare	oxeye daisy	Asteraceae	N				
Linum bienne	flax	Linaceae	N				
Lotus corniculatus	birds-foot trifoil	Fabaceae	N				
Lysimachia arvensis	scarlet pimpernel	Myrsinaceae	N				
Malva parviflora	cheeseweed mallow	Malvaceae	N				
Matricaria discoidea	pineapple weed	Asteraceae	Y				
Medicago polymorpha	bur clover	Fabaceae	N				
Mentha pulegium	pennyroyal	Lamiaceae	N				
Parentucellia viscosa	yellow glandweed	Orobanchaceae	N				
Plantago lanceolata	English plantain	Plantaginaceae	N				
Polygonum aviculare	prostrate knotweed Polygonaceae		N				
Potentilla anserine ssp. pacifica	silverweed						
Prunella vulgaris var. lanceolata	self-heal	Lamiaceae	Y				
Ranunculus repens	creeping buttercup	Ranunculaceae	N				
Raphanus sativa	wild radish	Onagraceae	N				
Rumex acetosella	sheep sorrel	Polygonaceae	N				
Rumex crispus	curly dock	Polygonaceae	N				
Sonchus olereacus	sow thistle	Asteraceae	N				
Stachys ajugoides	bugle hedge-nettle	Lamiaceae	Y				
Stachys chamissonis	hedge nettle	Lamiaceae	Y				
Stellaria media	chickweed	Caryophyllaceae	N				
Taraxacum officinale	dandelion	Asteraceae	N				
Trifolium fragiferum	strawberry clover	Fabaceae	N				
Trifolium incarnatum	crimson clover	Fabaceae	N				
Trifolium repens	white clover	Fabaceae	N				
Trifolium subterraneum	subterranean clover	Fabaceae	N				
Veronica americana	American brooklime	Scrophulariaceae	Υ				
Vicia hirsuta	tiny vetch	Fabaceae	N				
Vicia sativa ssp. sativa	spring vetch	Fabaceae	N				
•	Vines		•				
Convolvulus arvensis	field bindweed	Convolvulaceae	N				
83 Species			26% Native				

2. N: No



Table 4 Animals Observed 5/2/19

Arcata	Land Co	, Parcel	"D",	Arcata,	CA

Scientific Name	Common Name	Family	Nesting Habit	Listed?		
	Amphibians					
Pseudacris regilla	Northern Pacific Treefrog	Hylidae	Any standing freshwater. Males and females pair up in the water where the female lays her eggs as the male fertilizes them externally. The eggs hatch into tadpoles which feed in the water and eventually grow four legs, lose their tails and emerge onto land where they disperse into the surrounding territory.	NL		
			Birds			
Corvus corax	Common raven	Corvidae	A stick nest is built high in a tree, on a cliff under a rock overhang, or on artificial structures.	NL		
Circus cyaneus	Northern harrier	Accipitridae	Nest is built on the ground in thick vegetation using small branches and lined with grasses.	SSC		
Bombycilla cedrorum	Cedar waxwing	Passeriformes	Cup nest placed in a tree of varying species and height.	NL		
Hirundo rustica	Barn swallow	Hirundinidae	Mud half-cup nest often placed on artificial structures such as eaves of buildings and under bridges.	NL		
Molothrus ater	Brown-headed cowbird	Icteridae	Nest parasite. They lay their eggs in the active nests of other birds that then unintentionally "host" the young.	NL		
Mammals						
Thomomys bottae	Botta's Pocket Gopher	Geomyidae	(signs found - mounds & excavated tunnel entrances)	NL		
NL = Not Listed						

SSC = Species of Special Concern



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

Wetland and Other Waters Delineation Report

Arcata Land Company

Assessor's Parcel Numbers:

503-231-004 506-231-010

505-151-003 506-231-011

505-151-004 507-181-007

Arcata, California





Prepared for:

Rudolph Visser Arcata Land Company



June 2020 017062 Reference: 017062

Wetland and Other Waters Delineation Report

Arcata Land Company

Assessor's Parcel Numbers:

503-231-004 506-231-010

505-151-003 506-231-011

505-151-004 507-181-007

Arcata, California

Prepared for:

Rudoph Visser Arcata Land Company, LLC

Prepared by:

812 W. Wabash Ave. Eureka, CA 95501

June 2020

707-441-8855

QA/QC:CIW

Table of Contents

			Page					
Abbre	eviations	s and Acronyms	ii					
1.0	Introd	Introduction						
	1.1	Purpose						
	1.2	Project Location						
2.0	Proied	ct Description	1					
	•	·						
3.0		onmental Setting						
	3.1 3.2	Site OverviewSite Hydrology						
	3.3	National Wetlands Inventory (NWI)						
		, , ,						
4.0	Veget	tation	3					
5.0	Geolo	ogic and Soil Composition	3					
6.0	Regul	latory Setting	θ					
	6.1	Federal Laws						
		6.1.1 Section 401 and 404 of the Clean Water Act						
		6.1.2 Rivers and Harbors Appropriation Act of 1899						
	6.2	State Laws						
		6.2.1 California Coastal Act						
		6.2.2 Porter-Cologne Water Quality Control Act	7					
7.0	Meth	Methods						
	7.1	Vegetation Methods	8					
	7.2	Soils Methods	g					
	7.3	Hydrology Methods	9					
	7.4	Ordinary High Water Mark Methods	10					
8.0	Discus	ssion and Results						
	8.1	TP1U						
	8.2	TP2U						
	8.3	TP3U						
	8.4	TP4U						
	8.5	TP5U						
	8.6	TP6U						
	8.7 8.8	TP7U						
	8.8 8.9	TP8UTP9U						
	8.10	TP10U	_					
	8.11	TP11U						
	8.12	TP12W						
	8.13	TP13U						
	8.14	TP14U						
	8.15	TP15U						
	8.16	TP16U						
	8.17	TP17W						
	8.18	Ordinary High Water Mark	16					
	8.19	Waters of the State	16					

9.0	Conclu	ısions	16	
10.0	Limitations			
11.0	References Cited			
Appen	dices			
	1.	Site Photographs		
	2.	National Wetlands Inventory		
	3.	Plant List		
	4.	Wetland Determination Data Forms		
	c			

List of Illustrations

Figures		Follows Page
1.	Project Location Map	1
2.	Wetland and OHWM Delineation Map	1
Tables		On Page
1.	WETS Rainfall Data	2
2.	Wetland Delineation and OHWM Results	17



Abbreviations and Acronyms

ALC Arcata Land Company, LLC APN Assessor's parcel number

CDEC California Data Exchange Center
CFR Code of Federal Regulations

CT control point
CWA Clean Water Act
EM emergent

EPA United States Environmental Protection Agency

ERDC/CRREL United States Army Engineer Research and Development Center/Cold Regions Research

and Engineering Laboratory

FAC facultative wetland plant species

FACU facultative-upland wetland plant species FACW facultative-wet wetland plant species

GIS geographic information system
GPS global positioning system

NGTOC National Geospatial Technical Operations Center

NL not listed wetland plant species

NRCS Natural Resources Conservation Service

NWI National Wetlands Inventory
OBL obligate wetland plant species
OHWM ordinary high water mark

PEM1B Palustrine Emergent Persistent Seasonally Saturated

Redox redoximorphic

RWQCB California Regional Water Quality Control Board

SWRCB State Water Resources Control Board

TP test pit

UPL upland wetland plant species

USACE United States Army Corps of Engineers

USC United States Code

USDA United States Department of Agriculture
USFWS United States Fish & Wildlife Service
USGS United States Geological Survey
WDRs waste discharge requirements

WETS Climate Analysis for Wetlands Tables

WoS waters of the State

WoUS waters of the United States



1.0 Introduction

SHN has prepared this Wetland and Other Waters Delineation Report for the Arcata Land Company, LLC (ALC) in Arcata, California. This site has historically been used as an industrial lumber mill and more recently, for agricultural purposes. Fieldwork was performed by SHN staff soil scientists and botanists.

1.1 Purpose

The purpose of this report is to identify potential wetlands and other waters of the United States and State within the project area, as defined by the United States Army Corps of Engineers (USACE) and State methods. The delineation of these features will help guide the design and construction of future development within the study area to minimize or avoid impacts to potential jurisdictional wetlands and other waters.

1.2 Project Location

The project is located in the "Arcata Bottoms" at 3318 Foster Avenue, Arcata, California. The project is 2.9 miles east of the Pacific Ocean, at a 25-foot elevation above sea level (Figure 1; United States Geological Survey [USGS] Arcata North 7.5-minute Quadrangle; USGS, 2012), located in the Township 06 North, Range 01 east, Sections 19 and 20 in the Humboldt Meridian. The study area is composed of two sections: the main contiguous 71.5-acre area east of the industrial mill building (Study Area A), and a 2.0-acre area west of the industrial mill building (Study Area B) (Figures 1 and 2). The Assessor's parcel numbers (APN) for this study area are 503-231-004, 505-151-003, 505-151-004, 506-231-010, 506-231-011, and 507-181-007, with a central location at latitude 40.885619° and longitude -124.101504°.

2.0 Project Description

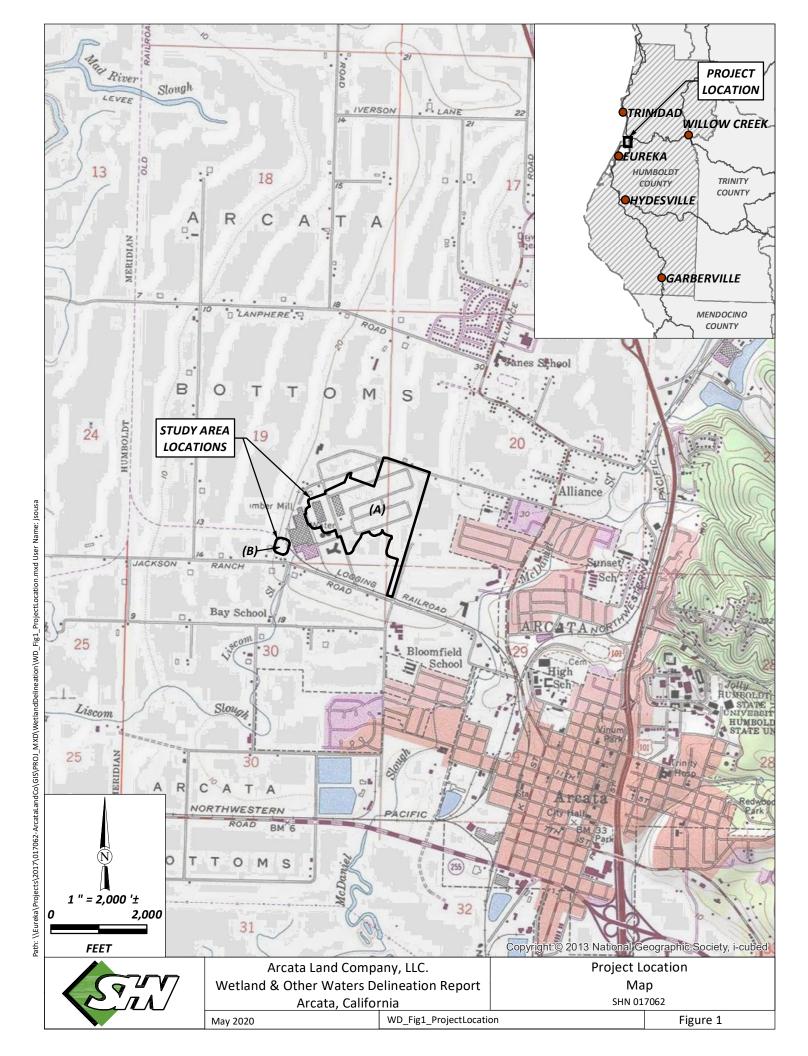
Arcata Land Company is proposing commercial cannabis activities at the project site. This report will assist with site planning and development considerations.

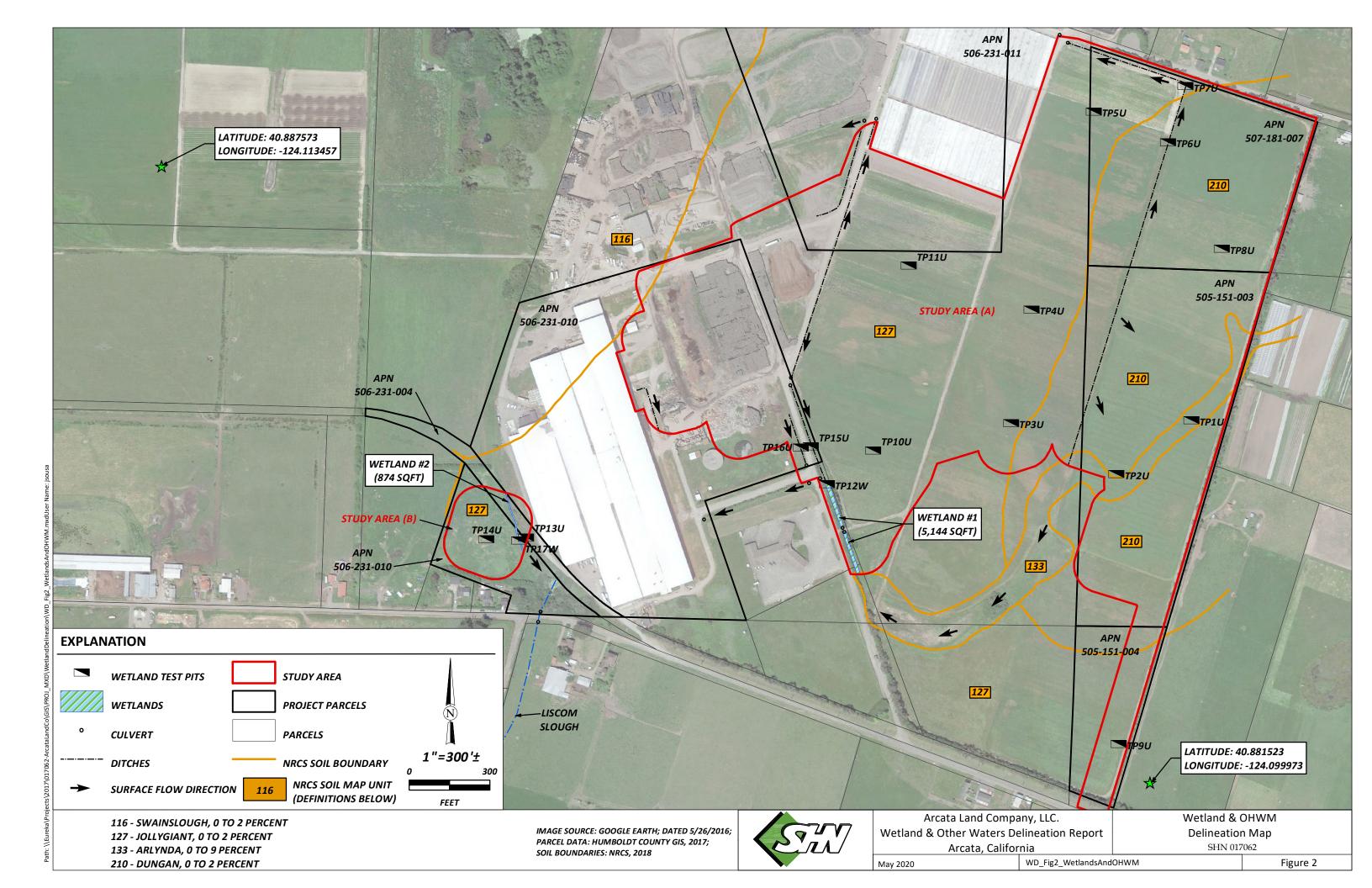
3.0 Environmental Setting

3.1 Site Overview

A review of historical photos (City of Arcata, 2017) show that this site was used for hay or livestock production until Simpson Lumber Company constructed an industrial mill facility sometime between 1948 and 1954 (Appendix 1, Photo 1). The site has been modified many times with the addition of warehouses and lumber storage racks. Between 1988 and 1993, the historical photos show the removal of storage racks. The fields have since been graded and are currently used for agriculture. Drainage ditches were installed to prevent surface water accumulation within or around fields and existing infrastructure. The majority of these drainage ditches are actively maintained.







3.2 Site Hydrology

The United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) Climate Analysis for Wetlands Table (WETS) method was used to review rainfall conditions for the previous three months prior to the test pit (TP) investigations (or the same month and two months prior if after the 15th; Table 1; USDA-NRCS, 2017a and 2020). The first season of TP investigations occurred December 18, 19, and December 21, 2017. The 2017 rainfall data for October, November, and December (California Data Exchange Center [CDEC], 2017) were compared to the 30-year rainfall average at the Woodley Island Weather Forecast Office in Eureka, California (1981-2010 data) for the same months. If the current rainfall of each month is between 30% and 70% of the 1981-2010 precipitation average, it is "normal" rainfall; if above 70%, it is ranked "wetter than normal" rainfall; if below 30%, it is ranked "drier than normal" rainfall. The rainfall for this 2017 period is considered "normal" (Table 1). The second TP investigation occurred on May 11, 2020. The data for the 2020 rainfall data for February, March, and April (CDEC, 2020) were compared to the 30-year rainfall average at the Woodley Island Weather Forecast Office in Eureka, California (1981-2010 data) for the same months. This TP investigation was performed during a "drier than normal" rainfall.

Table 1. WETS¹ Rainfall Data
Arcata Land Company, LLC
Arcata. CA

Alcutu, CA								
Month	WETS Condition	<30%	> 70%	Rainfall (in.)	Condition Value	Weight	Product Value	
December 18, 19, and 21, 2017: Test Pit Excavation								
December 2017	Below Normal	4.78	9.86	1.94	1	3	3	
November 2017	Above Normal	3.35	6.80	7.4	3	2	6	
October 2017	Normal	1.10	2.73	1.64	2	1	2	
Total ² Normal Rainfall							11	
May 11, 2020: Test Pit Excavation								
April 2020	Normal	1.93	4.03	2.17	2	3	6	
March 2020	Below Normal	3.64	6.32	2.87	1	2	2	
February 2020	Below Normal	3.51	6.71	0.36	1	1	1	
Total ² Drier than Normal Rainfall						9		

^{1.} WETS: Climate Analysis for Wetlands Tables.

Sources: CDEC, 2017 and 2020; USDA-NRCS, 2017a

3.3 National Wetlands Inventory (NWI)

The United States Fish and Wildlife Service (USFWS) NWI website (USFWS, 2017) shows a Palustrine Emergent Persistent Seasonally Saturated (PEM1B) system covering the entire parcel, except for the main building area and its surrounding parking area (Appendix 2). This general categorization by the NWI is not intended for planning purposes, because of the lack of ground-truthing. In their "Data Limitations, Exclusions and Precaution" disclaimer, it states that:

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed



^{2.} 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.

on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis. (USFWS, 2017)

The intention of this project is to determine wetland boundaries with the addition of onsite soils, hydrology and vegetation mapping.

4.0 Vegetation

Approximately 20% of the main study area (A) is within the industrial mill building site and mostly covered with concrete. There are portions of roadways, soil/wood chip piles, and drainageways that are graveled or on soil (Appendix 1, Photo 2). This supports primarily exotic plant growth such as sow thistle (Sonchus oleraceus [UPL]), red-seeded dandelion (Taraxacum officinale [FACU]), Italian ryegrass (Festuca perennis [FAC]), bull thistle (Cirsium vulgare [FACU]), curly dock (Rumex crispus [FAC]), and common mustard (Brassica rapa [FACU]), as well as the native red-tinged bulrush (Scirpus microcarpus [OBL]). The rest of the study area consists of graded agricultural fields (Appendix 1, Photo 3) with orchard grass (Dactylis glomerata [FACU]), velvet grass (Holcus lanatus [FAC]), Italian ryegrass [FAC], sweet vernal grass (Anthoxanthum odoratum [FACU]), English plantain (Plantago lanceolata [FACU]), white clover (Trifolium repens [FAC]), curly dock [FAC], and dove's foot geranium (Geranium molle [NL]). Some fields were recently seeded with burseem clover (Trifolium X [NL]).

The portion of the study area west of the mill warehouses (study area B) is bisected by a drainageway that is bordered by a Himalayan blackberry thicket (Rubus armeniacus [FAC]), which also contains red alder (Alnus rubra [FAC]), common mustard [FACU], wild teasel (Dipsacus fullonum [FAC]), bull thistle [FACU], Queen Anne's lace (Daucus carota [FACU]), poison hemlock (Conium maculatum [FAC]), and creeping buttercup (Ranunculus repens [FAC]). The rest of this study area is pasture grazed by livestock, dominated by Italian ryegrass [FAC], and orchard grass [FACU].

A complete list of plants observed within the study area is compiled in Table 1 in Appendix 3.

5.0 Geologic and Soil Composition

The project site is located in the "Arcata Bottoms," a broad alluvial plain at the northern end of Humboldt Bay (Figure 1). Published geologic maps of the region indicate that native materials at the site consist of Quaternary aged alluvium (Kelley, 1984). Alluvium on the Arcata Bottoms is described as unconsolidated coarse- to fine-grained sand and silt, with gravel in channel areas; the alluvium may locally interfinger with marine terrace deposits. At least some of the alluvium on the Arcata Bottoms is inferred to be Holocene in age and appears to reflect deposition by the Mad River following the most recent sea level low stand.

The underlying soils in the study area have the USDA-NRCS classification of Swainslough, 0-2 percent slope (map unit 116); Jollygiant, 0-2 percent slopes (map unit 127); Arlynda, 0-9 percent slopes (map unit 133); and Dungan, 0-2 percent slope (map unit 210) and are described below. The actual soil description at each exploratory soil TP is included in the field data forms found in Appendix 4 with photos in Appendix 1.

116—Swainslough, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hs3n Elevation: 0 to 160 feet

zievation. o to 100 jeet

Mean annual precipitation: 35 to 80 inches

STAN

Mean annual air temperature: 50 to 55 degrees F

Frost-free period: 275 to 330 days

Farmland classification: Farmland of statewide importance

Description of Swainslough

Typical profile

Oi - 0 to 3 inches: slightly decomposed plant material

A - 3 to 12 inches: silty clay loam
Bg1 - 12 to 20 inches: silty clay loam
Bg2 - 20 to 29 inches: silty clay loam
Bg3 - 29 to 38 inches: silty clay loam
Bg4 - 38 to 65 inches: silty clay loam

<u>Properties and qualities</u> Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately

high (0.06 to 0.60 in/hr)

Depth to water table: About 0 to 4 inches

Frequency of flooding: Occasional Frequency of ponding: Frequent

Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

Available water storage in profile: High (about 10.5 inches)

Hydric soil rating: yes

127—Jollygiant, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: q1hl

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

Description of Jollygiant

Ap - 0 to 16 inches: silty clay loam Bq1 - 16 to 33 inches: silty clay loam

Bg2 - 33 to 47 inches: loam

Bg3 - 47 to 63 inches: very fine sandy loam

<u>Properties and qualities</u> Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural 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

Custom Soil Resource Report 16 Frequency of flooding: Rare Frequency of ponding: None



Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: High (about 10.1 inches)

Hydric soil rating: no

133—Arlynda, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: hs5q

Elevation: 0 to 230 feet

Mean annual precipitation: 35 to 80 inches Mean annual air temperature: 50 to 56 degrees F

Frost-free period: 275 to 330 days

Farmland classification: Not prime farmland

Description of Arlynda

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material

Ap - 1 to 9 inches: silty clay loam Bg1 - 9 to 22 inches: silty clay loam Ab - 22 to 27 inches: clay loam

2Bg1 - 27 to 34 inches: silty clay loam 2Bg2 - 34 to 52 inches: silt loam

<u>Properties and qualities</u> Slope: 0 to 9 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very 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 0 to 4 inches

Frequency of flooding: Occasional Frequency of ponding: Frequent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: High (about 10.3 inches)

Hydric soil rating: yes

210—Dungan, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hs2j Elevation: 10 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

Description of Dungan

Typical profile

Ap1 - 0 to 3 inches: silt loam Ap2 - 3 to 13 inches: silt loam Bw - 13 to 29 inches: silt loam

C1 - 29 to 37 inches: fine sandy loam



C2 - 37 to 61 inches: silty clay loam

<u>Properties and qualities</u> Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

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

2.00 in/hr)

Depth to water table: About 39 to 61 inches

Frequency of flooding: Rare Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: High (about 10.8 inches)

Hydric soil rating: no (USDA, 2017b)

6.0 Regulatory Setting

6.1 Federal Laws

6.1.1 Section 401 and 404 of the Clean Water Act

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

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

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

Under 33 CFR 328.3, WoUS do not include prior converted cropland or waste treatment systems.

In 2008, the EPA and USACE released a guidance memorandum implementing the Supreme Court's decision in the cases of the Rapanos v. U.S. and Carabell v. U.S. Because of these cases, the agencies will apply a significant nexus standard to the following categories of waterbodies to determine if it meets the definition of WoUS:

Non-navigable tributaries that are not relatively permanent



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

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

6.1.2 Rivers and Harbors Appropriation Act of 1899

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

6.2 State Laws

6.2.1 California Coastal Act

This site is outside of the California Coastal Act jurisdiction.

6.2.2 Porter-Cologne Water Quality Control Act

The State of California maintains independent regulatory authority over the placement of waste, including fill, into Waters of the State (WoS) under the Porter-Cologne Water Quality Control Act. WoS are defined by the Porter-Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The SWRCB protects all waters in its regulatory scope but has special responsibility for isolated wetlands and headwaters. WoS are regulated by the RWQCBs under the State Water Quality Certification Program, which regulates discharges of dredged and fill material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act.

Projects that require a USACE permit, or fall under other federal jurisdiction, and have the potential to impact WoS are required to comply with the terms of the Water Quality Certification Program. If a proposed project does not require a federal license or permit, but does involve activities that may result in a discharge to WoS, then the local RWQCB has the option to regulate such activities under its state authority in the form of waste discharge requirements (WDRs) or certification of WDRs. Water Quality Order No. 2004-0004-DWQ specifies general WDRs for dredge or fill discharges to waters deemed by the USACE to be outside of federal jurisdiction under Section 404 of the CWA. The State Water Board follows the USACE's 1987 Manual and Supplement's methods (Environmental Laboratory, 1987) for delineating wetlands in all but when using the vegetation less than five percent criteria. The USACE does not recognize wetland status if there is less than 5-percent vegetation during the peak growing season, while the State Water Board does, such as in tidal flats, vernal pools, and playas. The State may claim jurisdiction over naturally-occurring wetlands lacking vegetation that the USACE would not (SWRCB, 2019).



7.0 Methods

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

Hydrophytic vegetation refers to plant species known to be adapted to wetland sites. To classify the hydrophytic plants onsite, the most recent *Western Mountains, Valleys, and Coast 2016 Regional Wetland Plant List* was used (USACE, 2016). Hydric soils are soils that are formed under saturated conditions, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile (USDA, 2017c). Wetland hydrology is demonstrated through direct evidence (primary indicators) or indirect evidence (secondary indicators) of flooding, ponding, or saturation for a significant portion of the growing season (USACE, 2010).

Prior to conducting the field investigation, SHN staff reviewed the USGS topographic quadrangle map (Figure 1); Google Earth (Google Earth, 2016); USDA-NRCS Web Soil Survey website (USDA, 2017b); and NWI map (USFWS, 2017; Appendix 2). Prior to the test pit investigation, a preliminary site investigation was performed on March 30, 2017 to view existing hydrology. During the test pit subsurface investigation, sample points were characterized at the site for the aforementioned botanical, hydrological, and soil parameters.

Wetland test pit locations were selected to:

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

All field mapping was completed with a Trimble Pro 6t global positioning system (GPS) antenna connected to a Panasonic Toughbook CF-19 with Geographic Information System (GIS) software. SHN staff downloaded the appropriate aerial photos and digitized relevant site plan mapping (Google Earth, 2016). Several fixed locations (for example fence angles) were marked as control points (CT) with the Trimble Pro 6t to get an estimate of aerial imagery accuracy.

7.1 Vegetation Methods

Prior to the field investigation, a review of plant species reported to be within the study area was performed by querying the "Consortium of California Herbaria" (Consortium of California Herbaria, 2017) database records and "Calflora" (Calflora, 2017 and 2020) observations. It was determined that the 2017 site investigations were performed during a normal rainfall period by reviewing rainfall data, and the 2020 site investigation in a drier than normal rainfall period (see Section 3.2 Site Hydrology, Table 1). Absolute percent cover of each plant species was visually estimated within the sample point and within each vegetation stratum. The tree stratum was inspected at a 30-foot radius centered on the sample point, and

STA

the herbaceous and sapling/shrub strata at a 5-foot radius. Botanical nomenclature follows *The Jepson Manual, Vascular Plants of California* (Baldwin et al., 2012) in addition to the online Jepson Interchange (University of California, Berkeley, 2017) for verification of species whose taxonomy may have changed since its publication.

The wetland indicator status of plant species for this investigation was based on the *Western Mountains, Valleys, and Coast 2016 Regional Wetland Plant List* (USACE, 2016). Synonyms were checked for species that did not appear on the USACE wetland plant list. Plant species were classified as:

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

The 50/20 method¹ was applied to each stratum to determine the dominant plant species and to satisfy the hydrophytic vegetation criteria. If either hydric soils or wetland hydrology were present, the prevalence index² was applied. The occurrence and type of plant cover determine whether jurisdictional areas are identified as satisfying the vegetation criteria of a wetland or other waters. Those sites with little or no hydrophytic plant cover, or other sites not capable of supporting hydrophytic plant communities in normal circumstances, are identified as Waters of the State if hydric soils and wetland hydrology are present or are identified as other waters, provided they have an Ordinary High Water Mark (OHWM).

7.2 Soils Methods

Soils were field-verified for the presence or absence of hydric conditions. All TPs were dug to a minimum depth of 16 inches during the 2017 normal rainfall period, and a minimum depth of 24 inches during the 2020 drier than normal rainfall period. The thickness of each soil horizon was measured. The Munsell Soil Color Chart (Kollmorgen Instruments Corporation, 1998) was referenced to determine the colors of the moist soil matrix and redoximorphic (redox) features (if present). Soils were closely inspected for hydric soil indicators, as defined by the NRCS "Field Indicators of Hydric Soils in the United States" (Version 8.1; USDA-NRCS, 2017c).

7.3 Hydrology Methods

Hydrology was examined during the December 18, 19, and 21, 2017 and May 11, 2020 test pit excavations for hydrology indicators (for example, additional indicators would include water marks, drift deposits, sediment deposits, alpha, alpha-dipyridyl reaction, drainage patterns, geomorphic placement, water-stained

STA

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

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

² The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot or other sampling unit, where each indicator status category is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5) and weighting is by abundance (absolute percent cover).

leaves, and similar features). Indicators of extended period saturation would include oxidized rhizospheres surrounding living roots or the presence of reduced iron or sulfur in the soil profile. A site location must contain at least one primary indicator or two secondary indicators to have the hydrology parameter.

7.4 Ordinary High Water Mark Methods

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

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

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

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

- Drift/wrack
- Erosion/scour
- Bank undercutting
- Root exposure
- Point bars
- Water staining

- Litter removal
- Silt deposits
- Shelving
- Headcut/knickpoint
- Macroinvertebrates

8.0 Discussion and Results

Fourteen test pits were excavated on December 18, 19, and 21, 2017, and three additional test pits were excavated on May 11, 2020 (Figure 2). The test pits were excavated during a normal rainfall season in 2017 and a drier than normal rainfall season in 2020 within the growing season of this region (Section 3.2 Site Hydrology). Normal circumstances were considered present, because the most recent site disturbances were made over ten years ago, as seen on Google Earth images which date back to April 1989 (Google Earth, 2016).

This site's hydrology has been substantially altered, and currently stormwater flows through drainage ditches and culverts installed around the perimeter of the former industrial lumber facilities. Following closure of the industrial lumber mill, storage racks were removed, and the fields were regraded to restore agricultural use. The average slope of the study area ranges from 1 to 10 percent. The photos of the study areas are shown in Appendix 1. The majority of the soils encountered in test pits was fill, derived from other

STA

sources, or graded from different areas of the property. See the Discussion section below for each TP that describes the physical features and considerations of the site, followed by a Data section that summarizes information from the completed Wetland Determination Data Forms located in Appendix 4.

Most of the man-made ditches are continually maintained, except in the ditch flowing through Study Area B. All three parameters were found within this feature as described in Section 8.17.

8.1 TP1U

Discussion

The TP1U was chosen for its position within the hydric soil "Arlynda" and has the lowest elevation in the vicinity. Because of the topographically low position, it was thought that this location might have wetland conditions present, however only one wetland parameter was observed (hydrophytic vegetation) at TP1U.TP1U and the surrounding area does not meet the three-parameter wetland definition and is not considered a wetland site. (Appendix 1, Photo 4).

Data

TP1U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 60-percent Italian ryegrass [FAC]. Dominance by a hydrophytic species meets the hydrophytic vegetation parameter.

There were no hydrology or hydric soil indicators observed.

8.2 TP2U

Discussion

TP2U was excavated 343 feet southwest of TP1U and is also within the hydric soil "Arlynda". Rusty nails and occasional rounded gravel were found within the test pit, indicating fill material. It appears that an older slough scarp has been filled in over time. There were no wetland parameters observed; therefore, it is not considered a wetland.

Data

TP2U vegetation contained only an herb stratum. The dominant species were 35-percent Italian ryegrass [FAC] and 25-percent orchard grass [FACU]. Vegetation dominance by a mix of upland and wetland indicator species did not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.3 TP3U

Discussion

TP3U is in the mid-section of the agricultural field. There were no wetland parameters observed; therefore, it is not considered a wetland site.

Data

TP3U vegetation contained only an herb stratum. The dominant species were 30-percent wild radish (*Raphanus sativus* [NL]) and 10-percent dove's foot geranium [NL]. Vegetation dominance by a mix of upland and wetland indicator species did not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.



8.4 TP4U

Discussion

TP4U is in the mid-section of the agricultural field. This section of the field has been recently tilled and seeded with burseem clover [NL]. There was 85-percent bare soil with only 15-percent vegetation present, which was still in the seedling stage. There were no wetland parameters observed; therefore, it is not considered a wetland site. (Appendix 1, Photo 5).

Data

TP4U vegetation contained only an herb stratum. The dominant species were 10-percent burseem clover [NL] and 3-percent unknown seedlings. The seedlings could not be identified and were considered "problematic" at the December 18, 2017 site visit. Even without the definitive identification of the seedlings, the dominance test indicator could not be met. This site does not qualify as having the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.5 TP5U

Discussion

TP5U is in the northern section of the agricultural field. This section of the field has been recently tilled and seeded with burseem clover [NL]. There was 90-percent bare soil with only 15-percent vegetation present, which was still in the seedling stage. No wetland parameters were met; therefore, it is not considered a wetland site.

Data

TP5U vegetation contained only an herb stratum. The dominant species were 8-percent Italian ryegrass [FAC] and 5-percent burseem clover [NL]. This site does not qualify as having the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.6 TP6U

Discussion

TP6U is located in the northern portion of agricultural field, 285 feet east of TP5U. It is within one of the maintained, man-made ditches and had just been cleared prior to the test pit excavation (Appendix 1, Photo 6). There were only two wetland parameters present (hydric soils and vegetation); therefore, it is not considered a wetland site.

Data

TP6U vegetation contained only an herb stratum. The dominant species was 60-percent Italian ryegrass [FAC]. Dominance by a hydrophytic species meets the hydrophytic vegetation parameter.

One artificial secondary hydrology indicator was observed: D2 (Geomorphic Position) resulting from excavation of the ditch. Two or more secondary indicators are necessary to qualify for the hydrology parameter; therefore, the hydrology parameter has not been met.

The F3 (Depleted Matrix) hydric soil indicator was met.



8.7 TP7U

Discussion

TP7U is in the northern portion of the agricultural field, 217 feet north of TP6U. It is within one of the maintained man-made ditches and had just been cleared prior to the test pit excavation (Appendix 1, Photo 7). There were only two wetland parameters present (hydric soils and vegetation); therefore, it is not considered a wetland site.

Data

TP7U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 65-percent Italian ryegrass [FAC]. Dominance by a hydrophytic species meets the hydrophytic vegetation parameter.

One artificial secondary hydrology indicator was observed: D2 (Geomorphic Position) resulting from excavation of the ditch. Two or more secondary indicators are necessary to qualify for the hydrology parameter; therefore, the hydrology parameter has not been met.

The F3 (Depleted Matrix) hydric soil indicator was met.

8.8 TP8U

Discussion

TP8U is located within the northeastern portion of the agricultural field. There were no wetland parameters observed; therefore, it is not considered a wetland site.

Data

TP8U vegetation contained only an herbaceous stratum. The dominant species were 35-percent orchard grass [FACU] and 15-percent Italian ryegrass [FAC]. Vegetation dominance by a mix of upland and wetland indicator species did not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.9 TP9U

Discussion

TP9U is located at the southern-most section of the study area, near the access road. This location was investigated as the area was dominated by hydrophytic vegetation. Neither hydric soils nor wetland hydrology were observed; therefore, it is not considered a wetland.

Data

TP9U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 55-percent Italian ryegrass [FAC]. Dominance by a hydrophytic species meets the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.10 TP10U

Discussion

TP10U is in the western portion of the agricultural fields. There were no wetland parameters observed; therefore, it is not considered a wetland.

Sin

Data

TP10U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 55-percent Italian ryegrass [FAC] and 20-percent dove's foot geranium [NL]. Vegetation dominance by a mix of upland and wetland indicator species did not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.11 TP11U

Discussion

TP11U is in the western portion of the agricultural fields, 700 feet north of TP10U. There was only one wetland parameter observed (hydrophytic vegetation); therefore, it is not considered a wetland site.

Data

TP11U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 55-percent Italian ryegrass [FAC]. Dominance by a hydrophytic species meets the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.12 TP12W

Discussion

TP12W is located within the man-made drainage swale that drains stormwater from the southern portion of the agricultural fields. It is the paired plot to TP15U. Three wetland parameters were present at this location (hydric soils, hydrology, and vegetation; Appendix 1, Photo 8); therefore, this location is considered a wetland.

Data

TP12W vegetation contained the tree, sapling/shrub, and herb strata. The dominant species for the tree stratum was 35-percent coastal willow (*Salix hookeriana* [FACW]) and 10-percent Monterey cypress (*Hesperocyparis macrocarpa* [NL]). The dominant sapling/shrub species was composed of 15-percent Himalayan blackberry [FAC]. The dominant herb species were composed of 25-percent red-tinged bulrush [OBL] and 10-percent water parsley (*Oenanthe sarmentosa* [OBL]). Dominance by hydrophytes meets the hydrophytic vegetation parameter.

Two secondary hydrology indicators were observed: D2 (Geomorphic Position) and D5 (FAC-Neutral Test). Two or more secondary indicators are necessary to qualify for the hydrology parameter; therefore, the hydrology parameter has been met.

The F6 (Redox Dark Surface) hydric soil indicator was met.

8.13 TP13U

Discussion

TP13U is located west of the industrial mill buildings between a drainageway and gravel road. There was only one wetland parameter observed (hydrophytic vegetation; Appendix 1, Photo 9); therefore, it is not considered a wetland site. It is the paired test pit for TP17W.



Data

TP13U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 25-percent Italian ryegrass [FAC], 25-percent orchard grass [FACU], and 25-percent velvet grass [FAC]. Dominance by hydrophytes meets the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.14 TP14U

Discussion

TP14U is located 146 feet west of TP13U, on the west side of the drainageway and within a livestock pasture. There were no wetland parameters observed; therefore, it is not considered a wetland site.

Data

TP14U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 40-percent Italian ryegrass [FAC], 20-percent orchard grass [FACU], and 20-percent dove's foot geranium [NL]. Vegetation dominance by a mix of upland and wetland indicator species did not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.15 TP15U

Discussion

TP15U was excavated on May 11, 2020, and it is in a constructed ditch that drains the elevated eastern portion of the agricultural fields. It is the paired test pit to TP12W. The collected water drains westward offsite to an underground culvert, which is routed underneath the mill warehouse buildings and eventually into Liscom Slough (Figure 2; Appendix 1, Photo 10). The ditch drains elevated upland pasture to the north, and no wetlands occur uphill from this location. There were no wetland parameters observed; therefore, it is not considered a wetland site.

Data

TP15U vegetation contained only an herbaceous stratum. The dominant species for the herb stratum was 30-percent soft chess (*Bromus hordeaceus* [FACU]), 20-percent velvet grass (FAC), 15-percent common vetch (*Vicia sativa* [UPL]), and 15-percent sweet vernal grass [FACU]. Vegetation dominance by a mix of upland and wetland indicator species did not meet the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.16 TP16U

Discussion

TP16U is located in a constructed roadside drainage ditch 38 feet west of TP15U. The ditch contains mixed layers of sand, woody debris, and asphalt chunks likely from the former mill yard north of the test pit. It flows into the same drainage system described in TP15U. There was one wetland parameter observed (hydrophytic vegetation); therefore, it is not considered a wetland site.

Data

TP16U vegetation contained a sapling/shrub and an herbaceous stratum. The dominant species for the sapling/shrub stratum was the Himalayan blackberry [FAC]. The dominant species for the herb stratum was

SIN

35-percent velvet grass (FAC), 15-percent six-weeks fescue (*Festuca myuros* [FACU]), 10-percent wild radish [NL], and 10-percent creeping bent grass (*Agrostis stolonifera* [FAC]). Dominance by hydrophytes meets the hydrophytic vegetation parameter.

No hydrology or hydric soil indicators were observed.

8.17 TP17W

Discussion

TP17W is located in a constructed drainage ditch that runs along the western property boundary through the section labeled "Study Area B" (Figure 2; Appendix 1, Photo 11). TP17W is 28 feet west of TP13U which represents upland conditions surrounding this drainage ditch. There were three wetland parameters observed (hydrophytic vegetation, hydric soil, and hydrology); therefore, it is considered a wetland site. OHWM conditions were investigated at this location, however OHWM indicators were not present and it was determined that this feature is more accurately described as a wetland.

Data

TP17W vegetation contained a tree, sapling/shrub, and an herbaceous stratum. The dominant species for the tree stratum was red alder [FAC], and for the sapling/shrub stratum, the Himalayan blackberry [FAC]. The dominant species for the herb stratum was 40-percent water parsley (OBL), 30-percent wild radish [NL], and 30-percent sweet vernal grass [FACU]. Dominance by hydrophytes meets the hydrophytic vegetation parameter.

Two secondary hydrology indicators were observed; D2 (Geomorphic Position) and C2 (Dry-Season Water Table). Two or more secondary indicators are necessary to qualify for the hydrology parameter; therefore, the hydrology parameter has been met.

The F6 (Redox Dark Surface) hydric soil indicator was met.

8.18 Ordinary High Water Mark

No OHWMs were observed in the study areas. Ditches onsite are maintained constructed ditches or show none of the indicators listed in Section 7.4 Ordinary High Water Mark Methods.

8.19 Waters of the State

No additional State jurisdictional waters were found in the study areas. The criteria for naturally-occurring wetlands that have less than five-percent vegetative during the growing season was not observed.

9.0 Conclusions

Wetland and OHWM site investigations occurred on December 18, 19, and 21, 2017 and May 11, 2020. The 2017 test pit excavations were performed during a normal rainfall season and the 2020 excavations during a drier than normal rainfall (Section 3.2 Site Hydrology). Following the USACE three-parameter guidelines, there are two wetland areas found within the study areas. Table 2 describes the type, location, and size of the wetland. Data sheets are included in Appendix 4.



Table 2. Wetland Delineation and OHWM¹ Results
Arcata Land Company, LLC
Arcata, CA

Waterbodies	Cowardian Type	Latitude/Longitude ²	Area (square feet)
Wetland #1	Palustrine SS1 ³	40.884087°/ -124.104205°	5,144
Wetland #2	Palustrine SS1	40.883854°/ -124.108543°	874
Total			6,018

- 1. OHWM: ordinary high water mark
- 2. In decimal degrees
- 3. Palustrine Scrub-Shrub Broad-Leaved Deciduous

10.0 Limitations

The results in this report represent conditions at the time of fieldwork. It is possible that some species were not observable at the time of the fieldwork and that conditions have changed since field work was completed. This report documents the investigation by using the best professional judgment of SHN's botanist and soil scientist. The conclusions should be verified by the USACE through receipt of a jurisdictional determination letter.

11.0 References Cited

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. (2012). *The Jepson Manual: Vascular Plants of California, second edition*. Berkeley, CA:University of California Press, Berkeley.
- Calflora. (NR). (2017). Calflora database. Accessed December 2017 at: http://calflora.org/.
- ---. (2020). Calflora database. Accessed May 2020 at: http://calflora.org/.
- California Data Exchange Center. (CDEC). (2017). Accessed December 2017 at: http://cdec.water.ca.gov/cgi-progs/queryMonthly?ERK.
- ---. (2020). Accessed May 2020 at: http://cdec.water.ca.gov/cgi-progs/queryMonthly?ERK.
- City of Arcata Parcel Finder. (October 12, 2017). GIS Data and Maps Portal: Community Development Department. Accessed January 2018 at: https://gis01.cityofarcata.org/web/COA Parcel finder/.
- Consortium of California Herbaria. (2017). Consortium of California Herbaria database. Accessed December 2017 at: http://ucjeps.berkeley.edu/consortium/.
- Environmental Laboratory. (1987). Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1. Vicksburg, MS:USACE Waterways Experiment Station.
- Google Earth. (2016). NAIP 5/28/2016 imagery 40.883470° latitude and -124.104913 longitude. NR: Google Earth.
- Kelley, Frank R. (1984). "Geology and Geomorphic Features Related to Landsliding, Arcata North 7.5-minute Quadrangle, Humboldt County, California." *CDMG Open File Report 84-38 SF.* NR:CDMG.
- Kollmorgen Instruments Corporation. (1998). *Munsell Soil Color Charts*. Baltimore, MD:Macbeth Division of Kollmorgen Instruments Corporation.



- State Water Resources Control Board. (SWRCB). (2019). State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State.
- University of California, Berkeley. (2017). "Jepson eFlora." Accessed December 2017 at: http://ucjeps.berkeley.edu/eflora/.
- U.S. Army Corps of Engineers. (2010). Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain, Valleys, and Coast Region, J.S. Wakeley, R.W. Lichvar, and C.V. Noble (eds) ERDC/EL TR-08-03. Vicksburg, MS: USACE Research and Development Center.
- ---. (2014). A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States, M. K. Mersel and R. W. Lichvar (eds) ERDC/CRREL TR-14-13. Vicksburg, MS: USACE Research and Development Center.
- ---. (2016). Western Mountains, Valleys, and Coast: 2016 Regional Wetland Plant List, Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin (eds), ERDC/CRREL. Vicksburg, MS: USACE Research and Development Center.
- U.S. Code of Federal Regulations. (NR). "33 CFR 328. Title 33, Navigation and Navigable Waters; Chapter II; Army Corp of Engineers, Dept. of Defense, Part 328, Regulatory Program of the U.S. Army Corps of Engineers." NR: USACE.
- ---. (1986). "33 CFR 328. 401, 403, 404. Title 33, Navigation and Navigable Waters; Chapter II; Army Corp of Engineers, Dept. of Defense, Part 328, Regulatory Program of the U.S. Army Corps of Engineers." NR: USACE.
- U.S. Department of Agriculture. (USDA). (2017a). WETS Database. Eureka- Woodley Island, CA. Accessed December 2017 at: http://agacis.rcc-acis.org/?fips=06023.
- ---. (2017b). Web Soil Survey. Accessed December 2017 at: <u>https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.</u>
- ---. (2017c). Field Indicators of Hydric Soils in the United States, Version 8.1. G.W. Hurt, L.M. Vasilas (eds.). NR: USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils.
- ---. (2020) WETS Database. Eureka- Woodley Island, CA. Accessed May 2020 at: http://agacis.rcc-acis.org/?fips=06023.
- U.S. Fish and Wildlife Service. (USFWS). (2017). National Wetlands Inventory. Accessed December 2017 at: http://www.fws.gov/wetlands/data/mapper.HTML/.
- U.S. Geological Survey. (2012). USGS US Topo 7.5-minute map for Arcata North, CA 2012: USGS National Geospatial Technical Operations Center (NGTOC).



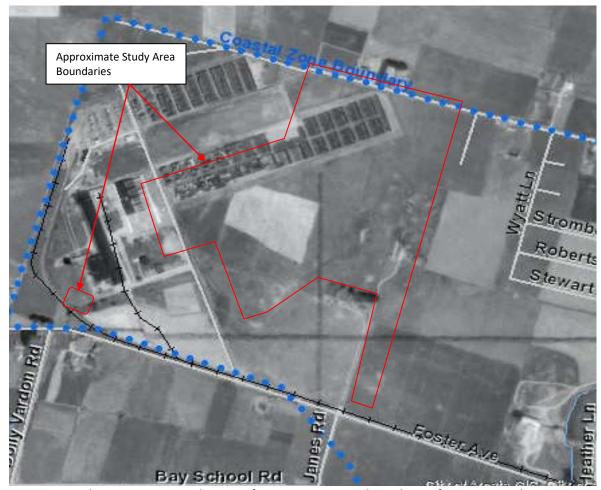


Photo 1: 1954 Aerial mosaic from Arcata GIS website (City of Arcata, 2017)



Photo 2: Main industrial concreted area





Photo 3: Agricultural fields looking west towards former industrial mill warehouses



Photo 4: TP1U looking north in typical agricultural field setting



Photo 5: TP4U recently tilled field looking north



Photo 7: Maintained ditch looking east towards TP7U



Photo 6: TP6U maintained ditch looking south



Photo 8: TP12W site location





Photo 9: TP13U looking west towards Wetland#2 drainageway and TP14U pasture beyond.



Photo 10: TP15U looking south.



Photo 11: TP17W

National Wetlands wetlands 2 Inventory

U.S. Fish and Wildlife Service National Wetlands Inventory

ALC NWI Map



December 4, 2017

Wetlands

Estuarine and Marine Deepwater

Estuarine and Marine Wetland

Freshwater Emergent Wetland

Freshwater Pond

Freshwater Forested/Shrub Wetland

Lake

Other

Riverine

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

Table 1 Plants Observed at Study Site December 18, 19, and 21, 2017 and May 11, 2020 Arcata Land Company, LLC Arcata, California

Scientific Name	Common Name	Indicator 2016 ¹
Achillea millefolium	yarrow	FACU
Acmispon parviflorus	hill lotus	NL
Agrostis stolonifera	creeping bent grass	FAC
Aira caryophyllea	silvery hairgrass	FACU
Alnus rubra	red alder	FAC
Anaphalis margaritacea	pearly everlasting	FACU
Anthoxanthum odoratum	sweet vernal grass	FACU
Athyrium filix-femina var. cyclosorum	western lady fern	FAC
Avena barbata	slim oat	NL
Baccharis pilularis ssp. consanguinea	coyote brush	NL
Bellis perennis	English lawn daisy	NL
Brassica rapa	common mustard	FACU
Briza maxima	rattlesnake grass	NL
Bromus carinatus var. carinatus	California brome	NL
Bromus diandrus	ripgut brome	NL
Bromus hordeaceus	soft chess	FACU
Callitriche sp.	water starwort	OBL
Carex obnupta	slough sedge	OBL
Cerastium arvense	meadow chickweed	FACU
Cirsium vulgare	bullthistle	FACU
Claytonia perfoliata	miner's lettuce	FAC
Claytonia sibirica	candy flower	FAC
Conium maculatum	poison hemlock	FAC
Convolvulus arvensis	field bindweed	NL
Cortaderia jubata	Andean pampas grass	FACU
Cotoneaster franchetii	Franchett's cotoneaster	NL
Cynosurus echinatus	dogtail grass	NL
Dactylis glomerata	orchard grass	FACU
Daucus carota	Queen Anne's lace	FACU
Dipsacus fullonum	wild teasel	FAC
Eucalyptus globulus	blue gum	NL
Festuca microstachys	small fescue	NL
Festuca myuros	six-weeks fescue	FACU
Festuca perennis	Italian rye grass	FAC
Galium aparine	cleaver plant	FACU
Geranium dissectum	cutleaf geranium	NL
Geranium molle	dove's foot geranium	NL
Hesperocyparis macrocarpa X	Monterey cypress cultivar	NL
Holcus lanatus	velvetgrass	FAC

1



Table 1 Plants Observed at Study Site December 18, 19, and 21, 2017 and May 11, 2020 Arcata Land Company, LLC Arcata, California

Scientific Name	Common Name	Indicator 2016 ¹
Hordeum marinum ssp. gussoneanum	barley	FAC
Hypochaeris radicata	hairy cat's ear	FACU
Juncus bufonius var. bufonius	common toad rush	FACW
Juncus effusus ssp. pacificus	Pacific rush	FACW
Juncus patens	spreading rush	FACW
Lonicera involucrata var. ledebourii	coast twinberry	FAC
Lotus corniculatus	bird's foot trefoil	FAC
Lupinus bicolor	annual lupine	NL
Melilotus albus	white sweetclover	NL
Mentha pulegium	pennyroyal	OBL
Oenanthe sarmentosa	water parsley	OBL
Parentucellia viscosa	yellow parentucellia	FAC
Phalaris arundinacea	reed canarygrass	FACW
Pinus radiata X	Monterey pine cultivar	NL
Plantago lanceolata	English plantain	FACU
Plantago major	common plantain	FAC
Poa annua	annual blue grass	FAC
Poa pratensis	Kentucky blue grass	FAC
Polypogon monspeliensis	annual beard grass	FACW
Prunella vulgaris	self heal	FACU
Pteridium aquilinum var. pubescens	bracken fern	NL
Ranunculus repens	creeping buttercup	FAC
Raphanus sativus	wild radish	NL
Rubus armeniacus	Himalayan blackberry	FAC
Rubus parviflorus	thimbleberry	FACU
Rubus spectabilis	salmonberry	FAC
Rubus ursinus	California blackberry	FACU
Rumex acetosella	sheep sorrel	FACU
Rumex crispus	curly dock	FAC
Salix hookeriana	coastal willow	FACW
Salix lasiandra var. lasiandra	Pacific willow	FACW
Salix sitchensis	Sitka willow	FACW
Sambucus racemosa var. racemosa	red elderberry	FACU
Scirpus microcarpus	red-Tinged Bulrush	OBL
Soliva sessilis	lawn Burweed	FAC
Sonchus asper	spiny sowthistle	FACU
Sonchus oleraceus	sow thistle	UPL
Stachys ajugoides var. rigida	hedge nettle	OBL
Stachys rigida	rough hedgenettle	FACW
Taraxacum officinale	red-seeded dandelion	FACU
Trifolium X	berseem Clover	NL

1



Table 1 Plants Observed at Study Site December 18, 19, and 21, 2017 and May 11, 2020 Arcata Land Company, LLC Arcata, California

Scientific Name	Common Name	Indicator 2016 ¹
Trifolium repens	white clover	FAC
Triphysaria pusilla	little owl's clover	NL
Typha latifolia	broadleaf cattail	OBL
Vicia sativa	common vetch	UPL
Vinca major	vinca	NL
Viola sempervirens	redwood violet	NL

1. Indicators are abbreviated as follows:

OBL: Obligate

FACW: Facultative wet FAC: Facultative FACU: Facultative upland

UPL: Upland NL: Not listed



C271
CILL
Consulting Engineers
& Coologiete Inc

OBL species x 1 = FACW species x 2 = FAC species x 3 =	Slope (%): 0 - Datum: Hvmb On L es X No nt features, etc.
Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 10 T06N R01E Landform (hillslope, terrace, etc.): Waving terrace Local relief (concave, convex, none): 100 Meteorace Notice (Ind. 099 S360 Meteorace) Local relief (concave, convex, none): 100 Meteorace Notice (Ind. 099 S360 Meteorace) Notice (Ind. 099 S360 Meteorace) Notice (Ind. 090 Meteorace) Noti	Slope (%): 0 - Datum: Hvmb On - es X No (s.) nt features, etc.
Landform (hillislope, terrace, etc.): Maying terrace Local relief (concave, convex, none): Subregion (LRR): A, MLRA 4B Lat: 40,085254° Long: -121.099536° NWI classification: May Unit Name: Are Soil Map Unit Name: 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? Yeare Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, importation of the Hydrology Present? Yes No Is the Sampled Area within a Wetland? Yes No Wetland Hydrology Present? Yes No Wetland Hydrology Present? Yes No Wetland Hydrology Present? Yes No Wetland Area within a Wetland? Yes No No Wetland Present Species? Status Status Species? Status Status Species Across All Strata: Total % Cover of: May All Are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: May All Are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: May All Are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: May All Are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: May All Are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: May All Are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: May All Area of the Area	Datum: Hvmb. On-e es X No (s.) nt features, etc.
Subregion (LRR): A. MLRA 4B Lat: 40,885254° Long: -124.099536° Soil Map Unit Name: Arlynda 0-990 Slope5 NWI classification: Mark elimatic / 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? Yeare Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, importated by the soil Present? Yes No Is the Sampled Area within a Wetland? Yes Sampled Area within a Wetland? Yes Sampled Ar	Datum: Hvmb. On-e es X No (s.) nt features, etc.
Soil Map Unit Name: Arlynda 0-996 Slopes 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 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remark SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, importal Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No Remarks: Chosen for lowest elevated area in Vicinity (Iscal low spot) VEGETATION — Use scientific names of plants. Tree Stratum (Plot size: 30 — Absolute Dominant Indicator % Cover Species? Status 1. Total Number of Dominant Species That Are OBL, FACW, or FAC: Prevalence Index worksheet: Total Number of Dominant Species That Are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: A OBL species x 1 = FAC species x 2 =	es X No
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 revegetation in Remarks.) 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, importation Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No Wetland Hydrology Present? Yes No No No Wetland Hydrology Present? Yes No	es No No nt features, etc.
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 Are Vegetation No or Hydrology naturally problematic? (If needed, explain any answers in Remarks SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, importation Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No Wetland Hydrology Present? Yes No	es No No nt features, etc.
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes, or Hydrology naturally problematic? (If needed, explain any answers in Remarks SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, importate	nt features, etc
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remark SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, importation of the problematic in the sampled Area within a Wetland? Yes No Is the Sampled Area within a Wetland? Yes No Wetland Hydrology Present? Yes No Wetland Problematic in a Wetland? Yes No Wetland Hydrology Present? Yes No Wetland? Yes No Yes No Wetland Hydrology Present? Yes No No Wetland Hydrology Present? Yes No No Wetland Hydrology Present? Yes No No Yes No Yes No Yes No Yes No Yes Yes No Yes Yes Yes Yes Yes Yes	nt features, etc
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, importation of the property	nt features, etc
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Wetland Hydrology Present? Yes No Wetland? Remarks: Chosen for lowest elevated area in Vicinity (local low spect) TPIN is uplated and pointed plates area in Vicinity (local low spect) VEGETATION – Use scientific names of plants. Tree Stratum (Plot size: 30 4	
Hydric Soil Present? Wetland Hydrology Present? Wetland Hydrology Present? Remarks: Chosen for lowest chesa tech area in vicinity (local low spect) TPIN is uplad and no wedlest pointed pointed pointed by the status. VEGETATION – Use scientific names of plants. Tree Stratum (Plot size: 30 — Absolute % Cover Species? Status Number of Dominant Species That Are OBL, FACW, or FAC:	_
Wetland Hydrology Present? Yes	<u>~</u>
VEGETATION – Use scientific names of plants. Tree Stratum (Plot size: 30 Absolute % Cover Species? Status Number of Dominant Species That Are OBL, FACW, or FAC:	
VEGETATION – Use scientific names of plants. Tree Stratum (Plot size: 30 Absolute % Cover Species? Status Number of Dominant Species That Are OBL, FACW, or FAC:	
Absolute	
Tree Stratum (Plot size:	
That Are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species That Are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: OBL species x 1 = FACW species x 2 = FAC species	1
Total Number of Dominant Species Across All Strata: Percent of Dominant Species That Are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: OBL species	1
3	(A)
A	1
Sapling/Shrub Stratum (Plot size: = Total Cover	(B)
1	(A/B)
OBL species x 1 = FACW species x 2 = FAC species x 3 =	
4. FACW species x 2 =	fultiply by:
FAC species	
FAC species x 3 =	
0	
= Total Cover FACU species x 4 =	
Herb Stratum (Plot size: x 5 =	
1. testuca perennis 60 y FAC Column Totals: (A) 2. Doctylis alomorete	(B)
Prevalence Index = B/A =	
T-11 / 1 NOON () SO 10	
Solution Tydrophytic	/egetation
2 Dominance rest is 200%	
3 - Prevalence index is \$3.0	
8 4 - Morphological Adaptations¹ data in Remarks or on a sep	
9 5 - Wetland Non-Vascular Plant	(Provide supporting arate sheet)
10 Problematic Hydrophytic Veget	arate sheet)
111Indicators of hydric soil and wetland	arate sheet)
be present, unless disturbed or prot	arate sheet) s¹ ation¹ (Explain)
Woody Vine Stratum (Plot size:	arate sheet) s ¹ ation ¹ (Explain) d hydrology must
1 Hydrophytic	arate sheet) s ¹ ation ¹ (Explain) d hydrology must
2	arate sheet) s ¹ ation ¹ (Explain) d hydrology must
% Bare Ground in Herb Stratum 5 Present? Yes	arate sheet) s¹ ation¹ (Explain) d hydrology must elematic.
Permarke:	arate sheet) s ¹ ation ¹ (Explain) d hydrology must
Remarks: * not identified @ time of year.	arate sheet) s¹ ation¹ (Explain) d hydrology must blematic.
	arate sheet) s¹ ation¹ (Explain) d hydrology must elematic.

TPIU Consulting Engineer
Sampling Point: & Geologists, Inc.

Profile Description: (Describe to the dept	n needed to document the indicator or c	onfirm the absence of indicators.)
Depth Matrix	Redox Features	201
(inches) Color (moist) %	Color (moist) % Type L	oc² Texture Remarks
0-2 104R3/2 95	7,5 41C 3/4 5 KM P	- SiCL Koots similar color os redox
2-17 10 YR3/2 70	7.5 YR3/4 < 1 RM P	L SiCL
2-17 16 YR 4/2 30		SICL
8 17 10/K 10 20		
	32.00	
¹ Type: C=Concentration, D=Depletion, RM=	Reduced Matrix CS=Covered or Coated S	and Grains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all L		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Redox (S5)	2 cm Muck (A10)
Histic Epipedon (A2)	Stripped Matrix (S6)	Red Parent Material (TF2)
Black Histic (A3)	Loamy Mucky Mineral (F1) (except ML	.RA 1) Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)	
Thick Dark Surface (A12)	Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
Restrictive Layer (if present):		
Type:		Hydric Soil Present? Yes No
Depth (inches):	_	nyulic son Flesent? Tes No
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required	check all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1)	Water-Stained Leaves (B9) (exce	pt Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)	MLRA 1, 2, 4A, and 4B)	4A, and 4B)
Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Livi	ng Roots (C3) Geomorphic Position (D2)
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5)	Recent Iron Reduction in Tilled So	pils (C6) FAC-Neutral Test (D5) %
Surface Soil Cracks (B6)	LRR A) Raised Ant Mounds (D6) (LRR A)	
Inundation Visible on Aerial Imagery (B7	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B	8)	
Field Observations:		
Surface Water Present? Yes N	loDepth (inches):	
Water Table Present? Yes N	loDepth (inches):	
Saturation Present? Yes N		Wetland Hydrology Present? Yes No
(includes capillary fringe)	######################################	
Describe Recorded Data (stream gauge, mor	nitoring well, aeriał photos, previous inspec	tions), if available:
Remarks:		
Normal No.		

	(0	7	77
1	<u>)</u>	J	ZA	_/
C		lting	Engi	neers

Project/Site: Foster Avenue		City/Co	unty: Humbold	t	Sampling Date:	12/18/1
Applicant/Owner: Arcata Land CO.		1	-	State: CA		
Investigator(s): Cindy Wilcox & Greg OConnell		Section				
Landform (hillslope, terrace, etc.): Marine terra						ne (%): 2-4
Subregion (LRR): A, MLRA 4B						
	loves			NWI classific		
Are climatic / hydrologic conditions on the site typical for this tir	· V PV ~					
Are Vegetation, Soil, or Hydrology sign				"Normal Circumstances" p		X No
Are Vegetation, Soil, or Hydrology natu				eeded, explain any answe	of the latest and the	
SUMMARY OF FINDINGS – Attach site map sh			·			eatures, etc.
Hydrophytic Vegetation Present? Yes No _	V				.8	1 - 12
Hydric Soil Present? Yes No _	<u>\</u>	- 1	Is the Sampled		No_	
Wetland Hydrology Present? Yes No _			within a Wetla			-
Remarks: TP2N is uplend & does					t pit.	
- Rounded gravel & rusty	1104	n	oil> his	Haric fill.		
VEGETATION – Use scientific names of plants.	•2					
36 Ft A	bsolute		nant Indicator	Dominance Test work	sheet:	
Tree Stratum (Plot size: 36+7)	6 Cover	Spec	ies? Status	Number of Dominant S		- (A)
2				That Are OBL, FACW,	or FAC:	(A)
3.				Total Number of Domin Species Across All Stra		(B)
4	-					0.4
Sapling/Shrub Stratum (Plot size: 5 1)	Ø	= Tota	al Cover	Percent of Dominant Sp That Are OBL, FACW,	pecies or FAC:) 1/6 (A/B)
1		-		Prevalence Index wor		
2,				Total % Cover of:		y by:
3				OBL species		
4				FACW species FAC species		
5,				FACU species		
Herb Stratum (Plot size:	10_	= Tota	I Cover	UPL species		
1. Doctylis alomerata	25	Y	FACU	Column Totals:		
2. Festura Operennis	35	Ż	FAC	Prevalence Index	- B/A -	
3. Holous lonelus	15.	N	FAC.	Hydrophytic Vegetation		-
4. Trifalism sp. (not repens) *	10	N		1 - Rapid Test for H		ation
5. Rymex crispus	2	_N	- FAC	2 - Dominance Tes	st is >50%	
6. Gerenium Mollis	2	_ ~	NC NC	3 - Prevalence Inde	ex is ≤3.0 ¹	
7. Docus Carota			FACH	4 - Morphological A		
8				5 - Wetland Non-Va	s or on a separate	sneet)
9				Problematic Hydro		(Explain)
10	 \$			¹ Indicators of hydric soi		
	91	= Tota	Cover	be present, unless distu	urbed or problema	tic.
Woody Vine Stratum (Plot size: SH)		. 0.0	0.0.			
1				Hydrophytic	1	
2	- N			Vegetation Present? Yes	s No_	
% Bare Ground in Herb Stratum / 5 -	<u> </u>	= Tota	Cover			
Remarks:						
* No ID @ time of y	28					



STAN	
Consulting Engineers & Geologists, Inc.	

			h needed to docum	22.5				
Depth	Matrix	0/		x Feature		12	Toutier	Domarko
	olor (moist)	<u>%</u>	Color (moist)	%	Type'	Loc ²	Texture	Remarks
0-21 10	YK 3/2	100	7.5 YK 1/4	4	VI.	11	DIL	<u> </u>
		1	10 YK 5/6	41	RM	M		_
		8				•		
				((- 1	
								t fra fit
								<u></u>
								-:-
								- 1 A
		() ()						-
			Reduced Matrix, CS			d Sand G		ocation: PL=Pore Lining, M=Matrix.
Hydric Soil Indica	itors: (Applica	able to all l	LRRs, unless other	wise not	ted.)			ators for Problematic Hydric Soils ³ :
Histosol (A1)			Sandy Redox (S					cm Muck (A10)
Histic Epipedo			Stripped Matrix					ed Parent Material (TF2)
Black Histic (A			Loamy Mucky N			MLRA 1		ery Shallow Dark Surface (TF12)
Hydrogen Sulf			Loamy Gleyed I		2)		_ 0	ther (Explain in Remarks)
	w Dark Surface	e (A11)	Depleted Matrix				3	
Thick Dark Sui	, ,		Redox Dark Sui					ators of hydrophytic vegetation and
Sandy Mucky	, ,	•	Depleted Dark S					tland hydrology must be present,
Sandy Gleyed			Redox Depress	ions (F8)			un	less disturbed or problematic.
Restrictive Layer	(if present):							
Туре:								
Depth (inches):							1 -	oil Present? Yes No
							V	rix color > fill, car filled in v1990's
HYDROLOGY			11151				, , , , , , , , , , , , , , , , , , ,	*
	uv Indicators:		19051				V	
Wetland Hydrolog								
Wetland Hydrolog Primary Indicators	(minimum of o		; check all that appl	y)				condary Indicators (2 or more required)
Wetland Hydrolog Primary Indicators Surface Water	(minimum of o		; check all that appl	y) ined Leav	ves (B9) (e			condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hydrolog Primary Indicators Surface Water High Water Ta	(minimum of o r (A1) able (A2)		; check all that appl Water-Stai MLRA	v) ined Leav 1, 2, 4A,	ves (B9) (e			condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3	(minimum of o r (A1) able (A2)		; check all that appl	y) ined Leav 1, 2, 4A, (B11)	/es (B9) (e and 4B)			condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks ((minimum of o r (A1) able (A2) B1)		; check all that appl Water-Stai MLRA Salt Crust Aquatic Inv	y) ined Leav 1, 2, 4A, (B11) vertebrate	ves (B9) (eand 4B)			condary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (i Sediment Dep	(minimum of o r (A1) able (A2) b) B1) posits (B2)		; check all that appl	y) ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O	ves (B9) (e and 4B) es (B13) edor (C1)	xcept	<u>Se</u>	condary 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)
Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits	(minimum of o r (A1) able (A2) B) B1) posits (B2) (B3)		check all that appli Water-Stai MLRA Salt Crust Aquatic Ind Hydrogen Oxidized F	y) ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O	ves (B9) (e and 4B) es (B13) edor (C1) eres along	xcept Living Ro	<u>Se</u>	condary 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)
Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C	(minimum of o r (A1) able (A2) B) (B1) posits (B2) (B3) crust (B4)		check all that applications with the control of the	y) ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduce	ves (B9) (e and 4B) es (B13) edor (C1) eres along ed Iron (C4	xcept Living Ro	Service Servic	condary 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)
Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits ((minimum of o (A1) able (A2) B) (B1) losits (B2) (B3) crust (B4) (B5)		check all that apple Water-Stai MLRA Salt Crust Aquatic Int Hydrogen Oxidized F Presence	y) ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduce n Reduct	ves (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille	xcept Living Ro	Sec. ————————————————————————————————————	condary 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)
Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits (Algal Mat or C Iron Deposits (Surface Soil C	(minimum of o r (A1) able (A2) B) (B1) posits (B2) (B3) trust (B4) (B5) cracks (B6)	ne required	: check all that appliance of the control of the co	ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduct n Reduct	ves (B9) (e and 4B) es (B13) edor (C1) eres along ed Iron (C4 ion in Tille d Plants (D	xcept Living Ro	Sec. ————————————————————————————————————	Condary 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)
Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Soil C Inundation Vis	(minimum of one (A1) able (A2) B) (B1) cosits (B2) (B3) crust (B4) (B5) cracks (B6) cible on Aerial In	ne required magery (B7	: check all that appliance of the control of the co	ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduct n Reduct	ves (B9) (e and 4B) es (B13) edor (C1) eres along ed Iron (C4 ion in Tille d Plants (D	xcept Living Ro	Sec. ————————————————————————————————————	condary 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)
Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Soil C Inundation Vis Sparsely Vege	(minimum of one (minimum of on	ne required magery (B7	: check all that appliance of the control of the co	ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduct n Reduct	ves (B9) (e and 4B) es (B13) edor (C1) eres along ed Iron (C4 ion in Tille d Plants (D	xcept Living Ro	Sec. ————————————————————————————————————	Condary 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)
Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Soil C Inundation Vis	(minimum of one (minimum of on	ne required magery (B7	water-Stai MLRA Salt Crust Aquatic Ind Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp.	y) ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduct n Reduct Stressec	ves (B9) (e and 4B) es (B13) edor (C1) eres along ed Iron (C4) ion in Tille d Plants (D emarks)	Living Ro i) d Soils (C	Sec. ————————————————————————————————————	Condary 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)
Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Soil C Inundation Vis Sparsely Vege	(minimum of one (A1) able (A2) B1) B1) cosits (B2) (B3) crust (B4) (B5) cracks (B6) cible on Aerial Intertated Concave	ne required magery (B7 e Surface (B	Check all that applications with the control of the	y) ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduct n Reduct Stressec plain in Re	ves (B9) (e and 4B) es (B13) edor (C1) eres along ed Iron (C4) ion in Tille d Plants (Demarks)	xcept Living Ro i) d Soils (C 1) (LRR /	Sec. ————————————————————————————————————	Condary 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)
Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Soil C Inundation Vis Sparsely Vege	(minimum of one (A1) able (A2) B) (B1) cosits (B2) (B3) crust (B4) (B5) cracks (B6) cible on Aerial lighted Concave	magery (B7 e Surface (B	Check all that applications with the control of the	y) ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduct n Reduct Stressec plain in Re	ves (B9) (e and 4B) es (B13) edor (C1) eres along ed Iron (C4) ion in Tille d Plants (D emarks)	xcept Living Ro i) d Soils (C 1) (LRR /	Sec. ————————————————————————————————————	Condary 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)
Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Soil C Inundation Vis Sparsely Vege Field Observation Surface Water Prese Saturation Present	(minimum of or (A1) able (A2) B) (B1) absits (B2) (B3) arust (B4) (B5) aracks (B6) abible on Aerial Inetated Concave as: asent? You	magery (B7 e Surface (E es N	Check all that apple Water-Stain MLRA Salt Crust Aquatic Int Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp. No Depth (integrated)	y) ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduct Reduct Stressec Stain in Reduct ches): ches):	ves (B9) (e and 4B) es (B13) edor (C1) eres along ed Iron (C4) ion in Tille d Plants (Demarks)	xcept Living Ro i) d Soils (C 1) (LRR i	Series (C3)	Condary 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)
Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Soil C Inundation Vis Sparsely Vege Field Observation Surface Water Prese Water Table Present (includes capillary	(minimum of or (A1) able (A2) B1) (B1) cosits (B2) (B3) crust (B4) (B5) cracks (B6) cible on Aerial lietated Concave as: esent? (Cart? (Cart? (Cart? (Cart? (Cart))	magery (B7 e Surface (E es N es N	water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp No Depth (inc	y) ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduct n Reduct Stressec plain in Re ches): ches): ches):	ves (B9) (e and 4B) es (B13) ed (C1) eres along ed Iron (C4) ion in Tille d Plants (Demarks)	Living Ro	sots (C3)	Condary 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)
Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Soil C Inundation Vis Sparsely Vege Field Observation Surface Water Prese Water Table Present (includes capillary	(minimum of or (A1) able (A2) B1) (B1) cosits (B2) (B3) crust (B4) (B5) cracks (B6) cible on Aerial lietated Concave as: esent? (Cart? (Cart? (Cart? (Cart? (Cart))	magery (B7 e Surface (E es N es N	Check all that apple Water-Stain MLRA Salt Crust Aquatic Int Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp. No Depth (integrated)	y) ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduct n Reduct Stressec plain in Re ches): ches): ches):	ves (B9) (e and 4B) es (B13) ed (C1) eres along ed Iron (C4) ion in Tille d Plants (Demarks)	Living Ro	sots (C3)	Condary 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)
Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Soil C Inundation Vis Sparsely Vege Field Observation Surface Water Prese Water Table Present (includes capillary) Describe Recorded	(minimum of or (A1) able (A2) B1) (B1) cosits (B2) (B3) crust (B4) (B5) cracks (B6) cible on Aerial lietated Concave as: esent? (Cart? (Cart? (Cart? (Cart? (Cart))	magery (B7 e Surface (E es N es N	water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp No Depth (inc	y) ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduct n Reduct Stressec plain in Re ches): ches): ches):	ves (B9) (e and 4B) es (B13) ed (C1) eres along ed Iron (C4) ion in Tille d Plants (Demarks)	Living Ro	sots (C3)	Condary 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)
Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Soil C Inundation Vis Sparsely Vege Field Observation Surface Water Prese Water Table Present (includes capillary	(minimum of or (A1) able (A2) B1) (B1) cosits (B2) (B3) crust (B4) (B5) cracks (B6) cible on Aerial lietated Concave as: esent? (Cart? (Cart? (Cart? (Cart? (Cart))	magery (B7 e Surface (E es N es N	water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp No Depth (inc	y) ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduct n Reduct Stressec plain in Re ches): ches): ches):	ves (B9) (e and 4B) es (B13) ed (C1) eres along ed Iron (C4) ion in Tille d Plants (Demarks)	Living Ro	sots (C3)	Condary 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)
Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Soil C Inundation Vis Sparsely Vege Field Observation Surface Water Present Water Table Present (includes capillary) Describe Recorded	(minimum of or (A1) able (A2) B1) (B1) cosits (B2) (B3) crust (B4) (B5) cracks (B6) cible on Aerial lietated Concave as: esent? (Cart? (Cart? (Cart? (Cart? (Cart))	magery (B7 e Surface (E es N es N	water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp No Depth (inc	y) ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduct n Reduct Stressec plain in Re ches): ches): ches):	ves (B9) (e and 4B) es (B13) ed (C1) eres along ed Iron (C4) ion in Tille d Plants (Demarks)	Living Ro	sots (C3)	Condary 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)
Wetland Hydrolog Primary Indicators Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Soil C Inundation Vis Sparsely Vege Field Observation Surface Water Present (includes capillary) Describe Recorded	(minimum of or (A1) able (A2) B1) (B1) cosits (B2) (B3) crust (B4) (B5) cracks (B6) cible on Aerial lietated Concave as: esent? (Cart? (Cart? (Cart? (Cart? (Cart))	magery (B7 e Surface (E es N es N	water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp No Depth (inc	y) ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduct n Reduct Stressec plain in Re ches): ches): ches):	ves (B9) (e and 4B) es (B13) ed (C1) eres along ed Iron (C4) ion in Tille d Plants (Demarks)	Living Ro	sots (C3)	Condary 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)

Project/Site: Foster Avenue		City/County: Humbold	it	Sampling Date:	19/18/
Applicant/Owner: Arcata Land CO			State: CA	_ Sampling Point:	TP31
nvestigator(s): Cindy Wilcox & Greg OConnell		Section, Township, R	ange: Sec. 19 T06N R01	E	
andform (hillslope, terrace, etc.):	ace	Local relief (concave	convex, none):	resio	pe (%): 1 -
ubregion (LRR): A, MLRA 4B	Lat:	10,8851900	_ Long: -124,10	1958° Datu	m: Hum
oil Map Unit Name: Jolly gian + 0-2	-010		NWI classi	fication:non	e
re climatic / hydrologic conditions on the site typical for th	is time of ye	ear? Yes X No	(If no, explain in	Remarks.)	
re Vegetation, Soil, or Hydrology	significantly	disturbed? Are	"Normal Circumstances"	present? Yes _>	<u> </u>
re Vegetation, Soil, or Hydrology	naturally pro	oblematic? (If n	eeded, explain any answ	ers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing	sampling point	locations, transect	s. important fe	atures, et
	No Vo			,	
Hydric Soil Present? Yes N		is the Sample			
Wetland Hydrology Present? Yes N	No_V	within a Wetla	nd? Yes	No/_	-
Remarks: Reconfly filled field.					
EGETATION – Use scientific names of plar	nte.				
	Absolute	Dominant Indicator	Dominance Test was	drah a atı	
Tree Stratum (Plot size: 30+1)		Species? Status	Number of Dominant		,
t			That Are OBL, FACW	, or FAC:	(A)
- O			Total Number of Dom		
			Species Across All Str	rata:	(B)
- N	8	= Total Cover	Percent of Dominant S		
Sapling/Shrub Stratum (Plot size:	-	_ = Total Cover	That Are OBL, FACW Prevalence Index wo		(A/B
1				Multiply	, byč
2			OBL species		
			FACW species		
5		·	FAC species		
SN.	10	= Total Cover	FACU species		
Herb Stratum (Plot size:) wild	10	Y NC	UPL species		
Raphanus Sativus radish	20	1) 10	Column Totals:	(A)	(B)
Geronium Mollis	10	V X		x = B/A =	
otler unknown herbs X		1	Hydrophytic Vegetat		4:
			1 - Rapid Test for 2 - Dominance Te		HUOIT
	-		3 - Prevalence Inc		
				Adaptations ¹ (Provi	
3			1	s or on a separate	sheet)
)			5 - Wetland Non-\ Problematic Hydro		(Cyalaia)
0 1			Indicators of hydric so		
(Y)	50	= Total Cover	be present, unless dist	urbed or problemat	ic.
Noody Vine Stratum (Plot size:					
·			Hydrophytic		1
	-		Vegetation Present? Ye	sNo_L	
2		Total Cover	1		

rofile Description: (Describe Depth Matrix		Pedo	x Feature	20			
nches) Matrix Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
-18 104R3/2	1 100	10 YR 5/L	11	RM	M		
10 10 10/12	10-	10/10/2		7717			SV
							·
	7						
			::				V
Type: C=Concentration, D=De	nletion RM=	Reduced Matrix, CS	S=Covere	ed or Coate	d Sand Gra	ains. ² Lo	ocation: PL=Pore Lining, M=Matrix.
ydric Soil Indicators: (Appli	cable to all	LRRs, unless other	rwise no	ted.)		Indicat	tors for Problematic Hydric Soils ³ :
Histosol (A1)		Sandy Redox (20	cm Muck (A10)
Histic Epipedon (A2)		Stripped Matrix	•			Re	ed Parent Material (TF2)
Black Histic (A3)		Loamy Mucky N		F1) (except	MLRA 1)		ry Shallow Dark Surface (TF12)
_ Hydrogen Sulfide (A4)		Loamy Gleyed			,		her (Explain in Remarks)
Depleted Below Dark Surfa	ce (A11)	Depleted Matrix		,		_	
Thick Dark Surface (A12)	55 ()	Redox Dark Su		3)		3Indica	tors of hydrophytic vegetation and
Sandy Mucky Mineral (S1)		Depleted Dark					land hydrology must be present,
_ Sandy Gleyed Matrix (S4)		Redox Depress					ess disturbed or problematic.
estrictive Layer (if present):							
Type:							
Depth (inches):		===,7 :				Hydric So	il Present? Yes No <u>//</u>
- vp (
emarks:						-	V
emarks: /DROLOGY						-	
	3 :					=	
/DROLOGY		d; check all that app	ly)				ondary Indicators (2 or more required)
/DROLOGY Vetland Hydrology Indicators rimary Indicators (minimum of				aves (B9) (e	oxcept	Sec	
/DROLOGY Vetland Hydrology Indicators rimary Indicators (minimum of Surface Water (A1)		Water-Sta	ined Lea		except	Sec	Water-Stained Leaves (B9) (MLRA 1, 2
POROLOGY Vetland Hydrology Indicators rimary Indicators (minimum of Surface Water (A1) High Water Table (A2)		Water-Sta	ined Lea	aves (B9) (6 , and 4B)	except	Sec.	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B)
YDROLOGY Vetland Hydrology Indicators Trimary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3)		Water-Sta MLRA Salt Crust	nined Lea 1, 2, 4A, (B11)	, and 4B)	except	Sec.	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10)
YDROLOGY Vetland Hydrology Indicators Trimary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)		Water-Sta MLRA Salt Crust Aquatic In	nined Lea 1, 2, 4A (B11) (vertebra	, and 4B) tes (B13)	except	Sec.	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
YDROLOGY Vetland Hydrology Indicators rimary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)		Water-Sta MLRA Salt Crust Aquatic In Hydrogen	nined Lea 1, 2, 4A (B11) evertebrate Sulfide (, and 4B) tes (B13) Odor (C1)		Sec	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C
VDROLOGY Vetland Hydrology Indicators Virimary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)		Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I	nined Lea 1, 2, 4A (B11) evertebra Sulfide (Rhizosph	tes (B13) Odor (C1) neres along	Living Roo	Sec	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2)
VDROLOGY Vetland Hydrology Indicators Vimary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)		Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I	nined Lea 1, 2, 4A, (B11) evertebra Sulfide (Rhizosph of Reduce	tes (B13) Odor (C1) neres along ced Iron (C	Living Roo 4)	Secondary Second	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3)
VDROLOGY Vetland Hydrology Indicators Virimary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)		Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Iro	nined Lea 1, 2, 4A, (B11) evertebra Sulfide (Rhizosph of Reduction Reduction	tes (B13) Odor (C1) neres along ced Iron (C	Living Roo 4) ed Soils (C6	Sec	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) n 0
VDROLOGY Vetland Hydrology Indicators Vimary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)		Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I	nined Lea 1, 2, 4A, (B11) evertebra Sulfide (Rhizosph of Reduction Reduction	tes (B13) Odor (C1) neres along ced Iron (C	Living Roo 4) ed Soils (C6	Sec	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) n C Raised Ant Mounds (D6) (LRR A)
VDROLOGY Vetland Hydrology Indicators rimary Indicators (minimum of 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)	one required	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Iro Stunted o	nined Lea 1, 2, 4A, (B11) evertebra Sulfide (Rhizosph of Reductor r Stresse	tes (B13) Odor (C1) neres along ced Iron (C ction in Tille	Living Roo 4) ed Soils (C6	Sec	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) n 0
Vetland Hydrology Indicators rimary Indicators (minimum of 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)	one required	Water-Sta	nined Lea 1, 2, 4A, (B11) evertebra Sulfide (Rhizosph of Reductor r Stresse	tes (B13) Odor (C1) neres along ced Iron (C ction in Tille	Living Roo 4) ed Soils (C6	Sec	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) n © Raised Ant Mounds (D6) (LRR A)
Vetland Hydrology Indicators Irimary Indicators (minimum of 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 Aeria	one required	Water-Sta	nined Lea 1, 2, 4A, (B11) evertebra Sulfide (Rhizosph of Reductor r Stresse	tes (B13) Odor (C1) neres along ced Iron (C ction in Tille	Living Roo 4) ed Soils (C6	Sec	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) n P Raised Ant Mounds (D6) (LRR A)
Vetland Hydrology Indicators Inimary Indicators (minimum of 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 Aeria Sparsely Vegetated Conca	one required I Imagery (B	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Irc Stunted o 7) Other (Ex	ined Lea 1, 2, 4A, (B11) evertebrar Sulfide (Rhizosph of Reductor or Reductor r Stresse plain in F	tes (B13) Odor (C1) neres along ced Iron (C ction in Tille ed Plants (E Remarks)	Living Roo 4) ed Soils (C6	Sec	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) n P Raised Ant Mounds (D6) (LRR A)
Vetland Hydrology Indicators Irimary Indicators (minimum of 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 Aeria Sparsely Vegetated Conca	I Imagery (B ve Surface (Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent In Stunted o 7) Other (Ex B8)	ined Lea 1, 2, 4A, (B11) ivertebra: Sulfide (Rhizosphor of Reduction	tes (B13) Odor (C1) neres along ced Iron (C ction in Tille ed Plants (E Remarks)	Living Roo 4) ed Soils (C6	Sec	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) n P Raised Ant Mounds (D6) (LRR A)
Vetland Hydrology Indicators Irimary Indicators (minimum of 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 Aeria Sparsely Vegetated Conca	I Imagery (B ve Surface (Yes Yes	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Iro Stunted o 7) Other (Ex B8) No Depth (ir	ined Lea 1, 2, 4A, (B11) Ivertebra Sulfide (Rhizosph of Reduc on Reduc r Stresse plain in F	tes (B13) Odor (C1) neres along ced Iron (C ction in Tille ed Plants (E Remarks)	Living Roo 4) d Soils (C6 01) (LRR A)	Sec	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) n P Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Vetland Hydrology Indicators rimary Indicators (minimum of 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 Aeria Sparsely Vegetated Conca Field Observations: Surface Water Present? Vater Table Present? Saturation Present? Saturation Present?	I Imagery (B ve Surface (Yes Yes	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent In Stunted o 7) Other (Ex B8) No Depth (ir No Depth (ir	ined Lea 1, 2, 4A, (B11) ivertebra: Sulfide (Rhizosphor of Reduction	tes (B13) Odor (C1) neres along ced Iron (C ction in Tille ed Plants (E Remarks)	Living Roo 4) ed Soils (C6 01) (LRR A)	ots (C3) 	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) n P Raised Ant Mounds (D6) (LRR A)
Vetland Hydrology Indicators Inimary Indicators (minimum of 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 Aeria Sparsely Vegetated Conca	I Imagery (B ve Surface (Yes Yes	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent In Stunted o 7) Other (Ex B8) No Depth (ir No Depth (ir	ined Lea 1, 2, 4A, (B11) ivertebra: Sulfide (Rhizosphor of Reduction	tes (B13) Odor (C1) neres along ced Iron (C ction in Tille ed Plants (E Remarks)	Living Roo 4) ed Soils (C6 01) (LRR A)	ots (C3) 	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) n P Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Vetland Hydrology Indicators rimary Indicators (minimum of 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 Aeria Sparsely Vegetated Concaesical Con	I Imagery (B ve Surface (Yes Yes	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent In Stunted o 7) Other (Ex B8) No Depth (ir No Depth (ir	ined Lea 1, 2, 4A, (B11) ivertebra: Sulfide (Rhizosphor of Reduction	tes (B13) Odor (C1) neres along ced Iron (C ction in Tille ed Plants (E Remarks)	Living Roo 4) ed Soils (C6 01) (LRR A)	ots (C3) 	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) n P Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Vetland Hydrology Indicators rimary Indicators (minimum of 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 Aeria Sparsely Vegetated Conca Field Observations: Surface Water Present? Vater Table Present? Saturation Present? Saturation Present?	I Imagery (B ve Surface (Yes Yes	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent In Stunted o 7) Other (Ex B8) No Depth (ir No Depth (ir	ined Lea 1, 2, 4A, (B11) ivertebra: Sulfide (Rhizosphor of Reduction	tes (B13) Odor (C1) neres along ced Iron (C ction in Tille ed Plants (E Remarks)	Living Roo 4) ed Soils (C6 01) (LRR A)	ots (C3) 	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) n P Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Vetland Hydrology Indicators rimary Indicators (minimum of 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 Aeria Sparsely Vegetated Concaesical Con	I Imagery (B ve Surface (Yes Yes	Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent In Stunted o 7) Other (Ex B8) No Depth (ir No Depth (ir	ined Lea 1, 2, 4A, (B11) ivertebra: Sulfide (Rhizosphor of Reduction	tes (B13) Odor (C1) neres along ced Iron (C ction in Tille ed Plants (E Remarks)	Living Roo 4) ed Soils (C6 01) (LRR A)	ots (C3) 	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) n C Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)



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

Project/Site: Foster Avenue	City/C	County: Humbold	10	Sampling Date:	12/12/1
Applicant/Owner: Arcata Land $\hat{\boldsymbol{v}}_{r}$	City/C	Journey. The moone			
				Sampling Point:	1Р ЧИ
Investigator(s): Cindy Wilcox & Greg OConnell					
Landform (hillslope, terrace, etc.): Maring ter	ra Le Loca	I relief (concave,	convex, none):	Slo	pe (%):
Subregion (LRR): A, MLRA 4B	Lat:	086340	_ Long:	101 129 Datu	ım: Humbe
Soil Map Unit Name: Jolly grant 0	2010		NWI class	sification: PEMI	D
Are climatic / hydrologic conditions on the site typical fo	r this time of year? Y	′es <u> </u>	(If no, explain i	n Remarks.)	
Are Vegetation, Soil, or Hydrology	significantly distur	bed? Are	"Normal Circumstance	s" present? Yes	K No
Are Vegetation, Soil, or Hydrology	naturally problema	atic? (If no	eeded, explain any ans	wers in Remarks)	
SUMMARY OF FINDINGS - Attach site ma		·		•	eatures, etc
Hydrophytic Vegetation Present? Yes			<u> </u>		
Hydric Soil Present? Yes	No	is the Sampled			
Wetland Hydrology Present? Yes			nd? Yes_		- 9
VEGETATION - Use scientific names of p		ededulcic	over flat =	iurface	
		ninant Indicator	Dominance Test we	orkshoot:	
Tree Stratum (Plot size: 30+1)	% Cover Spe		Number of Dominan	DESCRIPTION OF THE PROPERTY OF	1
			That Are OBL, FAC		(A)
2			Total Number of Dor	minant (
3			Species Across All S	_1	(B)
4Sapling/Shrub Stratum (Plot size:	= To	tal Cover	Percent of Dominant That Are OBL, FACU		(0-5090 (AVB)
	•		Prevalence Index w	rorksheet:	
1			Total % Cover o	f: Multiply	y by:
2 3			OBL species	x 1 =	
4			FACW species	x 2 =	
5.	 , ,		FAC species	x 3 =	
	= Tol	tal Cover	FACU species	x 4 =	
Herb Stratum (Plot size:		CW.	<u> </u>		
1. Tritolium Sp * (X)	_ <u>/O</u> >	*(hr	Column Totals:	(A)	(B)
2. Rephenn Set UNS	<u> </u>) UL	Prevalence Ind	ex = B/A =	
3. unknown Seedlings *			Hydrophytic Vegeta		
4. Courseem your Fidentified				or Hydrophytic Vegeta	ation
5. later by employee - (W)			√ 2 - Dominance 1	Test is >50% CW	
6			3 - Prevalence li	ndex is ≤3.0¹	
	9-1-6/1		4 - Morphologica	al Adaptations ¹ (Provi	ide supporting
8				arks or on a separate	sheet)
9				-Vascular Plants ¹	West :
10			[27] ·	Irophytic Vegetation ¹	
11			be present, unless di	soil and wetland hydri isturbed or problemat	
Woody Vine Stratum (Plot size: 5 17)	= Tota	al Cover		•	
1			Hydrophytic		
2			Vegetation	-	1
PC	= Tota	al Cover		Yes No_\	
% Bare Ground in Herb Stratum					
Remarks: * recently tilled fills	1				
The trees					



Donth Makin	to the depth in	eeded to docun	ient the n	idicator	or contirm	the abse	nce of indicators.)
Depth Matrix			k Features		. 2		Demode
(inches) Color (moist)		Color (moist)		Type	Loc ²	<u>Texture</u>	e Remarks
0-20 1048 3/3	1 (00						
2,6							
· · · · · · · · · · · · · · · · · · ·						-	
(0)							= / ===================================
						1.2	2) anation: DI =Doro Lining M=Matrix
¹ Type: C=Concentration, D=Dep Hydric Soil Indicators: (Applie	pletion, RM=Rec	duced Matrix, CS	=Covered	or Coate	d Sand Gra	ams.	² Location: PL=Pore Lining, M=Matrix. cators for Problematic Hydric Soils ³ :
•	Japie to all LINE			u.,			·
Histosol (A1)	_	Sandy Redox (S	•				2 cm Muck (A10)
Histic Epipedon (A2)		Stripped Matrix					Red Parent Material (TF2)
Black Histic (A3)	_	Loamy Mucky N	•		MLRA 1)		Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)		Loamy Gleyed I				_	Other (Explain in Remarks)
Depleted Below Dark Surface	ce (A11)	Depleted Matrix				2	
Thick Dark Surface (A12)		Redox Dark Sur	rface (F6)				icators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	_	Depleted Dark	-	7)			vetland hydrology must be present,
Sandy Gleyed Matrix (S4)		Redox Depress	ions (F8)			U	inless disturbed or problematic.
Restrictive Layer (if present):							
Type:		_	30			1	
Depth (inches):		_				Hydric	Soil Present? Yes No
HYDROLOGY							
Wetland Hydrology Indicators							econdary Indicators (2 or more required)
Primary Indicators (minimum of	one requirea; cr						
Surface Water (A1)		Water-Sta			xcept	-	_ Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)			1, 2, 4A, a	nd 4B)			4A, and 4B)
Saturation (A3)		Salt Crust	(B11)				Drainage Patterns (B10)
Water Marks (B1)		Aquatic In	vertebrate:	(D42)		_	
				(619)		_	Dry-Season Water Table (C2)
Sediment Deposits (B2)		Hydrogen				-	- -
			Sulfide Od	lor (C1)	Living Roo	- - ots (C3) _	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)		Oxidized F	Sulfide Od Rhizospher	lor (C1) es along		- - 	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Algal Mat or Crust (B4)		Oxidized F	Sulfide Od Rhizospher of Reduce	lor (C1) es along d Iron (C4	4)	_	Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)		Oxidized F Presence Recent Iro	Sulfide Oo Rhizospher of Reduce on Reduction	lor (C1) res along d Iron (C4 on in Tille	4) d Soils (C6	i) <u>2</u>	Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) ★ FAC-Neutral Test (D5)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	Imageny (B7)	Oxidized F Presence Recent Iro Stunted on	Sulfide Od Rhizospher of Reduce on Reduction Stressed	lor (C1) res along d Iron (C4 on in Tille Plants (D	4)	i) <u>2</u>	 Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) ★ FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial		Oxidized F Presence Recent Iro	Sulfide Od Rhizospher of Reduce on Reduction Stressed	lor (C1) res along d Iron (C4 on in Tille Plants (D	4) d Soils (C6	i) <u>2</u>	Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) ★ FAC-Neutral Test (D5)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Sparsely Vegetated Concar		Oxidized F Presence Recent Iro Stunted on	Sulfide Od Rhizospher of Reduce on Reduction Stressed	lor (C1) res along d Iron (C4 on in Tille Plants (D	4) d Soils (C6	i) <u>2</u>	 Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) ★ FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Sparsely Vegetated Concar Field Observations:	ve Surface (B8)	Oxidized F Presence Recent Iro Stunted or Other (Exp	Sulfide Oc Rhizospher of Reduce in Reduction Stressed plain in Re	lor (C1) res along d Iron (C4 on in Tille Plants (D	4) d Soils (C6	i) <u>2</u>	 Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) ★ FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Sparsely Vegetated Concar Field Observations: Surface Water Present?	ve Surface (B8) Yes No	Oxidized F Presence Recent Iro Stunted of Other (Exp	Sulfide Od Rhizospher of Reduce in Reduction Stressed plain in Re ches):	lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6	i) <u>2</u>	 Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) ★ FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Sparsely Vegetated Concar Field Observations: Surface Water Present?	ve Surface (B8)	Oxidized F Presence Recent Iro Stunted of Other (Exp	Sulfide Oc Rhizospher of Reduce in Reduction Stressed plain in Re	lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6 i1) (LRR A)	;) <u>2</u>) _ –	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)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Sparsely Vegetated Concav Field Observations: Surface Water Present? Water Table Present?	ve Surface (B8) Yes No	Oxidized F Presence Recent Iro Stunted or Other (Exp	Sulfide Od Rhizospher of Reduce in Reduction Stressed plain in Re ches): ches):	lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6 i1) (LRR A)	;) <u>2</u>) _ –	Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Sparsely Vegetated Concar Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	Yes No Yes No Yes No	Oxidized F Presence Recent Iro Stunted of Other (Exp	Sulfide Od Rhizospher of Reduce on Reduction Stressed plain in Re ches): ches): ches):	lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6 in) (LRR A) Wetla	i) <u>2</u>) and Hydr	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)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Sparsely Vegetated Concaverield Observations: Surface Water Present? Water Table Present? Saturation Present?	Yes No Yes No Yes No	Oxidized F Presence Recent Iro Stunted of Other (Exp	Sulfide Od Rhizospher of Reduce on Reduction Stressed plain in Re ches): ches): ches):	lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6 in) (LRR A) Wetla	i) <u>2</u>) and Hydr	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)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Sparsely Vegetated Concar Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream	Yes No Yes No Yes No	Oxidized F Presence Recent Iro Stunted of Other (Exp	Sulfide Od Rhizospher of Reduce on Reduction Stressed plain in Re ches): ches): ches):	lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6 in) (LRR A) Wetla	i) <u>2</u>) and Hydr	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)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Sparsely Vegetated Concar Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	Yes No Yes No Yes No	Oxidized F Presence Recent Iro Stunted of Other (Exp	Sulfide Od Rhizospher of Reduce on Reduction Stressed plain in Re ches): ches): ches):	lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6 in) (LRR A) Wetla	i) <u>2</u>) and Hydr	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)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Sparsely Vegetated Concar Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream	Yes No Yes No Yes No	Oxidized F Presence Recent Iro Stunted of Other (Exp	Sulfide Od Rhizospher of Reduce on Reduction Stressed plain in Re ches): ches): ches):	lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6 in) (LRR A) Wetla	i) <u>2</u>) and Hydr	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)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Sparsely Vegetated Concar Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream	Yes No Yes No Yes No	Oxidized F Presence Recent Iro Stunted of Other (Exp	Sulfide Od Rhizospher of Reduce on Reduction Stressed plain in Re ches): ches): ches):	lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6 in) (LRR A) Wetla	i) <u>2</u>) and Hydr	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)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Sparsely Vegetated Concar Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream	Yes No Yes No Yes No	Oxidized F Presence Recent Iro Stunted of Other (Exp	Sulfide Od Rhizospher of Reduce on Reduction Stressed plain in Re ches): ches): ches):	lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6 in) (LRR A) Wetla	i) <u>2</u>) and Hydr	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)

Project/Site: Foster Avenue		City/County	Humboldt	<u> </u>	Sampling Date:	12/18/2
Applicant/Owner: Arcata Land Co.				State: CA	Sampling Point:	TP 51
Investigator(s): Cindy Wilcox & Greg OConnell		Section, To	wnship, Ra	inge: Sec20T06N R01E		
Landform (hillslope, terrace, etc.):Swall		Local relief	(concave,	convex, none):	are slo	pe (%): 2-3
Subregion (LRR): A, MLRA 4B	Lat:	40.88	8 390°	Long: -124.101	950° Datu	m: Humbu
Soil Map Unit Name: Joly glant 0-2	%	4		NWI classific	ation: PEM	ID
Are climatic / hydrologic conditions on the site typical for	this time of ye	ar? Yes				
Are Vegetation, Soil, or Hydrology	_ significantly	disturbed?	Are '	"Normal Circumstances" p	resent? Yes >	✓ No
Are Vegetation, Soil, or Hydrology	_ naturally pro	blematic?	(If ne	eeded, explain any answe	rs in Remarks.)	
SUMMARY OF FINDINGS – Attach site ma	p showing	samplin	g point l	ocations, transects	, important fe	atures, etc.
Hydrophytic Vegetation Present? Yes	No					1
Hydric Soil Present? Yes			e Sampled in a Wetlar		No /	•
Wetland Hydrology Present? Yes	No					
- recently tilled tield.	0 11					
- Gedge of tovo bean	Hit ld.					
VEGETATION – Use scientific names of pla	ants.					
Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?		Dominance Test work		
1			_Otdtuo	Number of Dominant S That Are OBL, FACW,	pecies or FAC:	(A)
2				Total Number of Domin		
3			-	Species Across All Stra		(B)
4				Percent of Dominant Sp	necies CA	No. 15
Sapling/Shrub Stratum (Plot size:)		= Total Co	ver	That Are OBL, FACW,		(A/B)
1				Prevalence Index wor	ksheet:	
2.				Total % Cover of:		/ by:
3				OBL species	The second secon	
4				FACW species FAC species		
5				FACU species		
Herb Stratum (Plot size:	_	= Total Co	ver		x5=	
1 / Tritolium sp.	5	1	NL	Column Totals:		(B)
2 Festuce perennis	8	1	FAC		= B/A =	
3. Gerenium Mollei	2	N	NC.	Hydrophytic Vegetation		
4.				1 - Rapid Test for H		ation
5. Ly Later identified as burseen				2 - Dominance Tes		
6. clover by employee - (W)				3 - Prevalence Inde	ex is ≤3.0 ¹	
7				4 - Morphological A	daptations1 (Provi	de supporting
8				data in Remarks	or on a separate	sheet)
9				Problematic Hydron		(Evolain)
10			-	Indicators of hydric soil	- -	
· · ·	15	= Total Cov	er	be present, unless distu		
Woody Vine Stratum (Plot size:)			·.			
1.				Hydrophytic		
2.		 = Total Cov		Vegetation Present? Yes		

OI

0-19

TRSU Consulting Engineers & Geologists, Inc.

Depth Matrix	pth needed to docum Redo	x Feature	es			2
(inches) Color (moist) %	Color (moist)	%	Type ¹	Loc2	Texture	Remarks
3-10 10 48 3/2 99	104R 5/x	- 1	RM	M	CL	WHEN THE
19 IN VR 3/2 97	1154R 5/8	8	RM	M	CI	7 77
0-11 10 1K/10 10	10/10/0	_0_	- 1711		100	
	-					.75
		-		-		
	=					
W.					-	·
	_					
	4					l-
Type: C=Concentration, D=Depletion, RM				d Sand G		ocation: PL=Pore Lining, M=Matrix.
lydric Soil Indicators: (Applicable to all			ted.)			ors for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Redox (S	•				m Muck (A10)
Histic Epipedon (A2)	Stripped Matrix					d Parent Material (TF2)
Black Histic (A3)	Loamy Mucky N			MLRA 1	_	ry Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)	Loamy Gleyed		2)		Ot	her (Explain in Remarks)
Depleted Below Dark Surface (A11)	Depleted Matrix	(F3)			_	
Thick Dark Surface (A12)	Redox Dark Su	rface (F6	i)			tors of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark	Surface ((F7)		wet	and hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depress	ions (F8)		unle	ess disturbed or problematic.
Restrictive Layer (if present):						
Type:						
Depth (inches):	15				Hydric So	il Present? Yes No/
NICCIVIDA / 12/2	1. 7. 2. 7. 1. 1.	14 D7	avtu	HVV10	" Reday	341 3 ~ 10" but
meakly (41%) & inc	revosi	n %	e 11	". No	Redox + callin	is this a hydric
meakly (Lielo) e me 5011 YDROLOGY	revaes !	n %	e 11	IVN 10	+ callin	igthisa hydric
YDROLOGY Netland Hydrology Indicators:	t		e II	I'. No	Vicin	
YDROLOGY	t		e 11	1'. No	Sec	ondary Indicators (2 or more required)
YDROLOGY Netland Hydrology Indicators:	ed; check all that appl	y)	e 11		Sec	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require	ed; check all that appl	y) ined Lea			Sec	ondary Indicators (2 or more required)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1)	ed; check all that appl	y) ined Lea 1, 2, 4A,	ves (B9) (e		Seco	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3)	ed; check all that appl Water-Sta MLRA Salt Crust	y) ined Lea 1, 2, 4A, (B11)	ves (B9) (e and 4B)		Seco	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In	y)_ ined Lea 1, 2, 4A, (B11) vertebrat	ves (B9) (e and 4B)		Secondary Second	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen	y) ined Lea 1, 2, 4A, (B11) vertebrat Sulfide (ves (B9) (e and 4B) des (B13) Odor (C1)	xcept	Seco	ondary 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 (C
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F	y) ined Lea 1, 2, 4A, (B11) vertebral Sulfide (Rhizosph	ves (B9) (e and 4B) les (B13) Odor (C1) eres along	xcept Living Ro	Second	ondary 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 (C Geomorphic Position (D2)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence	y) ined Lea 1, 2, 4A, (B11) vertebrat Sulfide (Rhizosph of Reduc	ves (B9) (e and 4B) les (B13) Odor (C1) eres along ced Iron (C4)	except Living Ro	Second	ondary 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 (C Geomorphic Position (D2) Shallow Aquitard (D3)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require 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)	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro	y) ined Lea 1, 2, 4A, (B11) vertebrat Sulfide (Rhizosph of Reduc in Reduc	ves (B9) (e and 4B) les (B13) Odor (C1) leres along ced Iron (C4)	except Living Ro 4) d Soils (C	Secondary	ondary 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 (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro	y) ined Lea 1, 2, 4A, (B11) vertebrat Sulfide (Rhizosph of Reduc in Reduc	ves (B9) (e and 4B) les (B13) Odor (C1) eres along ced Iron (C4)	except Living Ro 4) d Soils (C	Secondary	ondary 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 (C Geomorphic Position (D2) Shallow Aquitard (D3)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require 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)	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or	y) ined Lea 1, 2, 4A, (B11) vertebrat Sulfide (Rhizosph of Reduc on Reduc	ves (B9) (e and 4B) les (B13) Odor (C1) leres along led Iron (C4 tion in Tille d Plants (D	except Living Ro 4) d Soils (C	Seconds (C3)	ondary 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 (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require 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)	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	y) ined Lea 1, 2, 4A, (B11) vertebrat Sulfide (Rhizosph of Reduc on Reduc	ves (B9) (e and 4B) les (B13) Odor (C1) leres along led Iron (C4 tion in Tille d Plants (D	except Living Ro 4) d Soils (C	Seconds (C3)	ondary 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 (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require 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 (B	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	y) ined Lea 1, 2, 4A, (B11) vertebrat Sulfide (Rhizosph of Reduc on Reduc	ves (B9) (e and 4B) les (B13) Odor (C1) leres along led Iron (C4 tion in Tille d Plants (D	except Living Ro 4) d Soils (C	Seconds (C3)	ondary 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 (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require 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 (E Sparsely Vegetated Concave Surface	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	y) ined Lea 1, 2, 4A, (B11) vertebral Sulfide (Rhizosph of Reduce Reduce Stresse	ves (B9) (e and 4B) des (B13) Odor (C1) eres along ced Iron (C- tion in Tille d Plants (D	except Living Ro 4) d Soils (C	Seconds (C3)	ondary 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 (Ci Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require 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 (E Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	y) ined Lea 1, 2, 4A, (B11) vertebrat Sulfide (Rhizosph of Reduc To Stresse blain in F	ves (B9) (e and 4B) des (B13) Odor (C1) eres along ced Iron (C- tion in Tille d Plants (D	Living Ro 4) d Soils (C	Seconds (C3)	ondary 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 (C: Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require 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 (B Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes Saturation Present?	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In: Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp (B8)	y) ined Lea 1, 2, 4A, (B11) vertebrat Sulfide (Rhizosph of Reduc on Reduc of Stresse plain in F	ves (B9) (e and 4B) les (B13) Odor (C1) leres along led Iron (C4) tion in Tille d Plants (D Remarks)	Living Ro 4) d Soils (C	Secondary Second	ondary 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 (Ci Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require 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 (B Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present?	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp (B8) No Depth (in No Depth (in	y) ined Lea 1, 2, 4A, (B11) vertebrat Sulfide (Rhizosph of Reduce Stresse blain in Reduce ches): ches): ches):	ves (B9) (e and 4B) des (B13) Odor (C1) eres along ced Iron (C4) tion in Tille d Plants (D	Living Ro 4) d Soils (C	Second	ondary 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 (C: Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required and state of the state o	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp (B8) No Depth (in No Depth (in	y) ined Lea 1, 2, 4A, (B11) vertebrat Sulfide (Rhizosph of Reduce Stresse blain in Reduce ches): ches): ches):	ves (B9) (e and 4B) des (B13) Odor (C1) eres along ced Iron (C4) tion in Tille d Plants (D	Living Ro 4) d Soils (C	Second	ondary 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 (C: Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required one sequired of the sequi	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp (B8) No Depth (in No Depth (in	y) ined Lea 1, 2, 4A, (B11) vertebrat Sulfide (Rhizosph of Reduce Stresse blain in Reduce ches): ches): ches):	ves (B9) (e and 4B) des (B13) Odor (C1) eres along ced Iron (C4) tion in Tille d Plants (D	Living Ro 4) d Soils (C	Second	ondary 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 (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required and state of the state o	ed; check all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp (B8) No Depth (in No Depth (in	y) ined Lea 1, 2, 4A, (B11) vertebrat Sulfide (Rhizosph of Reduce Stresse blain in Reduce ches): ches): ches):	ves (B9) (e and 4B) des (B13) Odor (C1) eres along ced Iron (C4) tion in Tille d Plants (D	Living Ro 4) d Soils (C	Second	ondary 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 (C: Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

(3 n //
CILL
Consulting Engineers

roject/Site: Foster Avenue pplicant/Owner: Arcata Land Convestigator(s): Cindy Wilcox & Greg OConnell andform (hillslope, terrace, etc.): Avairage dit ubregion (LRR): A, MLRA 4B oil Map Unit Name: DVN a M 6-296		City/County: Humbold Section, Township, Ra	State: CA	Sampling Date: TPbU
nvestigator(s): Cindy Wilcox & Greg OConnell andform (hillslope, terrace, etc.): dwww.dadd.di- ubregion (LRR): A, MLRA 4B	eh	Section, Township, Ra		
andform (hillslope, terrace, etc.): draining dit	eh	Section, Township, Ra	ange. Goo. See Joon 110 12	
re climatic / hydrologic conditions on the site typical for th	Lat:	40,688100	convex, none):	Slope (%): 2-3 19942 Datum: Humbo cation: home
re Vegetation, Soil, or Hydrology				present? Yes X No
re Vegetation, Soil, or Hydrology UMMARY OF FINDINGS - Attach site map	-	·	eeded, explain any answe locations, transects	·
	No	1 0.		, , ,
	No	Is the Sample		✓
Wetland Hydrology Present? Yes	No	within a Wetla	nd? Yes	No
Remarks: Drainage ditch cleaned that was historically grades	to dr	avator. Loca	el low spot i	s linear feature
EGETATION – Use scientific names of plan	nts.			
Tree Stratum (Plot size: 30 CL)	Absolute % Cover	Dominant Indicator Species? Status	Dominance Test work Number of Dominant S That Are OBL, FACW,	pecies
S			Total Number of Domin Species Across All Stra	
Sapling/Shrub Stratum (Plot size:	Ø	= Total Cover	Percent of Dominant Sp That Are OBL, FACW,	or FAC: (A/B)
J			Prevalence Index wor	
2			Total % Cover of:	Multiply by: x 1 =
s				x1=
				x3=
ō	- 0			x 4 =
Herb Stratum (Plot size: 5 +)	10	= Total Cover		x 5 =
Festuca perennis Berseen clover	60	Y FAC	Column Totals:	(A) (B)
Plantogy lonceuta	5	N FACH	Prevalence Index	
Renortulus repens	5	NEAC	Hydrophytic Vegetation	Indicators: Hydrophytic Vegetation
Plantago meior	フ	N EAC	Dominance Tes	
Hypochen, redicate	2	WLACI	3 - Prevalence Inde	
Telfolum repens	1.5	NEAC	4 - Morphological A data in Remarks	Adaptations ¹ (Provide supporting s or on a separate sheet)
			5 - Wetland Non-Va	
0			l .	ohytic Vegetation¹ (Explain)
1	99	Total Cover	'Indicators of hydric soil be present, unless distu	l and wetland hydrology must irbed or problematic.
(iot of 20.				
·			Hydrophytic	1
			Vegetation Yes	s No
6 Bare Ground in Herb Stratum/ S	4	= Total Cover	160	

ampling Point: The Gonsulting Engineers & Geologists, Inc.

	cupe to me deb	th needed to docun			or contirm	the abse	ince of indicators.)
	atrix		<u>Features</u>		1002	Toutur	o Pomorko
(inches) Color (mo		Color (moist)	%	Type ¹	_Loc ² _	Textur	e Remarks
0-1 10962	3/2 10	1				<u></u>	
1-29 10XR3	12 10						
1-24 INVR	4/2 70	107R 5/8	20	RM	M	C	
1011	10	10/10 / 6	0	**			* ::
S		-					
¹ Type: C=Concentration, I	D=Depletion, RM	=Reduced Matrix, CS	=Covered	or Coate	d Sand Gra	ains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (A	Applicable to all	LRRs, unless other	wise note	d.)		Indi	icators for Problematic Hydric Soils ³ :
Histosol (A1)		Sandy Redox (S					2 cm Muck (A10)
Histic Epipedon (A2)		Stripped Matrix				_	Red Parent Material (TF2)
Black Histic (A3)		Loamy Mucky N			MLRA 1)	_	Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)		Loamy Gleyed I				_	Other (Explain in Remarks)
Depleted Below Dark		✓ Depleted Matrix				٦	
Thick Dark Surface (A	•	Redox Dark Sur					licators of hydrophytic vegetation and
Sandy Mucky Mineral		Depleted Dark S	•	7)			wetland hydrology must be present,
Sandy Gleyed Matrix (Redox Depress	ions (F8)			, ,	unless disturbed or problematic.
Restrictive Layer (if pres	ent):						
Туре:							
Depth (inches):						Hydric	Soil Present? Yes No
HYDROLOGY							
Wetland Hydrology Indic	ators:						
Wetland Hydrology Indic		ed; check all that apple	y)				Secondary Indicators (2 or more required)
Primary Indicators (minimu				es (B9) (e	xcept	\$	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2,
Primary Indicators (minimu	um of one require	Water-Sta	ned Leave		xcept	§	Water-Stained Leaves (B9) (MLRA 1, 2,
Primary Indicators (minimum Surface Water (A1) High Water Table (A2)	um of one require	Water-Sta	ned Leave 1, 2, 4A, a		xcept	\$	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3)	um of one require	Water-Stai MLRA Salt Crust	ned Leave 1, 2, 4A, a (B11)	nd 4B)	xcept	§	Water-Stained Leaves (B9) (MLRA 1, 2,
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	um of one require	Water-Stai	ined Leave 1, 2, 4A, a (B11) vertebrate	nd 4B)	хсерt	§	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B	um of one require	Water-Stai MLRA Salt Crust Aquatic In Hydrogen	ined Leave 1, 2, 4A, a (B11) vertebrate: Sulfide Oc	nd 4B) s (B13) lor (C1)		_	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B Drift Deposits (B3)	um of one require)	Water-Stai MLRA Salt Crust Aquatic In Hydrogen Oxidized F	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe	nd 4B) s (B13) lor (C1) res along	Living Roo	_	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)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4)	um of one require)	Water-Stai MLRA Salt Crust Aquatic In Hydrogen Oxidized F	ined Leave 1, 2, 4A, a (B11) vertebrate: Sulfide Oc Rhizosphei of Reduce	nd 4B) s (B13) lor (C1) res along d Iron (C-	Living Roo	- - ots (C3) _	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)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	um of one require 2 2)	Water-Stai MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro	ined Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizosphe of Reduce n Reduction	nd 4B) s (B13) lor (C1) res along d Iron (C-	Living Roo (1) d Soils (C6		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)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B	um of one require 2) 2) 4)	Water-Stal MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or	ned Leave 1, 2, 4A, a (B11) vertebrate: Sulfide Oc Rhizosphei of Reduce n Reduction	nd 4B) s (B13) lor (C1) res along d Iron (Continue) on in Tille Plants (D	Living Roo (1) d Soils (C6		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) NO
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B4)	um of one require) 2) 4) B6) Aerial Imagery (E	Water-Stal MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ned Leave 1, 2, 4A, a (B11) vertebrate: Sulfide Oc Rhizosphei of Reduce n Reduction	nd 4B) s (B13) lor (C1) res along d Iron (Continue) on in Tille Plants (D	Living Roo (1) d Soils (C6		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)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B1) Inundation Visible on Sparsely Vegetated C	um of one require) 2) 4) B6) Aerial Imagery (E	Water-Stal MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ned Leave 1, 2, 4A, a (B11) vertebrate: Sulfide Oc Rhizosphei of Reduce n Reduction	nd 4B) s (B13) lor (C1) res along d Iron (Continue) on in Tille Plants (D	Living Roo (1) d Soils (C6		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) NO
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (Indicated Sparsely Vegetated Commended C	um of one require 2) 3) 36) Aerial Imagery (Econcave Surface	Water-Stal MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ned Leave 1, 2, 4A, a (B11) vertebrate: Sulfide Oc Rhizospher of Reduce n Reductic Stressed	nd 4B) s (B13) lor (C1) res along d Iron (Continue) on in Tille Plants (D	Living Roo (1) d Soils (C6		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) NO
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (Inundation Visible on Sparsely Vegetated Company of the Company o	um of one require 2) 2) 36) Aerial Imagery (Econcave Surface	Water-Stai MLRA Salt Crust Aquatic Int Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp (B8)	ned Leave 1, 2, 4A, a (B11) vertebrate: Sulfide Oc Rhizosphei of Reduce n Reductio Stressed blain in Re	nd 4B) s (B13) lor (C1) res along d Iron (C- on in Tille Plants (C marks)	Living Roo I) d Soils (C6 1) (LRR A		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) NO
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (I6) Inundation Visible on Sparsely Vegetated Communication Visible Observations: Surface Water Present?	um of one require 2) 2) 36) Aerial Imagery (Econcave Surface of Yes Yes	Water-Stal MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp (B8) No Depth (in Depth (in	ned Leave 1, 2, 4A, a (B11) vertebrate: Sulfide Oc Rhizospher of Reduce on Reducti Stressed blain in Re ches): ches):	nd 4B) s (B13) lor (C1) res along d Iron (C- on in Tille Plants (C marks)	Living Root) d Soils (C6 1) (LRR A	ots (C3)	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) ND Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (Inundation Visible on Sparsely Vegetated Communication Visible on Surface Water Present? Water Table Present?	um of one require 2) 2) 36) Aerial Imagery (Econcave Surface Yes Yes	Water-Stai MLRA Salt Crust Aquatic Int Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp (B8)	ned Leave 1, 2, 4A, a (B11) vertebrate: Sulfide Oc Rhizospher of Reduce on Reducti Stressed blain in Re ches): ches):	nd 4B) s (B13) lor (C1) res along d Iron (C- on in Tille Plants (C marks)	Living Root) d Soils (C6 1) (LRR A	ots (C3)	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) NO
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B4) Inundation Visible on Sparsely Vegetated Communications: Surface Water Present?	um of one require 2) 2) 36) Aerial Imagery (Econcave Surface Yes Yes Yes Yes	Water-Stai MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp (B8) No Depth (in No Depth (in	ned Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher of Reduce on Reductic Stressed blain in Re ches): ches):	nd 4B) s (B13) lor (C1) res along d Iron (Con in Tille Plants (D marks)	Living Roo d Soils (C6 1) (LRR A	ots (C3)	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) NO Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B4) Inundation Visible on Sparsely Vegetated Comparise Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	um of one require 2) 2) 36) Aerial Imagery (Econcave Surface Yes Yes Yes Yes	Water-Stai MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp (B8) No Depth (in No Depth (in	ned Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher of Reduce on Reductic Stressed blain in Re ches): ches):	nd 4B) s (B13) lor (C1) res along d Iron (Con in Tille Plants (D marks)	Living Roo d Soils (C6 1) (LRR A	ots (C3)	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) NO Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (Inundation Visible on Sparsely Vegetated Company V	um of one require 2) 2) 36) Aerial Imagery (Econcave Surface Yes Yes Yes Yes Stream gauge, m	Water-Stal MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp (B8) No Depth (in No Depth (in nonitoring well, aerial	ned Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher of Reduce on Reductic Stressed blain in Re ches): ches):	nd 4B) s (B13) lor (C1) res along d Iron (Con in Tille Plants (D marks)	Living Roo d Soils (C6 1) (LRR A	ots (C3)	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) NO Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (Implementation Visible on Sparsely Vegetated Comparison of Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (um of one require 2) 2) 36) Aerial Imagery (Econcave Surface Yes Yes Yes Yes Stream gauge, m	Water-Stal MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp (B8) No Depth (in No Depth (in nonitoring well, aerial	ned Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher of Reduce on Reductic Stressed blain in Re ches): ches):	nd 4B) s (B13) lor (C1) res along d Iron (Con in Tille Plants (D marks)	Living Roo d Soils (C6 1) (LRR A	ots (C3)	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) NO Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (Inundation Visible on Sparsely Vegetated Comparison of Comparison (A) Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (um of one require 2) 2) 36) Aerial Imagery (Econcave Surface Yes Yes Yes Yes Stream gauge, m	Water-Stal MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp (B8) No Depth (in No Depth (in nonitoring well, aerial	ned Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher of Reduce on Reductic Stressed blain in Re ches): ches):	nd 4B) s (B13) lor (C1) res along d Iron (Con in Tille Plants (D marks)	Living Roo d Soils (C6 1) (LRR A	ots (C3)	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) NO Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (Inundation Visible on Sparsely Vegetated Comparison of Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (um of one require 2) 2) 36) Aerial Imagery (Econcave Surface Yes Yes Yes Yes Stream gauge, m	Water-Stal MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp (B8) No Depth (in No Depth (in nonitoring well, aerial	ned Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher of Reduce on Reductic Stressed blain in Re ches): ches):	nd 4B) s (B13) lor (C1) res along d Iron (Con in Tille Plants (D marks)	Living Roo d Soils (C6 1) (LRR A	ots (C3)	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) NO Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)



Project/Site: Foster Avenue	City/County: _	Humboldt	_ Sampling Date:
Applicant/Owner: Arcata Land CO4			Sampling Point: 1P74
Investigator(s): Cindy Wilcox & Greg OConnell	Section, Tow		
Landform (hillslope, terrace, etc.):			
Subregion (LRR): A, MLRA 4B		100 Long - 124.00	
Soil Map Unit Name: Dungan 0-296		NWI classif	0.
Are climatic / hydrologic conditions on the site typical for this	s time of year? Yes 🔀	No (If no, explain in	Remarks.)
Are Vegetation, Soil, or Hydrologys	ignificantly disturbed?	Are "Normal Circumstances"	present? Yes X No
Are Vegetation, Soil, or Hydrology n	aturally problematic?	(If needed, explain any answ	ers in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing sampling	point locations, transect	s, important features, etc.
Hydrophytic Vegetation Present? Yes N	·		
Hydric Soil Present? Yes N	Is the	Sampled Area a Wetland? Yes	No V
	· ·		
Remarks: Newly cleaned ditch w	executation, cle	eaned annually (c	on munication
Mr. Lane). TP in lowest sw	rale elevativ	n. Sycavater said this	soil layer much lover
VEGETATION – Use scientific names of plant	ts. Then original	inally. Tooksoil from h	ore to grade
Tree Stratum (Plot size:)	Absolute Dominant In % Cover Species?	Statue	PERCENTIAL PROPERTY.
1. Monday Cypress	2	Number of Dominant S That Are OBL, FACW	
2		Total Number of Domi	
3		Species Across All Str	- 1
4		Percent of Dominant S	Species 1 /s X
Sapling/Shrub Stratum (Plot size:	= Total Cove	That Are OBL, FACW	
1		Prevalence Index wo	0.5325007.2020
2		Total % Cover of:	
3			x1=
4			x 2 = x 3 =
5		FACU species	x 4 =
Herb Stratum (Plot size: 5-F-1)	= Total Cove	er I	x 5 =
1. Festuce perennis	65 y 1		(A)(B)
2. Plentago l'encolate	10 W F	Prevalence Inde	
3. German molle	5 2	Hydrophytic Vegetat	
4. unkn, grasses *	5 N		Hydrophytic Vegetation
5	(2 - Dominance Te	st is >50%
6		3 - Prevalence Inc	lex is ≤3.0 ¹
7			Adaptations ¹ (Provide supporting
9		5 - Wetland Non-\	ss or on a separate sheet)
10			phytic Vegetation¹ (Explain)
11.			il and wetland hydrology must
CD	85 = Total Cover	he present uplace die	urbed or problematic.
voccy vine duatum (Flot size.			
		Hydrophytic	
2	= Total Cover	Vegetation Present? Ye	es No
% Bare Ground in Herb Stratum			
Remarks:	his Lime of	402/	
		3	

mpling Point: P (Consulting Engineers & Geologists, Inc.

Profile Desc Depth	Matrix		Redo	ox Feature	s					
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc2	<u>Texture</u>		Remarks	
0-17	10483/2	25	104R 5/4	5			SICL	C.		
	1840 4/2	60	104R4/b	10				-		
19 22	101/02/	00	10 112 110				SL	-		
17-22	1048312	γ.——	:\ <u></u>				_ 50	-		
			*/							
			X) =====					3 7		
										-
			0							
	-	-								
Type: C=Co	oncentration, D=Dep	oletion, RN	M=Reduced Matrix, C	S=Covere	d or Coated	d Sand Gra	ains. [*] L		Pore Lining, M	
_		able to al	II LRRs, unless othe		(.DB				lematic Hydri	: 20112 :
Histosol			Sandy Redox					cm Muck (A10	•	
	oipedon (A2)		Stripped Matrix		4) /awaant	MI DA 4\	_	ed Parent Mai	eriai (1F2) ark Surface (Ti	12)
Black Hi	21 FEET ROLE		Loamy Mucky			MLKA 1)		her (Explain i		12)
	en Sulfide (A4) d Below Dark Surfac	- Δ11\	Loamy Gleyed Depleted Matri		-)		_ ~	rici (Explaii)	ii itoliidika)	
- 10 Mar 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ark Surface (A12)	<i>E</i> (A11)	Redox Dark Se	` '	1		3Indica	tors of hydroi	hytic vegetation	n and
	fucky Mineral (S1)		Depleted Dark						y must be pres	
	Gleyed Matrix (S4)		Redox Depres	sions (F8)	•		unk	ess disturbed	or problematic	
Restrictive I	Layer (if present):									
Type:										
Depth (inc	ches):						Hydric Sc	il Present?	Yes	No
Nemants.	THE R. P. LEWIS CO., LANSING		0-10-101	-0 1 1	Litt mess	27-28-1	i .	110	1 -4 /	Marian and Maria
Remarks.	below topsoi	line	- excavat	edn	411 tox	0501 p	nor to	our te	stpit. '	xeavate,
opera -	below topsoi	d on	- excavat	edn un 3	'abo	ue "	nor to	our te	stpit. 6	1990'S
opera l	below topsoil	d on	- excavata	cdn u~3	abo	ue u	nor to hat it	out te	stpit. 16)-begove	1990'S
opera t	below topsoil or discusse grading.	d on	- excavat ginal surfa	edn un 3	'abo	ne u	nor to hat it	our te	stpit. 16)-begove	1990'S
operate field	grading.	d on	- excavat ginal surfa	edn un 3	'abo	ne u	nor to hat it	our te	stpit. 10)-begove	1990'S
Field	grading.		- excavat ginal surfa	edn Len 3	4" tox	ne u	nor to hat it	our te	stpit. 16 1-begare	1990'S
Field IYDROLO Wetland Hyd	GY drology Indicators:		givened surfa		y" top	ne u			stpit. (
FIELD IYDROLO Wetland Hyd Primary India	GY drology Indicators:		ed; check all that app	oly)			Sec	ondary Indica	itors (2 or more	required)
FIELD IYDROLO Wetland Hyd Primary India Surface	GY drology Indicators: cators (minimum of o		ed; check all that app	oly) ained Leav	/es (B9) (e)		Sec	ondary Indica	ators (2 or more	required)
YDROLO Wetland Hyd Primary India Surface High Wa	GY drology Indicators: cators (minimum of of Water (A1) ater Table (A2)		ed: check all that app Water-Sta	oly) ained Leav	/es (B9) (e)		Sec	ondary Indica Water-Staine 4A, and 4	etors (2 or more ed Leaves (B9)	required)
YDROLO Wetland Hyd Primary India Surface High Wa Saturatio	GY drology Indicators: cators (minimum of of other (A1) ater Table (A2) on (A3)		ed; check all that app Water-Sta MLRA — Salt Crus	oly) ained Leav	res (B9) (e)		Sec	ondary Indica Water-Staine 4A, and 4 Drainage Pa	etors (2 or more ed Leaves (B9)	required) (MLRA 1, 2,
IYDROLO Wetland Hyd Primary India Surface High Wa Saturatia Water M	GY drology Indicators: cators (minimum of of other (A1) ater Table (A2) on (A3) larks (B1)		ed; check all that app Water-St: MLRA Salt Crus Aquatic II	oly) ained Leav 1, 2, 4A, (t (B11)	ves (B9) (e) and 4B) es (B13)		Sec	ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season	ators (2 or more d Leaves (B9) B) tterns (B10)	required) (MLRA 1, 2,
YDROLO Wetland Hyd Primary Indic Surface High Wa Saturatic Water M Sedimer	GY drology Indicators: cators (minimum of of other (A1) ater Table (A2) on (A3)		ed: check all that app Water-Sti MLRA Salt Crus Aquatic II Hydroger	ained Leav A 1, 2, 4A, a t (B11) nvertebrate	ves (B9) (e) and 4B) es (B13)	kcept	Sec	ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation V	ators (2 or more d Leaves (B9) JB) tterns (B10) Water Table (C	required) (MLRA 1, 2,
YDROLO Wetland Hyd Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep	GY drology Indicators: cators (minimum of of of other (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3)		ed: check all that app Water-Sta MLRA Salt Crus Aquatic II Hydroger Oxidized	ained Leav A 1, 2, 4A, a t (B11) nvertebrate n Sulfide O Rhizosphe	/es (B9) (e) and 4B) es (B13) idor (C1)	xcept Living Roo	Sec	ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation V	ttors (2 or more d Leaves (B9) B) tterns (B10) Water Table (C sible on Aerial Position (D2)	required) (MLRA 1, 2,
YDROLO Wetland Hyd Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma	GY drology Indicators: cators (minimum of of of other (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		ed: check all that app Water-Sta MLRA Salt Crus Aquatic II Hydroger Oxidized Presence	ained Leav A 1, 2, 4A, at t (B11) nivertebrate n Sulfide O Rhizosphe e of Reduce	ves (B9) (e) and 4B) es (B13) edor (C1) eres along l	ccept Living Roo	Sec	ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation Vi Geomorphic Shallow Aqu	ttors (2 or more d Leaves (B9) B) tterns (B10) Water Table (C sible on Aerial Position (D2)	required) (MLRA 1, 2, 2) Imagery (C9)
Wetland Hyde Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	GY drology Indicators: cators (minimum of of of other (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3)		ed: check all that app Water-Sta MLRA Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir	ained Leav 1, 2, 4A, at t (B11) nvertebrate n Sulfide O Rhizosphe e of Reduct	ves (B9) (a) and 4B) es (B13) edor (C1) eres along led fron (C4)	ccept Living Roo) 1 Soils (C6	Sec ————————————————————————————————————	ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation Vi Geomorphic Shallow Aqu FAC-Neutral	ttors (2 or more d Leaves (B9) B) tterns (B10) Water Table (Cosible on Aerial Position (D2) itard (D3)	required) (MLRA 1, 2, 2) Imagery (C9)
Primary Indice Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	GY drology Indicators: cators (minimum of of other Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	: one require	ed: check all that app Water-Sta MLRA Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted of	ained Leav 1, 2, 4A, at t (B11) nvertebrate n Sulfide O Rhizosphe e of Reduct	res (B9) (e) and 4B) es (B13) edor (C1) eres along ted fron (C4) ion in Tilled	ccept Living Roo) 1 Soils (C6	Sec ————————————————————————————————————	ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation Vi Geomorphic Shallow Aqu FAC-Neutral Raised Ant M	ttors (2 or more d Leaves (B9) tterns (B10) Water Table (C isible on Aerial Position (D2) itard (D3) Test (D5) N	required) (MLRA 1, 2, 2) Imagery (C9) CRR A)
Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	GY drology Indicators: cators (minimum of of other Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	: one require	ed: check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted co	ained Leav A 1, 2, 4A, a t (B11) nvertebrate n Sulfide O Rhizosphe e of Reduct on Reduct or Stressed	res (B9) (e) and 4B) es (B13) edor (C1) eres along ted fron (C4) ion in Tilled	ccept Living Roo) 1 Soils (C6	Sec ————————————————————————————————————	ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation Vi Geomorphic Shallow Aqu FAC-Neutral Raised Ant M	ttors (2 or more d Leaves (B9) tterns (B10) Water Table (C isible on Aerial Position (D2) itard (D3) Test (D5) \(\mathbb{N}\) flounds (D6) (L	required) (MLRA 1, 2, 2) Imagery (C9) CRR A)
Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati	GY drology Indicators: cators (minimum of of other (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial y Vegetated Concav	: one require	ed: check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted co	ained Leav A 1, 2, 4A, a t (B11) nvertebrate n Sulfide O Rhizosphe e of Reduct on Reduct or Stressed	res (B9) (e) and 4B) es (B13) edor (C1) eres along ted fron (C4) ion in Tilled	ccept Living Roo) 1 Soils (C6	Sec ————————————————————————————————————	ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation Vi Geomorphic Shallow Aqu FAC-Neutral Raised Ant M	ttors (2 or more d Leaves (B9) tterns (B10) Water Table (C isible on Aerial Position (D2) itard (D3) Test (D5) \(\mathbb{N}\) flounds (D6) (L	required) (MLRA 1, 2, 2) Imagery (C9) CRR A)
Primary Indice Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely	GY drology Indicators: cators (minimum of of other (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial by Vegetated Concavivations:	: one require	ed: check all that app Water-Sta MLRA Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted of B7) Other (Exercises)	ained Leav A 1, 2, 4A, a t (B11) nvertebrate n Sulfide O Rhizosphe e of Reduct on Reduct or Stressed	res (B9) (e) and 4B) es (B13) edor (C1) eres along ted fron (C4) ion in Tilled	ccept Living Roo) 1 Soils (C6	Sec ————————————————————————————————————	ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation Vi Geomorphic Shallow Aqu FAC-Neutral Raised Ant M	ttors (2 or more d Leaves (B9) tterns (B10) Water Table (C isible on Aerial Position (D2) itard (D3) Test (D5) \(\mathbb{N}\) flounds (D6) (L	required) (MLRA 1, 2, 2) Imagery (C9) CRR A)
Primary India Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Iron Dep Surface Iron Dep Surface Iron Dep Surface Iron Dep	GY drology Indicators: cators (minimum of of other (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial by Vegetated Concavivations: are Present?	Imagery (ed: check all that app Water-Sta MLRA Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted of B7) Other (Ex) Depth (ii	ained Leav A 1, 2, 4A, a t (B11) nvertebrate n Sulfide O Rhizosphe e of Reduct on Reduct or Stressed xplain in Re	res (B9) (e) and 4B) es (B13) edor (C1) eres along ted fron (C4) ion in Tilled	ccept Living Roo) 1 Soils (C6	Sec ————————————————————————————————————	ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation Vi Geomorphic Shallow Aqu FAC-Neutral Raised Ant M	ttors (2 or more d Leaves (B9) tterns (B10) Water Table (C isible on Aerial Position (D2) itard (D3) Test (D5) \(\mathbb{N}\) flounds (D6) (L	required) (MLRA 1, 2, 2) Imagery (C9) CRR A)
Primary India Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Water M	GY drology Indicators: cators (minimum of of other cators) water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial by Vegetated Concave vations: er Present?	Imagery (e Surface	ed: check all that app Water-Sta MLRA Salt Crus Aquatic In Hydroger Oxidized Presence Recent In Stunted of B7) (B8) No Depth (in	ained Leav 1, 2, 4A, 3 t (B11) nvertebrate n Sulfide O Rhizosphe e of Reduct on Reduct or Stressed cplain in Re	res (B9) (e) and 4B) es (B13) edor (C1) eres along ted fron (C4) ion in Tilled	Living Roo) I Soils (C6 1) (LRR A)	Sec ots (C3) ots (C3)	ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation Vi Geomorphic Shallow Aqu FAC-Neutral Raised Ant M	etors (2 or more ad Leaves (B9) B) Itterns (B10) Water Table (Cosible on Aerial Position (D2) itard (D3) Test (D5) \(\mathbf{N}\) Hounds (D6) (L Hummocks (D	required) (MLRA 1, 2, 2) Imagery (C9) CRR A)
Primary India Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Water Table Saturation P (includes cal	GY drology Indicators: cators (minimum of of of other (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial by Vegetated Concavivations: er Present? Present? Present?	Imagery (e Surface /es /es	ed: check all that app Water-Sta MLRA Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted of B7) (B8) No Depth (ii Depth (ii	ained Leav 1, 2, 4A, 3 t (B11) nivertebrate n Sulfide O Rhizosphe e of Reduct on Reduct or Stressed xplain in Re nches):	ves (B9) (e) and 4B) es (B13) ed (C1) eres along the light of the ligh	Living Roo) I Soils (C6 1) (LRR A)	ots (C3)	ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation Vi Geomorphic Shallow Aqu FAC-Neutral Raised Ant M	etors (2 or more ad Leaves (B9) B) Itterns (B10) Water Table (Cosible on Aerial Position (D2) itard (D3) Test (D5) \(\mathbf{N}\) Hounds (D6) (L Hummocks (D	required) (MLRA 1, 2, 2) Imagery (C9) RR A) 7)
Primary India Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Water Table Saturation P (includes cal	GY drology Indicators: cators (minimum of of of other (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial by Vegetated Concavivations: er Present? Present? Present?	Imagery (e Surface /es /es	ed: check all that app Water-Sta MLRA Salt Crus Aquatic In Hydroger Oxidized Presence Recent In Stunted of B7) (B8) No Depth (in	ained Leav 1, 2, 4A, 3 t (B11) nivertebrate n Sulfide O Rhizosphe e of Reduct on Reduct or Stressed xplain in Re nches):	ves (B9) (e) and 4B) es (B13) ed (C1) eres along the light of the ligh	Living Roo) I Soils (C6 1) (LRR A)	ots (C3)	ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation Vi Geomorphic Shallow Aqu FAC-Neutral Raised Ant M	etors (2 or more ad Leaves (B9) B) Itterns (B10) Water Table (Cosible on Aerial Position (D2) itard (D3) Test (D5) \(\mathbf{N}\) Hounds (D6) (L Hummocks (D	required) (MLRA 1, 2, 2) Imagery (C9) RR A) 7)
Primary India Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Water Table Saturation P (includes cal	GY drology Indicators: cators (minimum of of of other (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial by Vegetated Concavivations: er Present? Present? Present?	Imagery (e Surface /es /es	ed: check all that app Water-Sta MLRA Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted of B7) (B8) No Depth (ii Depth (ii	ained Leav 1, 2, 4A, 3 t (B11) nivertebrate n Sulfide O Rhizosphe e of Reduct on Reduct or Stressed xplain in Re nches):	ves (B9) (e) and 4B) es (B13) ed (C1) eres along the light of the ligh	Living Roo) I Soils (C6 1) (LRR A)		ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation Vi Geomorphic Shallow Aqu FAC-Neutral Raised Ant M	etors (2 or more ad Leaves (B9) B) Itterns (B10) Water Table (Cosible on Aerial Position (D2) itard (D3) Test (D5) \(\mathbf{N}\) Hounds (D6) (L Hummocks (D	required) (MLRA 1, 2, 2) Imagery (C9) RR A) 7)
Primary India Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Water Table Saturation P (includes cal	GY drology Indicators: cators (minimum of of of other (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial by Vegetated Concavivations: er Present? Present? Present?	Imagery (e Surface /es /es	ed: check all that app Water-Sta MLRA Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted of B7) (B8) No Depth (ii Depth (ii	ained Leav 1, 2, 4A, at (B11) Invertebrate In Sulfide O Rhizosphe In Reduct In Stressed Inches):	ves (B9) (e) and 4B) es (B13) ed (C1) eres along the light of the ligh	Living Roo) I Soils (C6 1) (LRR A)		ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation Vi Geomorphic Shallow Aqu FAC-Neutral Raised Ant M	etors (2 or more ad Leaves (B9) B) Itterns (B10) Water Table (Cosible on Aerial Position (D2) itard (D3) Test (D5) \(\mathbf{N}\) Hounds (D6) (L Hummocks (D	required) (MLRA 1, 2, 2) Imagery (C9) RR A) 7)
Primary India Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation P (includes cal	GY drology Indicators: cators (minimum of of of other (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial by Vegetated Concavivations: er Present? Present? Present?	Imagery (e Surface /es /es	ed: check all that app Water-Sta MLRA Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted of B7) (B8) No Depth (ii Depth (ii	ained Leav 1, 2, 4A, at (B11) Invertebrate In Sulfide O Rhizosphe In Reduct In Stressed Inches):	ves (B9) (e) and 4B) es (B13) ed (C1) eres along the light of the ligh	Living Roo) I Soils (C6 1) (LRR A)		ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation Vi Geomorphic Shallow Aqu FAC-Neutral Raised Ant M	etors (2 or more ad Leaves (B9) B) Itterns (B10) Water Table (Cosible on Aerial Position (D2) itard (D3) Test (D5) \(\mathbf{N}\) Hounds (D6) (L Hummocks (D	required) (MLRA 1, 2, 2) Imagery (C9) RR A) 7)
YDROLO Wetland Hyderimary India Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation P (includes cal	GY drology Indicators: cators (minimum of of of other (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial by Vegetated Concavivations: er Present? Present? Present?	Imagery (e Surface /es /es	ed: check all that app Water-Sta MLRA Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted of B7) (B8) No Depth (ii Depth (ii	ained Leav 1, 2, 4A, at (B11) Invertebrate In Sulfide O Rhizosphe In Reduct In Stressed Inches):	ves (B9) (e) and 4B) es (B13) ed (C1) eres along the light of the ligh	Living Roo) I Soils (C6 1) (LRR A)		ondary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation Vi Geomorphic Shallow Aqu FAC-Neutral Raised Ant M	etors (2 or more ad Leaves (B9) B) Itterns (B10) Water Table (Cosible on Aerial Position (D2) itard (D3) Test (D5) \(\mathbf{N}\) Hounds (D6) (L Hummocks (D	required) (MLRA 1, 2, 2) Imagery (C9) RR A) 7)

STATE OF THE PROPERTY OF THE P	ATA FORM – Western Mou	untains, Valleys, and	d Coast Region
& Geologists, Inc. Project/Site: Foster Avenue	City/County: Humbold	It	Sampling Date: 12/19
Applicant/Owner: Arcata Land & t			Sampling Point: TP9 U
Investigator(s): Cindy Wilcox & Greg OConnell			
Landform (hillslope, terrace, etc.): Marine terra			
Subregion (LRR): A, MLRA 4B	Lat: 40.886990°	Long:	Slope (%): 2322° Datum: 24mbald
Soil Map Unit Name: Dungan 0-20	0	NWI classific	ation: none
Are climatic / hydrologic conditions on the site typical for tl			
Are Vegetation, Soil, or Hydrology	significantly disturbed? Are	"Normal Circumstances" p	oresent? Yes X No
Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS - Attach site map	naturally problematic? (If ne	eeded, explain any answe	rs in Remarks.)
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes Yes Yes	No is the Sample		No
VEGETATION – Use scientific names of pla Tree Stratum (Plot size: 38—11.	Absolute Dominant Indicator ***Cover Species? Status**	Dominance Test work Number of Dominant Sp That Are OBL, FACW, 6	pecies
2		Total Number of Domin Species Across All Stra	
Sapling/Shrub Stratum (Plot size: 5 ()	= Total Cover	Percent of Dominant Sp That Are OBL, FACW, of	
1		Prevalence Index worl	
2		Total % Cover of:	
3		OBL species	
4		FACW species	
5		FAC species)
Herb Stratum (Plot size: 5 (1)	= Total Cover		x 4 = x 5 =
1. Doctolus stumerate	35 V FACUS		(A) (B)
2. Holan Paretus	IN FACE		
3. Festuce perennis	25 7 50		= B/A =
4. unk. grossess **	15 N	Hydrophytic Vegetatio	
5.		2 - Dominance Tes	lydrophytic Vegetation
6.		3 - Prevalence Inde	
7		4 - Morphological A	daptations ¹ (Provide supporting or on a separate sheet)
9		5 - Wetland Non-Va	scular Plants
10	*·	Problematic Hydror	phytic Vegetation ¹ (Explain)

_= Total Cover

= Total Cover

Woody Vine Stratum (Plot size:

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?

mpling Point: TPAU & Geologists, Inc.

Depth Matrix		Redo	x Features	3						
(inches) Color (moist)	%0	Color (moist)	<u>%</u>	Type ¹	Loc ²	Textur	<u>e_</u>	Rei	marks	
5-16 10 YR 3/2	100					CL				
110-24 25V 4/2	80	-				C.				
11 34 35 13	$\overline{}$					~	5%			
16-09 0.54 42	20									
376										
-10										
Type: C=Concentration, D=Deple	etion. RM=Red	duced Matrix. C	S=Covered	or Coate	d Sand Gr	ains.	² Location:	PL=Pore L	ining, M=M	atrix.
lydric Soil Indicators: (Applica							icators for			
_ Histosol (A1)		Sandy Redox (•			2 cm Muck	(A10)		
Histic Epipedon (A2)	_	Stripped Matrix				_	Red Paren		ΓF2)	
Black Histic (A3)		Loamy Mucky) (except	MLRA 1)		Very Shallo		•)
Hydrogen Sulfide (A4)	_	Loamy Gleyed			,	_	Other (Exp			
Depleted Below Dark Surface	(A11) —	Depleted Matri		-		_	• •		-	
Thick Dark Surface (A12)		Redox Dark Su				³ Ind	licators of h	drophytic v	egetation a	ind
Sandy Mucky Mineral (S1)	_	Depleted Dark	` ,	7)			wetland hyd		_	
Sandy Gleyed Matrix (S4)		Redox Depres					unless distu			
Restrictive Layer (if present):										
Type:										
Depth (inches):						Hydric	Soil Prese	nt? Yes	. N	o V
omars.							= =			
YDROLOGY										
YDROLOGY Wetland Hydrology Indicators:		and all that are	hA.				Socondan II	adjustors (2	l or more re	quirad\
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of on	ne required; ch			(20)			Secondary II			
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1)	ne required; ch	Water-Sta	ained Leave		xcept	<u>s</u>	Water-S	tained Leav	or more re	
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2)	ne required; ch	Water-Sta	ained Leave 1, 2, 4A, a		xcept	<u>\$</u>	Water-S 4A, a	tained Leav	ves (B9) (M	
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3)	ne required; ch	Water-Sta MLRA Salt Crus	ained Leave 1, 2, 4A, a t (B11)	and 4B)	xcept		Water-S 4A, a Drainag	tained Leav nd 4B) e Patterns	ves (B9) (M (B10)	
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2)	ne required; ch	Water-Sta MLRA Salt Crus Aquatic Ir	ained Leave 1, 2, 4A, a t (B11) overtebrate	and 4B) s (B13)	xcept	§	Water-S 4A, a Drainage Dry-Sea	tained Leav nd 4B) e Patterns (son Water	ves (B9) (M (B10) Table (C2)	LRA 1, 2
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3)	ne required; ch	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger	ained Leave 1, 2, 4A, a t (B11) evertebrate Sulfide Oc	and 4B) s (B13) dor (C1)		-	Water-S 4A, a Drainage Dry-Sea	tained Leav nd 4B) e Patterns (son Water	ves (B9) (M (B10)	LRA 1, 2
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	ne required; ch	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized	ained Leave 1, 2, 4A, a t (B11) nvertebrate Sulfide Oc Rhizosphe	and 4B) s (B13) dor (C1) res along	Living Roc	-	Water-S 4A, a Drainage Dry-Sea	tained Lead nd 4B) e Patterns (son Water on Visible o	ves (B9) (M (B10) Table (C2) In Aerial Ima	LRA 1, 2
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	ne required; ch	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized	ained Leave 1, 2, 4A, a t (B11) evertebrate Sulfide Oc	and 4B) s (B13) dor (C1) res along	Living Roc	-	Water-S 4A, a Drainage Dry-Sea Saturatie Geomor Shallow	tained Leavend 4B) e Patterns (son Water on Visible of the phic Position Aquitard (I	ves (B9) (M (B10) Table (C2) In Aerial Ima In (D2) (D3)	LRA 1, 2
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	ne required; ch	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence	ained Leave 1, 2, 4A, a t (B11) nvertebrate Sulfide Oc Rhizosphe	and 4B) s (B13) dor (C1) res along ed Iron (C4	Living Roc	- - ots (C3) _	Water-S 4A, a Drainage Dry-Sea Saturatie Geomor Shallow	tained Lead nd 4B) Patterns (son Water on Visible of phic Position	ves (B9) (M (B10) Table (C2) In Aerial Ima In (D2) (D3)	LRA 1, 2
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on 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)	ne required; ch	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir	ained Leave 1, 2, 4A, a t (B11) avertebrate I Sulfide Oc Rhizosphel of Reduce	s (B13) dor (C1) res along d Iron (C4 on in Tille	Living Roc (1) d Soils (C6	- - ots (C3) _ -	Water-S 4A, a Drainage Dry-Sea Saturatie Geomor Shallow FAC-Ne	tained Leavend 4B) e Patterns (son Water on Visible of the Position Aquitard (I turnal Test ()	ves (B9) (M (B10) Table (C2) In Aerial Ima In (D2) (D3)	LRA 1, 2
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on 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)		Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir	ained Leave 1, 2, 4A, a t (B11) evertebrates Sulfide Oc Rhizospher of Reduce on Reduction Stressed	s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roc (1) d Soils (C6	- - ots (C3) _ -	Water-S 4A, a Drainage Dry-Sea Saturatie Geomor Shallow FAC-Ne Raised	tained Leavend 4B) e Patterns (son Water on Visible of the Position Aquitard (I turnal Test ()	Wes (B9) (M B10) Table (C2) In Aerial Import (D2) D3) D5)	LRA 1, 2
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on 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)	nagery (B7)	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted o	ained Leave 1, 2, 4A, a t (B11) evertebrates Sulfide Oc Rhizospher of Reduce on Reduction Stressed	s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roc (1) d Soils (C6	- - ots (C3) _ -	Water-S 4A, a Drainage Dry-Sea Saturatie Geomor Shallow FAC-Ne Raised	tained Lear nd 4B) e Patterns (son Water on Visible o phic Positio Aquitard (D utral Test (Wes (B9) (M B10) Table (C2) In Aerial Import (D2) D3) D5)	LRA 1, 2
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on 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 In Sparsely Vegetated Concave	nagery (B7)	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted o	ained Leave 1, 2, 4A, a t (B11) evertebrates Sulfide Oc Rhizospher of Reduce on Reduction Stressed	s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roc (1) d Soils (C6	- - ots (C3) _ -	Water-S 4A, a Drainage Dry-Sea Saturatie Geomor Shallow FAC-Ne Raised	tained Lear nd 4B) e Patterns (son Water on Visible o phic Positio Aquitard (D utral Test (Wes (B9) (M B10) Table (C2) In Aerial Import (D2) D3) D5)	LRA 1, 2
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on 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 In Sparsely Vegetated Concave	nagery (B7)	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted o	ained Leave 1, 2, 4A, a t (B11) evertebrates Sulfide Oc Rhizospher of Reduce on Reduction Stressed	s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roo I) d Soils (C6 1) (LRR A	- - ots (C3) _ -	Water-S 4A, a Drainage Dry-Sea Saturatie Geomor Shallow FAC-Ne Raised	tained Lear nd 4B) e Patterns (son Water on Visible o phic Positio Aquitard (D utral Test (Wes (B9) (M B10) Table (C2) In Aerial Import (D2) D3) D5)	LRA 1, 2
YDROLOGY Netland Hydrology Indicators: Primary Indicators (minimum of on 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 In Sparsely Vegetated Concave Field Observations: Surface Water Present?	nagery (B7) Surface (B8)	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leave 1, 2, 4A, a t (B11) evertebrate: Sulfide Oc Rhizospher of Reduce on Reduction stressed splain in Re	and 4B) s (B13) dor (C1) res along ed Iron (C4 on in Tille Plants (D	Living Roo I) d Soils (C6 1) (LRR A	- - ots (C3) _ -	Water-S 4A, a Drainage Dry-Sea Saturatie Geomor Shallow FAC-Ne Raised	tained Lear nd 4B) e Patterns (son Water on Visible o phic Positio Aquitard (D utral Test (Wes (B9) (M B10) Table (C2) In Aerial Import (D2) D3) D5)	LRA 1, 2
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 In Sparsely Vegetated Concave Field Observations: Surface Water Present? Yever Table Present? Saturation Present?	nagery (B7) Surface (B8) es No	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted o Other (Ex	ained Leave 1, 2, 4A, a t (B11) evertebrates Sulfide Oc Rhizospher of Reduce on Reduction stressed color Stressed color in Re	and 4B) s (B13) dor (C1) res along ed Iron (C4 on in Tille Plants (D	Living Roo 4) d Soils (C6 1) (LRR A		Water-S 4A, a Drainage Dry-Sea Saturatie Geomor Shallow FAC-Ne Raised	tained Leavend 4B) e Patterns (son Water on Visible of the Position Aquitard (Aquitard (Ant Mounds over Humm	wes (B9) (M (B10) Table (C2) In Aerial Image (D2) (D3) (D5) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C)	LRA 1, 2
Primary Indicators (minimum of on 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 In Sparsely Vegetated Concave Field Observations: Surface Water Present? Vegetated Concave Seduration Present?	magery (B7) Surface (B8) es No _ es No _	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leave 1, 2, 4A, a t (B11) avertebrates Sulfide Oc Rhizospher of Reduce on Reduction stressed splain in Re anches):	s (B13) dor (C1) res along d Iron (C4) on in Tille Plants (Demarks)	Living Roo	ots (C3)	Water-S 4A, a Drainage Dry-Sea Saturatie Geomor Shallow FAC-Ne Raised Frost-He	tained Leavend 4B) e Patterns (son Water on Visible of the Position Aquitard (Aquitard (Ant Mounds over Humm	wes (B9) (M (B10) Table (C2) In Aerial Image (D2) (D3) (D5) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C)	LRA 1, 2
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on a 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 In Sparsely Vegetated Concave Field Observations: Surface Water Present? Very Seaturation Present? Yellog Saturation Present?	magery (B7) Surface (B8) es No _ es No _	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leave 1, 2, 4A, a t (B11) avertebrates Sulfide Oc Rhizospher of Reduce on Reduction stressed splain in Re anches):	s (B13) dor (C1) res along d Iron (C4) on in Tille Plants (Demarks)	Living Roo	ots (C3)	Water-S 4A, a Drainage Dry-Sea Saturatie Geomor Shallow FAC-Ne Raised Frost-He	tained Leavend 4B) e Patterns (son Water on Visible of the Position Aquitard (Aquitard (Ant Mounds over Humm	wes (B9) (M (B10) Table (C2) In Aerial Image (D2) (D3) (D5) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C)	LRA 1, 2
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on 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 In Sparsely Vegetated Concave Field Observations: Surface Water Present? Yee Saturation Present? Yee Saturation Present? Yee includes capillary fringe) Describe Recorded Data (stream of the surface water and the saturation Present)	magery (B7) Surface (B8) es No _ es No _	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leave 1, 2, 4A, a t (B11) avertebrates Sulfide Oc Rhizospher of Reduce on Reduction stressed splain in Re anches):	s (B13) dor (C1) res along d Iron (C4) on in Tille Plants (Demarks)	Living Roo	ots (C3)	Water-S 4A, a Drainage Dry-Sea Saturatie Geomor Shallow FAC-Ne Raised Frost-He	tained Leavend 4B) e Patterns (son Water on Visible of the Position Aquitard (Aquitard (Ant Mounds over Humm	wes (B9) (M (B10) Table (C2) In Aerial Image (D2) (D3) (D5) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C)	LRA 1, 2
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of on 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 In Sparsely Vegetated Concave Field Observations: Surface Water Present? Yee Saturation Present? Yee Saturation Present? Yee includes capillary fringe)	magery (B7) Surface (B8) es No _ es No _	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leave 1, 2, 4A, a t (B11) avertebrates Sulfide Oc Rhizospher of Reduce on Reduction stressed splain in Re anches):	s (B13) dor (C1) res along d Iron (C4) on in Tille Plants (Demarks)	Living Roo l) d Soils (C6 1) (LRR A	ots (C3)	Water-S 4A, a Drainage Dry-Sea Saturatie Geomor Shallow FAC-Ne Raised Frost-He	tained Leavend 4B) e Patterns (son Water on Visible of the Position Aquitard (Aquitard (Ant Mounds over Humm	wes (B9) (M (B10) Table (C2) In Aerial Image (D2) (D3) (D5) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C)	LRA 1, 2
YDROLOGY Netland Hydrology Indicators: Primary Indicators (minimum of on 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 In Sparsely Vegetated Concave Field Observations: Surface Water Present? Yew	magery (B7) Surface (B8) es No _ es No _	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leave 1, 2, 4A, a t (B11) avertebrates Sulfide Oc Rhizospher of Reduce on Reduction stressed splain in Re anches):	s (B13) dor (C1) res along d Iron (C4) on in Tille Plants (Demarks)	Living Roo l) d Soils (C6 1) (LRR A	ots (C3)	Water-S 4A, a Drainage Dry-Sea Saturatie Geomor Shallow FAC-Ne Raised Frost-He	tained Leavend 4B) e Patterns (son Water on Visible of the Position Aquitard (Aquitard (Ant Mounds over Humm	wes (B9) (M (B10) Table (C2) In Aerial Image (D2) (D3) (D5) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C)	LRA 1, 2

(0	7		17
1		1	1	
Cor	sulti	ng E	ngin	eers

Project/Site: Foster Avenue	City	/County: Humboldi		Sampling Date: 12/19/17
Applicant/Owner: Arcata Land COc			State: CA	Sampling Point: TPU
Investigator(s): Cindy Wilcox & Greg OConnell	Sec			
Landform (hillslope, terrace, etc.):				
Subregion (LRR): A, MLRA 4B	Lat: 40.	8819310	Long: -124, 100	115° Datum: Hrunbola
Soil Map Unit Name: Jolly giant 0-3	20/0		NWI classific	eation: PEMID
Are climatic / hydrologic conditions on the site typical for				
Are Vegetation, Soil, or Hydrology				present? Yes X No
Are Vegetation, Soil, or Hydrology			·	
SUMMARY OF FINDINGS – Attach site ma			eeded, explain any answe	,
Hydrophytic Vegetation Present? Yes		 	,	,
Hydric Soil Present? Yes		is the Sampled		
Wetland Hydrology Present? Yes		within a Wetlar	nd? Yes	No
Remarks:		-		
VEGETATION – Use scientific names of pl	ants.			
Tree Stratum (Plot size: 36-C)	53/5/BG E II	ominant Indicator	Dominance Test work	sheet:
1	% Cover St	ecies? Status	Number of Dominant Sp That Are OBL, FACW, of	· · · · · · · · · · · · · · · · · · ·
2			I IIIat Ale OBL, FACVI, t	or FAC:(A)
3.			Total Number of Domin Species Across All Stra	,
4.				
Sapling/Shrub Stratum (Plot size: 5 C)	= T	otal Cover	Percent of Dominant Sp That Are OBL, FACW, of	or FAC: (A/B)
1,			Prevalence Index work	
2			Total % Cover of:	
3				x1=
4				x 2 = x 3 =
5				x 3 = x 4 =
Herb Stratum (Plot size:	=T	otal Cover		x 4 x 5 =
1. Jun (45 Dotens	2 1) FACW		(A) (B)
2. Plantaro laveelata	- 16 -	y FACU	Ĭ.	
3 Tri follow repens	10	N EAC	Prevalence Index	
4 Rumer Crisos	-5	N FAC	Hydrophytic Vegetation	lydrophytic Vegetation
5 Recinia partines	55	Y FAC	2 - Dominance Tes	1.0000470004
6. In tolium (borseam)	_5_1) Nic-	3 - Prevalence Inde	
7 ofter unk prosses XX	_ 15	N K	S	daptations ¹ (Provide supporting
8			data in Remarks	or on a separate sheet)
9			5 - Wetland Non-Va	
10				phytic Vegetation¹ (Explain)
11.			Indicators of hydric soil be present, unless distu	and wetland hydrology must
Woody Vine Stratum (Plot size:	= To	otal Cover	so present, uniess distu	nued of problematic.
1,				
2.			Hydrophytic Vegetation	V
	. 6 = т	otal Cover		No
% Bare Ground in Herb Stratum O COO PREV	holes)	00101		
Remarks: ** Not identifiable @ f	his Lines	I year.		
Lat. May 100 1	III) TINE D	Je .		

mpling Point: Too Consulting Engineer & Geologists, Inc.

Depth	Matrix		oth needed to docum Redox	Feature	s					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc2	Texture		Remarks	
0-20	104R 3/1	100		2			SiL			
0 -01			and HII	-7	0	01	SICL	hale	14 - 21 2	1
11-31	1048 300/1	94	54R 416	le	RM	PL	DILL	. BEYL	veen 3/1 à 21	1
	8.6	·—	(i				*	-):		
	0	+OHP1								
	,,	1 the c					-		2 X	
	-		· · · · · · · · · · · · · · · · · · ·					8 1		
Type: C=C		lotion DM	=Reduced Matrix, CS	-Covere	d or Coate		raine ² I	ocation: P	L=Pore Lining, M=Ma	atriv
			LRRs, unless other			o Garia Gi			oblematic Hydric S	
-		2D10 10 UII			,			cm Muck (A	-	
Histosol			Sandy Redox (S						Material (TF2)	
	oipedon (A2)		Stripped Matrix (4) /awaan	SEL DA 4				`
Black Hi			Loamy Mucky M			(MLKA 1)		•	Dark Surface (TF12)
	n Sulfide (A4)		Loamy Gleyed M		2)		_ 0	ither (Explai	n in Remarks)	
Depleted	d Below Dark Surfac	e (A11)	Depleted Matrix				3			
Thick Da	ark Surface (A12)		Redox Dark Surf	face (F6))				rophytic vegetation a	
Sandy M	lucky Mineral (S1)		Depleted Dark S	urface (f	- 7)			-	logy must be present	,
Sandy G	Gleyed Matrix (S4)		Redox Depression	ons (F8)			un	less disturb	ed or problematic.	
Restrictive I	Layer (If present):									
Туре:										
Depth (in	ches):						Hydric S	oil Present	? Yes N	o
							,			
Remarks:						Ć4	.,,			
Remarks:	GY					(4	1,7			
YDROLO	GY drology Indicators:					Ót.				
YDROLO	drology Indicators:		ed; check all that apply)		а			icators (2 or more re	quired)
YDROLO Wetland Hydrimary India	drology Indicators: cators (minimum of o				res (BQ) (e	excent		condary Ind	icators (2 or more re	
YDROLO Wetland Hydromary India Surface	drology Indicators: cators (minimum of o Water (A1)		Water-Stair	ned Leav		xcept		condary Ind Water-Sta	ined Leaves (B9) (Mi	
YDROLO Wetland Hy Primary Indic Surface High Wa	drology Indicators: cators (minimum of o Water (A1) ater Table (A2)		Water-Stair MLRA 1	ned Leav		except		condary Ind Water-Sta 4A, and	ined Leaves (B9) (MI d 4B)	
YDROLO Wetland Hyo Primary India Surface High Wa Saturatia	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3)		Water-Stair MLRA 1 Salt Crust (ned Leav , 2, 4A , B11)	and 4B)	xcept		condary Ind Water-Sta 4A, an Drainage I	ined Leaves (B9) (M l d 4B) Patterns (B10)	
YDROLO Wetland Hy Primary India Surface High Wa Saturatia	drology Indicators: cators (minimum of o Water (A1) ater Table (A2)		Water-Stair MLRA 1 Salt Crust (Aquatic Inv	ned Leav , 2, 4A , B11) ertebrate	and 4B)	xcept		condary Ind Water-Sta 4A, an Drainage I	ined Leaves (B9) (MI d 4B)	
YDROLO Vetland Hydromary India Surface High Wa Saturatia Water M	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3)		Water-Stair MLRA 1 Salt Crust (ned Leav , 2, 4A , B11) ertebrate	and 4B)	жсөрt		condary Ind Water-Sta 4A, an Drainage I Dry-Seasc	ined Leaves (B9) (M l d 4B) Patterns (B10)	LRA 1, 2,
YDROLO Wetland Hydromary India Surface High Wa Saturatia Water M Sedimer	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1)		Water-Stair MLRA 1 Salt Crust (Aquatic Inv	ned Leav , 2, 4A , B11) ertebrate Sulfide O	and 4B) es (B13) edor (C1)		Se	condary Ind Water-Sta 4A, an Drainage I Dry-Seaso Saturation	ined Leaves (B9) (M l d 4B) Patterns (B10) on Water Table (C2)	LRA 1, 2,
YDROLO Wetland Hydelight Surface High Water Mater Mater Mater Mater Drift Dep	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)		Water-Stair MLRA 1 Salt Crust (Aquatic Inv	ned Leav , 2, 4A , B11) ertebrate Sulfide O hizosphe	and 4B) es (B13) dor (C1) eres along	Living Roo	Se	condary Ind Water-Sta 4A, and Drainage I Dry-Seaso Saturation Geomorph	ined Leaves (B9) (Mi d 4B) Patterns (B10) on Water Table (C2) Visible on Aerial Ima	LRA 1, 2,
YDROLO Netland Hydromary Indice Surface High Wa Saturatic Water M Sedimer Drift Dep	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		Water-Stair MLRA 1 Salt Crust (Aquatic Inv. Hydrogen S Oxidized Ri	ned Leav , 2, 4A, B11) ertebrate Sulfide O hizosphe	es (B13) dor (C1) eres along ed Iron (C	Living Roo 4)	Se	condary Ind Water-Sta 4A, and Drainage I Dry-Seaso Saturation Geomorph Shallow A	ined Leaves (B9) (Mil d 4B) Patterns (B10) on Water Table (C2) Visible on Aerial Ima nic Position (D2) quitard (D3)	LRA 1, 2,
YDROLO Netland Hy Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5)		Water-Stair MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Oxidized Ri Presence o Recent Iror	ned Leaven, 2, 4A, 1811) ertebrate Sulfide O hizosphe f Reduce	es (B13) dor (C1) eres along ed Iron (C ion in Tille	Living Roo 4) d Soils (C6	<u>Se</u>	condary Ind Water-Sta 4A, and Drainage I Dry-Seaso Saturation Geomorph Shallow A	ined Leaves (B9) (MI d 4B) Patterns (B10) on Water Table (C2) Visible on Aerial Ima aic Position (D2) quitard (D3) ral Test (D5)	LRA 1, 2,
YDROLO Wetland Hy Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6)	ne require	Water-Stair MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Oxidized Ri Presence o Recent Iror	ned Leav , 2, 4A , B11) ertebrate Sulfide O hizosphe of Reduct Stressec	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D	Living Roo 4) d Soils (C6	<u>Se</u>	condary Ind Water-Sta 4A, and Drainage I Dry-Seaso Saturation Geomorph Shallow Additional FAC-Neut Raised An	ined Leaves (B9) (Mid 4B) Patterns (B10) on Water Table (C2) Visible on Aerial Imagic Position (D2) quitard (D3) ral Test (D5)	LRA 1, 2,
YDROLO Vetland Hyver Surface High Water Management Sediment Drift Dep Algal Management Iron Dep Surface Inundati	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial	ne require	Water-Stair MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Oxidized RI Presence o Recent Iror Stunted or (37) OWNER A 1	ned Leav , 2, 4A , B11) ertebrate Sulfide O hizosphe of Reduct Stressec	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D	Living Roo 4) d Soils (C6	<u>Se</u>	condary Ind Water-Sta 4A, and Drainage I Dry-Seaso Saturation Geomorph Shallow Additional FAC-Neut Raised An	ined Leaves (B9) (MI d 4B) Patterns (B10) on Water Table (C2) Visible on Aerial Ima aic Position (D2) quitard (D3) ral Test (D5)	LRA 1, 2,
YDROLO Netland Hyde Surface High Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial I y Vegetated Concave	ne require	Water-Stair MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Oxidized RI Presence o Recent Iror Stunted or (37) OWNER A 1	ned Leav , 2, 4A , B11) ertebrate Sulfide O hizosphe of Reduct Stressec	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D	Living Roo 4) d Soils (C6	<u>Se</u>	condary Ind Water-Sta 4A, and Drainage I Dry-Seaso Saturation Geomorph Shallow Additional FAC-Neut Raised An	ined Leaves (B9) (Mid 4B) Patterns (B10) on Water Table (C2) Visible on Aerial Imagic Position (D2) quitard (D3) ral Test (D5)	LRA 1, 2,
YDROLO Netland Hydromary Indice Surface High Water M Sedimer Drift Der Algal Material Iron Der Surface Inundati Sparsely Field Obser	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial I y Vegetated Concave vations:	ne require	Water-Stair MLRA 1 Salt Crust (Aquatic Inv. Hydrogen S Oxidized RI Presence o Recent Iror Stunted or : Other (Expl	ned Leav , 2, 4A, B11) ertebrate Sulfide O hizosphe if Reduct Reduct Stressed Jain in Re	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D	Living Roo 4) d Soils (C6	<u>Se</u>	condary Ind Water-Sta 4A, and Drainage I Dry-Seaso Saturation Geomorph Shallow Additional FAC-Neut Raised An	ined Leaves (B9) (Mid 4B) Patterns (B10) on Water Table (C2) Visible on Aerial Imagic Position (D2) quitard (D3) ral Test (D5)	LRA 1, 2,
YDROLO Netland Hy Primary India Surface High Wa Saturati Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser	drology Indicators: cators (minimum of	magery (Ee Surface	Water-Stair MLRA 1 Salt Crust (Aquatic Inv. Hydrogen S Oxidized R Presence o Recent Iror Stunted or S Other (Expl.)	ned Leav., 2, 4A, B11) ertebrate Sulfide O hizosphe of Reduct Reduct Stressed lain in Re	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D	Living Roo 4) d Soils (C6	<u>Se</u>	condary Ind Water-Sta 4A, and Drainage I Dry-Seaso Saturation Geomorph Shallow Additional FAC-Neut Raised An	ined Leaves (B9) (MI d 4B) Patterns (B10) on Water Table (C2) Visible on Aerial Ima nic Position (D2) quitard (D3) ral Test (D5) Mo	LRA 1, 2,
YDROLO Wetland Hyver Indice Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial of Vegetated Concave vations: er Present? Y	magery (Ee Surface	Water-Stair MLRA 1 Salt Crust (Aquatic Inv. Hydrogen S Oxidized RI Presence o Recent Iror Stunted or S Other (Expl.) No Depth (inc.)	ned Leav., 2, 4A, B11) ertebrate Sulfide O hizosphe of Reduct n Reduct Stressed ain in Re hes): hes):	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D	Living Roo 4) d Soils (Co 1) (LRR A	Sei	condary Ind Water-Sta 4A, and Drainage I Dry-Seasc Saturation Geomorph Shallow Ad FAC-Neut Raised An	ined Leaves (B9) (Mid 4B) Patterns (B10) on Water Table (C2) Visible on Aerial Imagic Position (D2) quitard (D3) ral Test (D5) Mounds (D6) (LRR ve Hummocks (D7)	A)
YDROLO Netland Hyverimacy Indice Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obsert Surface Water Table Saturation P	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1) ont Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial I y Vegetated Concave vations: er Present? Y Present? Y	magery (Ee Surface	Water-Stair MLRA 1 Salt Crust (Aquatic Inv. Hydrogen S Oxidized R Presence o Recent Iror Stunted or S Other (Expl.)	ned Leav., 2, 4A, B11) ertebrate Sulfide O hizosphe of Reduct n Reduct Stressed ain in Re hes): hes):	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D	Living Roo 4) d Soils (Co 1) (LRR A	Sei	condary Ind Water-Sta 4A, and Drainage I Dry-Seasc Saturation Geomorph Shallow Ad FAC-Neut Raised An	ined Leaves (B9) (Mid 4B) Patterns (B10) on Water Table (C2) Visible on Aerial Imagic Position (D2) quitard (D3) ral Test (D5) Mounds (D6) (LRR ve Hummocks (D7)	LRA 1, 2,
YDROLO Netland Hy Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Wat Nater Table Saturation P Includes cal	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial i y Vegetated Concave vations: er Present? Present? Y resent? Y resent? Y	magery (Ee Surface (es	Water-Stair MLRA 1 Salt Crust (Aquatic Inv. Hydrogen S Oxidized RI Presence o Recent Iror Stunted or S Other (Expl.) No Depth (inc.)	ned Leav., 2, 4A, B11) ertebrate Sulfide O hizosphe of Reduct n Reduct Stressed lain in Re hes): hes): hes):	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D emarks)	Living Roo 4) d Soils (Ce 01) (LRR A	Se S	condary Ind Water-Sta 4A, and Drainage I Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neut Raised An Frost-Hea	ined Leaves (B9) (Mid 4B) Patterns (B10) on Water Table (C2) Visible on Aerial Imagic Position (D2) quitard (D3) ral Test (D5) Mounds (D6) (LRR ve Hummocks (D7)	A)
YDROLO Netland Hy Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Wat Nater Table Saturation P Includes cal	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial i y Vegetated Concave vations: er Present? Present? Y resent? Y resent? Y	magery (Ee Surface (es	Water-Stair MLRA 1 Salt Crust (Aquatic Inv. Hydrogen S Oxidized RI Presence o Recent Iror Stunted or S Other (Expl.) No Depth (inc.) Depth (inc.)	ned Leav., 2, 4A, B11) ertebrate Sulfide O hizosphe of Reduct n Reduct Stressed lain in Re hes): hes): hes):	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D emarks)	Living Roo 4) d Soils (Ce 01) (LRR A	Se S	condary Ind Water-Sta 4A, and Drainage I Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neut Raised An Frost-Hea	ined Leaves (B9) (MI d 4B) Patterns (B10) on Water Table (C2) Visible on Aerial Ima nic Position (D2) quitard (D3) ral Test (D5) t Mounds (D6) (LRR ve Hummocks (D7)	A)
YDROLO Netland Hyder Surface High Water M Sedimer Drift Dep Algal Mater Model Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation P includes cal Describe Re	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial i y Vegetated Concave vations: er Present? Present? Y resent? Y resent? Y	magery (Ee Surface (es	Water-Stair MLRA 1 Salt Crust (Aquatic Inv. Hydrogen S Oxidized RI Presence o Recent Iror Stunted or S Other (Expl.) No Depth (inc.) Depth (inc.)	ned Leav., 2, 4A, B11) ertebrate Sulfide O hizosphe of Reduct n Reduct Stressed lain in Re hes): hes): hes):	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D emarks)	Living Roo 4) d Soils (Ce 01) (LRR A	Se S	condary Ind Water-Sta 4A, and Drainage I Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neut Raised An Frost-Hea	ined Leaves (B9) (MI d 4B) Patterns (B10) on Water Table (C2) Visible on Aerial Ima nic Position (D2) quitard (D3) ral Test (D5) t Mounds (D6) (LRR ve Hummocks (D7)	A)
YDROLO Netland Hyder Surface High Water M Sedimer Drift Dep Algal Mater Model Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation P includes cal Describe Re	drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial i y Vegetated Concave vations: er Present? Present? Y resent? Y resent? Y	magery (Ee Surface (es	Water-Stair MLRA 1 Salt Crust (Aquatic Inv. Hydrogen S Oxidized RI Presence o Recent Iror Stunted or S Other (Expl.) No Depth (inc.) Depth (inc.)	ned Leav., 2, 4A, B11) ertebrate Sulfide O hizosphe of Reduct n Reduct Stressed lain in Re hes): hes): hes):	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D emarks)	Living Roo 4) d Soils (Ce 01) (LRR A	Se S	condary Ind Water-Sta 4A, and Drainage I Dry-Seaso Saturation Geomorph Shallow Ad FAC-Neut Raised An Frost-Hea	ined Leaves (B9) (MI d 4B) Patterns (B10) on Water Table (C2) Visible on Aerial Ima nic Position (D2) quitard (D3) ral Test (D5) t Mounds (D6) (LRR ve Hummocks (D7)	LRA 1, 2,

(T)	7
27	1
Consulting En	gineers
& Contraists	Inc

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

Geologists, Inc.	l lumba	12/19/
Project/Site: Foster Avenue	City/County: Humbo	Sampling Date:
Applicant/Owner: Arcata Land Co.		State: CA Sampling Point: TPIDU
Investigator(s): Cindy Wilcox & Greg OConnell	Section, Township, F	
Landform (hillslope, terrace, etc.):	Local relief (concave	e, convex, none): More Slope (%): 1-2
Subregion (LRR): A, MLRA 4B	Lat: 40.984867	Long:124.103.819 Datum: Humbo
Landform (hillslope, terrace, etc.):	2%	NWI classification: PEMID
Are climatic / hydrologic conditions on the site typical fo	r this time of year? Yes X	(If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology	significantly disturbed? Ar	e "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrology		needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site m		t locations, transects, important features, etc
Hydrophytic Vegetation Present? Yes	No	,
Hydric Soil Present? Yes	No lis the Sample	
Wetland Hydrology Present? Yes	No within a Wetl	and res NO
Remarks: Grading in this area i		
/EGETATION – Use scientific names of p		- Dominara Tastanada ta
Tree Stratum (Plot size: 30(1)	Absolute Dominant Indicator <u>% Cover Species? Status</u>	4
1		Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2		Total Number of Dominant
3		Species Across All Strata: (B)
4	= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
Sapling/Shrub Stratum (Plot size:	,	Prevalence Index worksheet:
1		Total % Cover of: Multiply by:
2		OBL species x 1 =
3		FACW species x 2 =
5		FAC species x 3 =
= 0	= Total Cover	FACU species x 4 =
Herb Stratum (Plot size:)	= Total Cover	UPL species x 5 =
1. Festuce perennis	_ DD Y FAL	_ Column Totals: (A) (B)
2. Gergnium Molle	20 Y: DL	Prevalence Index = B/A =
3. Triblism regens	TE N FAC	Hydrophytic Vegetation Indicators:
4. Iritolium sp. (herseen dove	10 N M	1 - Rapid Test for Hydrophytic Vegetation
5. Kumex orispus	FAC	2 - Dominance Test is >50%
6. Dipsocus tulanum	- S P FAC	3 - Prevalence Index is ≤3.0¹
7. Plantago Mayor	- S P FAC	 4 - Morphological Adaptations¹ (Provide supporting
8 unkn. gresses xx	<u> </u>	data in Remarks or on a separate sheet)
9		5 - Wetland Non-Vascular Plants'
10		Problematic Hydrophytic Vegetation¹ (Explain)
11		Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:	= Total Cover	
1		Hydrophytic
2.		- Hydrophytic Vegetation
	= Total Cover	Present? Yes No
% Bare Ground in Herb Stratum		
Remarks: XX not identified the	is time of new.	
	8	

•	\sim	
	CΠ	ш

Consulting Engineers

TP/D V& Geologists, Inc.

Depth <u>Matri</u>		Redox Features	Z
(inches) Color (moist)	7	Color (moist) % Type ¹ Loc	Z Texture Remarks
0-21 10 AICX	100	<i>1</i> 0	
11-24 16 XR 3/2	7 100	Ø	SCL
1010	-1 1		
10			2.
		Reduced Matrix, CS=Covered or Coated San	d Grains. ² Location: PL=Pore Lining, M=Matrix
lydric Soil Indicators: (Ap _l	olicable to all L	RRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils
Histosol (A1)	_	Sandy Redox (S5)	2 cm Muck (A10)
Histic Epipedon (A2)	_	Stripped Matrix (S6)	Red Parent Material (TF2)
Black Histic (A3)	_	Loamy Mucky Mineral (F1) (except MLR	A 1) Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)	_	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Depleted Below Dark Sur	face (A11)	Depleted Matrix (F3)	
Thick Dark Surface (A12)	_	Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1	1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4	-	Redox Depressions (F8)	unless disturbed or problematic.
Restrictive Layer (if present			
Type:			a
• • • • • • • • • • • • • • • • • • • •			11 -1-1- 0-11 D10 - V No
Depth (inches):			Hydric Soil Present? Yes No _
Remarks:	rounded	gravel	
	rounded	gravel	
YDROLOGY		graxel	
YDROLOGY Wetland Hydrology Indicato	ors:		Secondary Indicators (2 or more require
YDROLOGY Vetland Hydrology Indicator	ors:	check all that apply)	
YDROLOGY Vetland Hydrology Indicato Primary Indicators (minimum Surface Water (A1)	ors:	check all that apply) Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA
YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2)	ors:	check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	Water-Stained Leaves (B9) (MLRA 4A, and 4B)
YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3)	ors:	check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10)
YDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	ors:	check all that apply) Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	ors:	check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	 Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imager
YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	ors:	check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	ors:	check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table*(C2) Saturation Visible on Aerial Imager Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	ors:	check all that apply) 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 Presence of Reduced Iron (C4)	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table*(C2) Saturation Visible on Aerial Imager Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum 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)	ors:	check all that apply) 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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table*(C2) Saturation Visible on Aerial Imager Roots (C3) Geomorphic Position.(D2) Shallow Aquitard (D3) (C6) FAC-Neutral Test (D5)
YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum 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)	o rs: of one required;	check all that apply) 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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LR	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table*(C2) Saturation Visible on Aerial Imager Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RA) Raised Ant Mounds (D6) (LRR A)
YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum 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 Aer	ors: of one required;	check all that apply) 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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LR	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table*(C2) Saturation Visible on Aerial Imager Roots (C3) Geomorphic Position.(D2) Shallow Aquitard (D3) (C6) FAC-Neutral Test (D5)
YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum 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 Aer Sparsely Vegetated Cond	ors: of one required;	check all that apply) 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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LR	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table*(C2) Saturation Visible on Aerial Imager Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RA) Raised Ant Mounds (D6) (LRR A)
YDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum 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 Aer Sparsely Vegetated Conditions:	ors: of one required; ial Imagery (87) cave Surface (8	check all that apply) 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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LR Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table*(C2) Saturation Visible on Aerial Imager Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RA) Raised Ant Mounds (D6) (LRR A)
YDROLOGY Netland Hydrology Indicator Primary Indicators (minimum 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 Aer Sparsely Vegetated Conditions:	ors: of one required; ial Imagery (B7; cave Surface (B	check all that apply) 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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LR Other (Explain in Remarks) Depth (inches):	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table*(C2) Saturation Visible on Aerial Imager Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RA) Raised Ant Mounds (D6) (LRR A)
YDROLOGY Netland Hydrology Indicator Primary Indicators (minimum 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 Aer	ors: of one required; ial Imagery (B7; cave Surface (B	check all that apply) 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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LR Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table*(C2) Saturation Visible on Aerial Imager Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RA) Raised Ant Mounds (D6) (LRR A)
VDROLOGY Netland Hydrology Indicator Primary Indicators (minimum 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 Aer Sparsely Vegetated Conditional Conditions: Surface Water Present?	ial Imagery (B7) cave Surface (B	Check all that apply) 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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LR Other (Explain in Remarks) Depth (inches):	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table*(C2) Saturation Visible on Aerial Imager Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RA) Raised Ant Mounds (D6) (LRR A)
VDROLOGY Netland Hydrology Indicator Primary Indicators (minimum 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 Aer Sparsely Vegetated Concertication Field Observations: Surface Water Present? Nater Table Present? Saturation Present? Saturation Present? Sincludes capillary fringe)	ial Imagery (B7) cave Surface (B Yes N Yes N	Check all that apply) 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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LR Other (Explain in Remarks) Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table* (C2) Saturation Visible on Aerial Imager Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RA) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Vetland Hydrology Indicator Primary Indicators (minimum 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 Aer Sparsely Vegetated Conditional Conditio	ial Imagery (B7) cave Surface (B Yes N Yes N	check all that apply) 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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LR Other (Explain in Remarks) Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table* (C2) Saturation Visible on Aerial Imager Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RA) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
VDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum 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 Aer Sparsely Vegetated Conditions: Surface Water Present? Nater Table Present? Saturation Present? Saturation Present? includes capillary fringe) Describe Recorded Data (streen	ial Imagery (B7) cave Surface (B Yes N Yes N	Check all that apply) 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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LR Other (Explain in Remarks) Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table* (C2) Saturation Visible on Aerial Imager Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RA) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
VDROLOGY Vetland Hydrology Indicator Primary Indicators (minimum 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 Aer Sparsely Vegetated Conditions: Surface Water Present? Nater Table Present? Saturation Present? Saturation Present? includes capillary fringe) Describe Recorded Data (streen	ial Imagery (B7) cave Surface (B Yes N Yes N	Check all that apply) 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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LR Other (Explain in Remarks) Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table* (C2) Saturation Visible on Aerial Imager Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RA) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
VDROLOGY Netland Hydrology Indicator Primary Indicators (minimum 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 Aer Sparsely Vegetated Concertication Field Observations: Surface Water Present? Nater Table Present? Saturation Present? Saturation Present? Sincludes capillary fringe)	ial Imagery (B7) cave Surface (B Yes N Yes N	Check all that apply) 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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LR Other (Explain in Remarks) Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table* (C2) Saturation Visible on Aerial Imager Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RA) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)



Consulting Engineers & Geologists, Inc. WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Foster Avenue	Citv/0	County: Humboldt		_ Sampling Date: 121	19/17
Applicant/Owner: Arcata Land Co.				_ Sampling Point: TP I	
Investigator(s): Cindy Wilcox & Greg OConnell	Secti	on Township Ra			
			convex, none):		3-4
Subregion (LRR): A, MLRA 4B	Lat: 40.	996768°	Long: -124.103	398° Datum:	
Soil Map Unit Name: Jolygiant 6-2-12	>		NWI classif	fication: PEM ID	
Are climatic / hydrologic conditions on the site typical for this	s time of year? Y	′es <u> </u>	(If no, explain in	Remarks.)	
Are Vegetation, Soil, or Hydrologys	significantly distur	bed? Are "	'Normal Circumstances'	present? Yes X	o
Are Vegetation, Soil, or Hydrology r	naturally problem	atic? (If ne	eded, explain any answ	vers in Remarks.)	
SUMMARY OF FINDINGS - Attach site map	showing san	npling point le	ocations, transect	s, important features	s, etc.
Hydrophytic Vegetation Present? Yes N	0	(4)			
Hydric Soil Present? Yes N		Is the Sampled		No 🗸	
Wetland Hydrology Present? Yes N	0	within a Wetlar	id? Yes	NO <u>V</u>	
Remarks:					
VEGETATION – Use scientific names of plan	ts.			7	
2.0	Absolute Don	ninant Indicator	Dominance Test wor	rksheet:	
Tree Stratum (Plot size:	% Cover Spe	cies? Status	Number of Dominant	Species /	
1. ————————————————————————————————————			That Are OBL, FACW	, or FAC:	(A)
			Total Number of Dom		
3,			Species Across All St	rata:	(B)
Sapling/Shrub Stratum (Plot size: 5	<u>Ø</u> = To	tal Cover	Percent of Dominant S That Are OBL, FACW		(A/B)
1.			Prevalence Index wo	orksheet:	
2	3)		Total % Cover of:	Multiply by:	-:
3.			OBL species	x 1 =	_
4			FACW species	x 2 =	-
5	3	· · · · · · · · · · · · · · · · · · ·		x 3 =	
E N	Ø = To	tal Cover		x 4 =	22
Herb Stratum (Plot size:	-	. En (x 5 =	
1 testuce perenni)	· 72 ->		Column Totals:	(A)	- ^(B)
2 Geronium Molle	15 L		Prevalence Inde	x = B/A =	
3. Tritolom repens	15 1	FAC	Hydrophytic Vegetat		
5. Dipsecus fulonum	-	O FAC		Hydrophytic Vegetation	
6. Pimex Crisphs	<u> </u>	V FAC	2 - Dominance Te		
7. Unkin Orgsics XX	10		3 - Prevalence inc		
8.				Adaptations ¹ (Provide supp ks or on a separate sheet)	porting
9			5 - Wetland Non-	Vascular Plants ¹	
10			Problematic Hydro	ophytic Vegetation ¹ (Explain	n)
11				oil and wetland hydrology m	nust
Woody Vine Stratum (Plot size: 5 47)	107 = Tot	al Cover	be present, unless dis	turbed or problematic.	
1 Plot size: 5 (
2.			Hydrophytic Vegetation		
24	= Tot	al Cover	l _ •	es No	
% Bare Ground in Herb Stratum	7 100				
Remarks:	1. 1.	0			
* not identifiable of	mis time	Of ye	9		
		9	, i		



Profile Description: (I	Describe to t	ne depth	needed to docur	nent the i	ndicator	or confirm	the absen	ce of indicators.)
Depth	Matrix			x Features				
(inches) Color (%	Color (moist)	%	Type ¹	Loc2	Texture	Remarks
0-3 104R	3/11	00	Ø				CF	
3-19 10YR	3/2	6D	Ø				SICL	
19-14 10 VR	3/2	00	Ø				SiLL	looser material
1-21-0011	1							
								
		11						
¹Type: C=Concentratio	n D=Denletic	n RM=Re	educed Matrix CS	S=Covered	or Coate	d Sand Gra	ains. 21	ocation: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators								ators for Problematic Hydric Solls ³ :
Histosol (A1)			Sandy Redox (2	cm Muck (A10)
Histic Epipedon (A2	2)		Stripped Matrix				R	ed Parent Material (TF2)
Black Histic (A3)	•	_	Loamy Mucky M			MLRA 1)		ery Shallow Dark Surface (TF12)
Hydrogen Sulfide (A	44)	_	_ Loamy Gleyed	Måtrix (F2))		_ 0	ther (Explain in Remarks)
Depleted Below Da	rk Surface (A	.11)	_ Depleted Matrix				•	
Thick Dark Surface		_	_ Redox Dark Su					ators of hydrophytic vegetation and
Sandy Mucky Mine			_ Depleted Dark		7)			tland hydrology must be present,
Sandy Gleyed Mati		_	_ Redox Depress	ions (F8)			un.	less disturbed or problematic.
Restrictive Layer (if p	esent):							
Type:			_				Undria C	oil Present? Yes No
Depth (inches):							nyuric 3	Oli Plesentr Tes NO
Remarks:								
-								
HYDROLOGY								
	diagtamı							
Wetland Hydrology In		o a uisa du li	hook all that appl				Sa	condary Indicators (2 or more required)
Primary Indicators (min		equirea; c			(DO) (
Surface Water (A1)			Water-Sta			хсөрт	_	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)			1, 2, 4A, a	ina 4B)			4A, and 4B)
Saturation (A3)		*	Salt Crust		- (D40)		_	Drainage Patterns (B10)
Water Marks (B1)	(20)		Aquatic In				_	Dry-Season Water Table (C2)
Sediment Deposits	(B2)		Hydrogen					Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)				-	, -	Living Roo		Geomorphic Position (D2)
Algal Mat or Crust	(B4)		Presence		,			Shallow Aquitard (D3)
Iron Deposits (B5)						d Soils (C6		FAC-Neutral Test (D5) NO
Surface Soil Crack	• •	(D.T.)	_		•	1) (LRR A)	_	Raised Ant Mounds (D6) (LRR A)
Inundation Visible			Other (Ex	olain in Re	marks)			Frost-Heave Hummocks (D7)
Sparsely Vegetated	Concave St	пасе (Вв))					
Field Observations:			1/ - "					
Surface Water Present		No	 _ ; ``					
Water Table Present?		No	 ,···	ches):				/
Saturation Present?	-	No	Depth (in	ches):		_ Wetla	and Hydrol	ogy Present? Yes No
(includes capillary fring Describe Recorded Date		uge, monif	toring well, aerial	photos. pr	evious ins	pections).	if available:	
	(3		, ,			. ,.		
Remarks:				_				
								¥
1								
1								

CANA.
CIN_
Consulting Engineers

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

Geologists, Inc.	-		Liverholdt	12/21/1-
	c	ity/County	: Humboldt	
Applicant/Owner: Arcata Land Co.				State: CA Sampling Point: 7 F L W
				nge: S 19&30 T06N R 01E
Landform (hillslope, terrace, etc.):		ocal relie	f (concave, o	convex, none): <u>Covica VC</u> Slope (%): <u>0 - 2</u>
Subregion (LRR): A, MLRA 4B	Lat: _40.8	84508	0	Long: -124.10 44 27 Datum: Humboldt
Soil Map Unit Name: Jollygiant. 0-2%				NWI classification: PEM 1B
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				"Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology				eeded, explain any answers in Remarks.)
				ocations, transects, important features, etc
Hydrophytic Vegetation Present?	No			,
Hydric Soil Present? Yes	No		ne Sampled	
Wetland Hydrology Present? Yes	No		nin a Wetlar	
Remarks: WETS above normal rainfall for Sep	tember thro	ugh Nov	ember 20)17
				The state of the s
VEGETATION – Use scientific names of pla				
Tree Stratum (Plot size: 30 P	Absolute % Cover		Indicator	Dominance Test worksheet:
1 Solx hourises	35	Y.	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2 Montes Cypress	15.	Y¥-	NL	
3.				Total Number of Dominant Species Across All Strata: (B)
4.	=			Percent of Dominant Species 860
50	45	= Total Co	over	That Are OBL, FACW, or FAC:
Sapling/Shrub Stratum (Plot size: 57)	15	V	FAC	Prevalence Index worksheet:
1. Rush Ormenicus	=		TAC	Total % Cover of: Multiply by:
2 3.				OBL species x 1 =
4.				FACW species x 2 =
5.				FAC species x 3 =
<u></u>	-75	= Total Co	over	FACU species x 4 =
Herb Stratum (Plot size:)	25	V	ORL	UPL species x5 =
1 Scirpus niencorpe	10		CVE	Column Totals: (A) (B)
2. Deriontle sormletusa		-7	OBC	Prevalence Index = B/A =
3				Hydrophytic Vegetation Indicators:
4	* CC			1 Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹
7				4 - Morphological Adaptations (Provide supporting
8				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants ¹
10				Problematic Hydrophytic Vegetation ¹ (Explain)
11				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:	35	Total Co	ver	be present, unless distarbed of problematic.
1				Hydrophytic Vegetation
7-	0.	Total Co	ver	Present? Yes No
% Bare Ground in Herb Stratum	~	- TOLAT OU	· · · · · · · · · · · · · · · · · · ·	
Remarks: * excluded from analysis	W. ala	1.1	2000	(Put back in - (1)
* excludes from analysis	21 - 10	me"	becre	of the process of

	5911
Sampling Point:	1P 12W Geologists, Inc.

Profile Desc	cription: (Describe	to the dep	th needed to docur	nent the i	indicator	or confirm	the absence of	of indicators.)
Depth	Matrix			x Feature				1111212
(inches)	Color (moist)	%	Color (moist)		Type ¹	_Loc ² _	Texture	Remarks
0-5	104R 2/2	100					SILL	
15-17	104K3/2	90	54R416	10	Rm	M	SICL	
				10				
				-				
			•					
							. 2	
			Reduced Matrix, CS			d Sand Gra		ation: PL=Pore Lining, M=Matrix. s for Problematic Hydric Soils ³ :
1 -		cable to all	LRRs, unless other		ea.)			· ·
Histosol	• •		Sandy Redox (S					Muck (A10)
	oipedon (A2) stic (A3)		Stripped Matrix Loamy Mucky N	` '	1) (evcen	MI DA 1)		Parent Material (TF2) Shallow Dark Surface (TF12)
	en Sulfide (A4)		Loamy Gleyed	-		micro i)		r (Explain in Remarks)
	d Below Dark Surfa	ce (A11)	Depleted Matrix		•		00	(Explain in Homanic)
	ark Surface (A12)	,	Redox Dark Su		,		3Indicator	s of hydrophytic vegetation and
10/11/04 - 0/15/57	Mucky Mineral (S1)		Depleted Dark	11 TH 11 TH 12 TH 12 TH				nd hydrology must be present,
Sandy G	Sleyed Matrix (S4)		Redox Depress	ions (F8)			unless	disturbed or problematic.
Restrictive I	Layer (if present):							
Type:								/
Depth (inc	ches):						Hydric Soil	Present? Yes V No
Remarks:								
HYDROLO	GY			140				
Wetland Hyd	drology Indicators	:						
Primary Indic	cators (minimum of	one require	t; check all that appl	v)			Secon	dary Indicators (2 or more required)
Surface	Water (A1)		Water-Stai	ined Leav	es (B9) (e	xcept	w	ater-Stained Leaves (B9) (MLRA 1, 2,
High Wa	iter Table (A2)		MLRA	1, 2, 4A, a	and 4B)			4A, and 4B)
✓ Saturation	on (A3)		Salt Crust	(B11)			Dr	ainage Patterns (B10)
Water M	arks (B1)		Aquatic In	vertebrate	s (B13)		Dr	y-Season Water Table (C2)
Sedimer	nt Deposits (B2)		Hydrogen	Sulfide O	dor (C1)		Sa	aturation Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)		Oxidized F	Rhizosphe	res along	Living Roof	ts (C3) 📈 Ge	eomorphic Position (D2)
Algal Ma	it or Crust (B4)		Presence	of Reduce	ed Iron (C4	I)	\$ '	allow Aquitard (D3)
Iron Dep	osits (B5)		Recent Iro	n Reducti	on in Tille	d Soils (C6) <u>1</u> FA	AC-Neutral Test (D5)
Surface	Soil Cracks (B6)		Stunted or	Stressed	Plants (D	1) (LRR A)	Ra	aised Ant Mounds (D6) (LRR A)
_	on Visible on Aerial		<i>,</i> — , ,	olain in Re	emarks)		Fr	ost-Heave Hummocks (D7)
Sparsely	Vegetated Concav	e Surface (B8)					
Field Observ	vations:		/		_			ſ.
Surface Water	er Present?	es	No Depth (inc	ches):				
Water Table	Present?	/es	No Depth (inc	ches):		_		/ il
Saturation Pr (includes cap		/es	No Depth (inc	ches): 15	5-17"	_ Wetla	and Hydrology	Present? Yes No
		gauge, mo	onitoring well, aerial p	ohotos, pr	evious ins	pections), i	if available:	
								(40)
Remarks:					-			

G7	V7
CIL	
Consulting Engir	neers

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

Project/Site: Foster Avenue	O't-10 Humbold	12/21/1
Applicant/Owner: Arcata Land Co.	City/County: Humbold	State: CA Sampling Point: 12/2/1/
Investigator(s): Cindy Wilcox & Greg OConnell	Coeffice Township De	
		convex, none): Slope (%): / >
Subregion (LRR): A, MLRA 4B	Lat: 40.005041	_ Long:124, 168450° Datum: Hvm bal
Soil Map Unit Name: Jolly giant 0-20		NWI classification: PEM ID
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 ne	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site ma	p showing sampling point l	locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes		
Hydric Soil Present? Yes	No ls the Sampled within a Wetla	1/
Wetland Hydrology Present? Yes	NO V	
building.	de ditch we offen	next to Indicatrial
VEGETATION – Use scientific names of pla	ants	
- Cu	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size; 38 +++)	% Cover Species? Status	Number of Dominant Species 7
1. Almus rubre	- ST Y FAC	That Are OBL, FACW, or FAC: (A)
2		Total Number of Dominant
3,		Species Across All Strata: (B)
4		Percent of Dominant Species
Sapling/Shrub Stratum (Plot size:	= Total Cover	That Are OBL, FACW, or FAC: (A/B)
1		Prevalence Index worksheet:
2.		Total % Cover of: Multiply by:
3		OBL species x 1 =
4		FACW species x 2 =
5		FAC species x 3 =
man. C. V	= Total Cover	FACU species x 4 =
Herb Stratum (Plot size:	ST L FA	UPL species x 5 =
1. Festuce perennis	- 05 7 ±AC	Column Totals: (A) (B)
2. Darmin stomerate 3. Halens lenetus	- 35 - Y FACU	Prevalence Index = B/A =
	- 23 X EAC	Hydrophytic Vegetation Indicators:
4. Dipsecus tulonum 5. Conum Meculote	- 30 - 40 - 400	1 - Rapid Test for Hydrophytic Vegetation
6. Junes office	- TO NOTE OF THE PARTY OF THE P	
7. Junius Potens	N PACIN	3 - Prevalence Index is ≤3.0¹
8.	_ S _ FACE	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
9		5 - Wetland Non-Vascular Plants ¹
10		Problematic Hydrophytic Vegetation¹ (Explain)
11.		Indicators of hydric soil and wetland hydrology must
-N	160 = Total Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:	Total Oordi	
1		Hydrophytic
2		Vegetation Present? Yes No
% Bare Ground in Herb Stratum	= Total Cover	Present? Yes No
Remarks:		
that lower		
in a constant		

•	<u> </u>	ı	ı	
3	u	ı	L	

mpling Point: 1713 Consulting Engineers & Geologists, Inc.

Profile Description: (Describe to the Depth Matrix	Redox	Features				
	% Color (moist)	%	Type ¹	_Loc ²	Texture	Remarks
7-2 104R311 10	00				L	
7-23 OYR \$12 7	0				CL	wloravel (nunded)
	5 104R 514	G,			CL	pockets of redox/red. Ma
1011112	17 314			on	V 30 1/20 K	juxta posed w 104R 3/2
						المراس المراس
	<u> </u>					Fill mix
		_				sharp confects
Type: C=Concentration, D=Depletion	n RM=Reduced Matrix CS=	:Covered	or Coate	od Sand Gr	ains ² l (ocation: PL=Pore Lining, M=Matrix.
lydric Soil Indicators: (Applicable				d Odrid On	Indicat	tors for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Redox (S5		·		2 0	em Muck (A10)
Histic Epipedon (A2)	Stripped Matrix (S	-			Re	d Parent Material (TF2)
Black Histic (A3)	Loamy Mucky Mir) (except	MLRA 1)	Ve	ry Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)	Loamy Gleyed Ma	atrix (F2))		Ot	her (Explain in Remarks)
Depleted Below Dark Surface (A1					2	
Thick Dark Surface (A12)	Redox Dark Surfa	٠,,				tors of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Su	-	7)			land hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depressio	ns (F8)			unie	ess disturbed or problematic.
Restrictive Layer (if present):						
Type:					l .	
Depth (inches):						il Present? Yes No
	al notilinsitu	", bu	t bu	vght i		fill. Not hydric form
Remarks: Redox materic in place.	al notilinsitu	", bu	t bre	ughti		
Remarks: Redox materic in place. YDROLOGY Wetland Hydrology Indicators:	75 - 74b		t bn	vght i	mas.	fill. Not hydric formu
Remarks: Redox materic in place. YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one re	equired; check all that apply)				m as	fill. Not hydric forma
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one re Surface Water (A1)	equired; check all that apply) Water-Stain	ed Leave	es (B9) (e		m as	fill, Not hydn'c formal ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1,
Primary Indicators (minimum of one re Surface Water (A1) High Water Table (A2)	equired; check all that apply) Water-Stain MLRA 1,	ed Leave	es (B9) (e		m as	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B)
Primary Indicators (minimum of one re Surface Water (A1) High Water Table (A2) Saturation (A3)	equired; check all that apply) Water-Staine MLRA 1, Salt Crust (E	ed Leave , 2, 4A, a 311)	es (B9) (e and 4B)		m as	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Drainage Patterns (B10)
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one re Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	equired; check all that apply) Water-Stain MLRA 1, Salt Crust (E Aquatic Inve	ed Leave, 2, 4A, a 311)	es (B9) (e and 4B) s (B13)		Sec	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one re Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	equired; check all that apply) Water-Stain MLRA 1, Salt Crust (E Aquatic Inve	ed Leave , 2, 4A, a 311) ertebrates ulfide Od	es (B9) (e and 4B) s (B13) dor (C1)	except	Sec	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C
YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one recommany Indicators (Minimum of one recommany Indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	equired; check all that apply) Water-Staine MLRA 1, Salt Crust (E Aquatic Inve	ed Leave , 2, 4A, a 311) ertebrates ulfide Od	es (B9) (e and 4B) s (B13) dor (C1) res along	except Living Roo	Sec	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C) Geomorphic Position (D2)
Primary Indicators (minimum of one results) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	equired; check all that apply) — Water-Stains MLRA 1, — Salt Crust (E — Aquatic Inve — Hydrogen Solonidized Rh — Presence of	ed Leave, 2, 4A, a 311) ertebrates ulfide Od nizospher	es (B9) (e and 4B) s (B13) dor (C1) res along d Iron (C4	except Living Roo 4)	Sec	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 24A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C) Geomorphic Position (D2) Shallow Aquitard (D3)
Primary Indicators (minimum of one results) 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)	equired; check all that apply) Water-Staine MLRA 1, Salt Crust (E Aquatic Inve	ed Leave, 2, 4A, a 311) ertebrates ulfide Od nizospher f Reduces	es (B9) (e and 4B) s (B13) dor (C1) res along d Iron (C4 on in Tille	Eliving Roo 4) d Soils (C6	Secondary as a s	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C) Geomorphic Position (D2)
Primary Indicators (minimum of one results) 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)	equired; check all that apply) Water-Staine MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or Si	ed Leave, 2, 4A, a 311) ertebrates ulfide Od nizospher f Reduce Reductio	es (B9) (e and 4B) s (B13) for (C1) res along d Iron (C4 on in Tille Plants (D	Eliving Roo 4) d Soils (C6	Secondary as a	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Primary Indicators (minimum of one results) 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)	equired; check all that apply) Water-Staine MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or Si ery (B7) Water-Staine Aquatic Inve Aquatic In	ed Leave, 2, 4A, a 311) ertebrates ulfide Od nizospher f Reduce Reductio	es (B9) (e and 4B) s (B13) for (C1) res along d Iron (C4 on in Tille Plants (D	Eliving Roo 4) d Soils (C6	Secondary as a	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (California) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Primary Indicators: 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 Imag	equired; check all that apply) Water-Staine MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or Si ery (B7) Water-Staine Aquatic Inve Aquatic In	ed Leave, 2, 4A, a 311) ertebrates ulfide Od nizospher f Reduce Reductio	es (B9) (e and 4B) s (B13) for (C1) res along d Iron (C4 on in Tille Plants (D	Eliving Roo 4) d Soils (C6	Secondary as a	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (California) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Primary Indicators (minimum of one results) 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 Imag Sparsely Vegetated Concave Surfield Observations:	equired; check all that apply) Water-Staine MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or Si ery (B7) Other (Explantace (B8)	ed Leave , 2, 4A, a 311) ertebrates ulfide Od nizospher f Reduces Reduction Stressed ain in Res	es (B9) (e and 4B) s (B13) for (C1) res along d Iron (C4 on in Tille Plants (D	Eliving Roo 4) d Soils (C6	Secondary as a	ondary 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 (C) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Primary Indicators (minimum of one results) 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 Imag Sparsely Vegetated Concave Surfield Observations: Surface Water Present? Yes	equired; check all that apply) Water-Stains MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or Si ery (B7) Tace (B8) Depth (inch	ed Leave, 2, 4A, a 311) ertebrates ulfide Od nizospher f Reduces Reductio Stressed ain in Res	es (B9) (e and 4B) s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roo 4) d Soils (C6	Secondary as a	ondary 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 (C) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) \(\mathbf{D}\) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum of one research of the place) Primary Indicators (minimum of one research of the place) 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 Imag Sparsely Vegetated Concave Surfice Water Present? Ves _ Water Table Present? Yes _ Water Table Present?	equired; check all that apply) Water-Staine MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or Si ery (B7) Other (Explantace (B8)	ed Leave, 2, 4A, a 311) ertebrates ulfide Od nizospher f Reduce Reductio Stressed ain in Ren nes):	es (B9) (e and 4B) s (B13) for (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roo 4) d Soils (C6	Secondary a.s., a.	ondary 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 (C) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Primary Indicators (minimum of one results) 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 Imag Sparsely Vegetated Concave Surfield Observations: Surface Water Present? Ves _ Saturation Present? Yes _ Staturation	equired; check all that apply) Water-Stains MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or Si ery (B7) Trace (B8) Depth (inch No Depth (inch	ed Leave, 2, 4A, a 311) ertebrates ulfide Od nizospher f Reduces Reductio Stressed ain in Res mes):	es (B9) (e and 4B) s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roo 4) d Soils (C6 11) (LRR A)	Second Se	ondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 3 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) (D) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum of one results) 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 Imag Sparsely Vegetated Concave Surfice Water Present? Surface Water Present? Ves Saturation Present? Yes	equired; check all that apply) Water-Stains MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or Si ery (B7) Trace (B8) Depth (inch No Depth (inch	ed Leave, 2, 4A, a 311) ertebrates ulfide Od nizospher f Reduces Reductio Stressed ain in Res mes):	es (B9) (e and 4B) s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roo 4) d Soils (C6 11) (LRR A)	Second Se	ondary 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 (C) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Primary Indicators (minimum of one results) 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 Imag Sparsely Vegetated Concave Surfield Observations: Surface Water Present? Ves _ Saturation Present? Yes _ Staturation	equired; check all that apply) Water-Stains MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or Si ery (B7) Trace (B8) Depth (inch No Depth (inch	ed Leave, 2, 4A, a 311) ertebrates ulfide Od nizospher f Reduces Reductio Stressed ain in Res mes):	es (B9) (e and 4B) s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roo 4) d Soils (C6 11) (LRR A)	Second Se	ondary 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 (C Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) \(\mathbf{D}\) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Proposition (Parameter Section Present? Present.	equired; check all that apply) Water-Stains MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or Si ery (B7) Trace (B8) Depth (inch No Depth (inch	ed Leave, 2, 4A, a 311) ertebrates ulfide Od nizospher f Reduces Reductio Stressed ain in Res mes):	es (B9) (e and 4B) s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roo 4) d Soils (C6 11) (LRR A)	Second Se	ondary 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 (C) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) \(\mathbf{D}\) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

G777
CIA/
Consulting Engineers

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

City/County- Humb	oldt Sampling Date: 1211
	State: CA Sampling Point: 7P14U
	ve, convex, none): Slope (%):
Lat: 40.9% 3879°	Long:124.10 0990° Datum: Hum
20/0	NWI classification: PEM ID
	// // // // // // // // // // // // //
	Are "Normal Circumstances" present? Yes X
•	If needed, explain any answers in Remarks.)
	nt locations, transects, important features, et
No_V	
No Is the Samp	
_ No within a We	tland? Yes No
	or Dominance Test worksheet:
	That Are OBL, FACW, or FAC:(A)
	Total Number of Dominant
	Species Across All Strata: (B)
= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B
	Prevalence Index worksheet:
	Total % Cover of: Multiply by:
	OBL species x 1 =
	FACW species x 2 =
	FAC species x 3 =
= Total Cover	FACU species x 4 =
US Y FAI	UPL species x 5 = (B) (B)
20 V 5ACL	
15 N FAC	Prevalence Index = B/A = Hydrophytic Vegetation Indicators:
15. N FAC	1 - Rapid Test for Hydrophytic Vegetation
20 Y. NL	2 - Dominance Test is >50%
10 P NL	3 - Prevalence Index is ≤3.0¹
	4 - Morphological Adaptations ¹ (Provide supportin
	data in Remarks or on a separate sheet)
	5 - Wetland Non-Vascular Plants ¹
	Problematic Hydrophytic Vegetation ¹ (Explain)
_100	 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
= Total Cover	55 prosont, unless disturbed of problematic.
	Livelno-busin
	HydrophyticVegetation
PAS	Present? Yes No
= Total Cover	103011: 103
= Total Cover	165 NO
	Section, Township, Local relief (conca Lat: 40.863874° Total Cover Lat: 40.863874° Total Cover Significantly disturbed? Is the Samp Within a We Plants. Absolute 5 Species? Status Total Cover Total Cover Total Cover Total Cover Total Cover

npling Point: THE Gonsulting Engineers & Geologists, Inc.

Depth Matrix	e depth needed to document the indicator or Redox Features	
	% Color (moist) % Type	Loc ² Texture Remarks
	20	SL Fill
10 11 - 11 10		
4		22
*		
Type: C=Concentration, D=Depletion	n, RM=Reduced Matrix, CS=Covered or Coated	Sand Grains. ² Location: PL=Pore Lining, M=Matrix.
ydric Soil Indicators: (Applicable	to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Redox (S5)	2 cm Muck (A10)
Histic Epipedon (A2)	Stripped Matrix (S6)	Red Parent Material (TF2)
Black Histic (A3)	Loamy Mucky Mineral (F1) (except N	
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Depleted Below Dark Surface (A1		
Thick Dark Surface (A12)	Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
Lestrictive Layer (if present):	Nodex Bepressions (i.e.)	
Type:		Hydric Soil Present? Yes No
Depth (inches):		Hydric con resents 105 No
YDROLOGY		
Vetland Hydrology Indicators:	equired; check all that apply)	Secondary Indicators (2 or more required)
Vetland Hydrology Indicators: Primary Indicators (minimum of one re		
Vetland Hydrology Indicators: Primary Indicators (minimum of one re Surface Water (A1)	Water-Stained Leaves (B9) (exc	cept Water-Stained Leaves (B9) (MLRA 1, 2,
Vetland Hydrology Indicators: Primary Indicators (minimum of one re Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B)	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Vetland Hydrology Indicators: Primary Indicators (minimum of one re Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Vetland Hydrology Indicators: Primary Indicators (minimum of one re Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	 Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) 	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Vetland Hydrology Indicators: Primary Indicators (minimum of one re Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	 Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) 	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Vetland Hydrology Indicators: Primary Indicators (minimum of one re Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) prainage Patterns (B10) pry-Season Water Table (C2) saturation Visible on Aerial Imagery (C9) wing Roots (C3) Geomorphic Position (D2)
Vetland Hydrology Indicators: Primary Indicators (minimum of one re Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	 Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li Presence of Reduced Iron (C4) 	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Ving Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
Vetland Hydrology Indicators: Primary Indicators (minimum of one re Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Wing Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
Vetland Hydrology Indicators: Primary Indicators (minimum of one reserved) 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)	 Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li Presence of Reduced Iron (C4) 	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Wing Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Primary Indicators (minimum of one remary Indicators (minimum of one remary Indicators (minimum of one remark) 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)	Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Stunted or Stressed Plants (D1)	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Wing Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Vetland Hydrology Indicators: Primary Indicators (minimum of one re 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 Imag	Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Stunted or Stressed Plants (D1) gery (B7) Other (Explain in Remarks)	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) wing Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) (LRR A) Raised Ant Mounds (D6) (LRR A)
Vetland Hydrology Indicators: Primary Indicators (minimum of one re 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 Imag Sparsely Vegetated Concave Su	Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Stunted or Stressed Plants (D1) gery (B7) Other (Explain in Remarks)	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) wing Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) (LRR A) Raised Ant Mounds (D6) (LRR A)
Vetland Hydrology Indicators: Primary Indicators (minimum of one reserved) 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 Imag Sparsely Vegetated Concave Surfield Observations:	— Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) — Salt Crust (B11) — Aquatic Invertebrates (B13) — Hydrogen Sulfide Odor (C1) — Oxidized Rhizospheres along Li — Presence of Reduced Iron (C4) — Recent Iron Reduction in Tilled — Stunted or Stressed Plants (D1) gery (B7) — Other (Explain in Remarks)	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) wing Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) (LRR A) Raised Ant Mounds (D6) (LRR A)
Vetland Hydrology Indicators: Primary Indicators (minimum of one reserved of the primary Indicators (minimum of one reserved of the primary Indicators (minimum of one reserved of the primary Indicators (Max 1) Surface Water Table (A2) Surface Marks (B1) Surface Marks (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Images Sparsely Vegetated Concave Surfield Observations: Surface Water Present? Yes	Water-Stained Leaves (B9) (exc. MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Stunted or Stressed Plants (D1) gery (B7) Other (Explain in Remarks) urface (B8) No Depth (inches):	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) wing Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) (LRR A) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reserved) 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 Imag Sparsely Vegetated Concave Surfield Observations: Surface Water Present? Yes	Water-Stained Leaves (B9) (exc. MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Stunted or Stressed Plants (D1) gery (B7) Other (Explain in Remarks) Inface (B8) Depth (inches): Depth (inches):	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Ving Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one recomply and primary Indicators (minimum of one recomply and primary Indicators (minimum of one recomply and primary Indicators (Material Indicators (Mat	Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Stunted or Stressed Plants (D1) gery (B7) Other (Explain in Remarks) urface (B8)	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) wing Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) (LRR A) Raised Ant Mounds (D6) (LRR A)
Primary Indicators (minimum of one results) 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 Image Sparsely Vegetated Concave Surfield Observations: Surface Water Present? Water Table Present? Yes _ Saturation Present? Yes _ Saturation Present? Yes _ Sincludes capillary fringe)	Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Stunted or Stressed Plants (D1) Other (Explain in Remarks) Inface (B8) No Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) wing Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Primary Indicators (minimum of one results) 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 Image Sparsely Vegetated Concave Surfield Observations: Surface Water Present? Water Table Present? Yes _ Saturation Present? Yes _ Saturation Present? Yes _ Sincludes capillary fringe)	Water-Stained Leaves (B9) (exc. MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Stunted or Stressed Plants (D1) gery (B7) Other (Explain in Remarks) Inface (B8) Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) wing Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Primary Indicators (minimum of one results) 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 Images Sparsely Vegetated Concave Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauges)	Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Stunted or Stressed Plants (D1) Other (Explain in Remarks) Inface (B8) No Depth (inches): Depth (inches):	water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Wing Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) (LRR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes No
Vetland Hydrology Indicators: Primary Indicators (minimum of one reserved of the primary Indicators (Max) Water Warks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Image Sparsely Vegetated Concave Surfield Observations: Surface Water Present? Ves _ Saturation Present? Yes _ Staturation Present? Yes _ Sincludes capillary fringe) Describe Recorded Data (stream gauge)	Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Stunted or Stressed Plants (D1) Other (Explain in Remarks) Inface (B8) No Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) wing Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Vetland Hydrology Indicators: Primary Indicators (minimum of one reserved by Saturation (A1) Water Warks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Images Sparsely Vegetated Concave Sufficiency Vessurface Water Present? Vessurface Water Present? Vessurface Table Present? Vessurface Water Present?	Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Stunted or Stressed Plants (D1) Other (Explain in Remarks) Inface (B8) No Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) (LRR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes No
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 Imag Sparsely Vegetated Concave Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) (exc MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Li Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Stunted or Stressed Plants (D1) Other (Explain in Remarks) Inface (B8) No Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Wing Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) (LRR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes No

WETLAND DETERMINATION DATA FORM - Western	Mountains, Valleys, and Coast Region
ject/Site: Foster Avenue City/County: A	rcata Humbolat Sampling Date: 711120
olicant/Owner AVCath Land CO	State:CA Sampling Point: TP 5 U
estigator(s): Joseph Sales, Gnay WICX Section, Townsh	hip, Range:
ndform (hillslope, terrace, etc.):	ncave, convex, none): <u>lon(AVB k</u> Slope (%): 0-2%
bregion (LRR): A MILLA 4B Lat: 40.0040	O Final of
il Man Unit Name: JOHY Was + 0 - 240	14441 Classification.
e climatic / hydrologic conditions on the site typical for this time of year? Yes	No (If no, explain in Remarks.)
e Vegetation, Soil, or Hydrology significantly disturbed? N	Are "Normal Circumstances" present? Yes No
e Vegetation, Soil, or Hydrology naturally problematic? N	(If needed, explain any answers in Remarks.)
UMMARY OF FINDINGS – Attach site map showing sampling p	point locations, transects, important reatures, etc.
Hydrophytic Vegetation Present? Yes No Is the S	ampled Area
Hydric Soil Present? Yes No is the swithin a within a	Wetland? Yes No
Remarks: Pit excurated in man-made agriculturo	al dital draining upland
	J
/EGETATION – Use scientific names of plants. Absolute Dominant In	dicator Dominance Test worksheet:
Tree Stratum (Plot size: % Cover Species? S	
2	Total Number of Dominant Species Across All Strata: (B)
3	Percent of Dominant Species 25%
Sapling/Shrub Stratum (Plot size:	Prevalence Index worksheet:
1	
2	OBL species x1 =
3	FACW species x 2 =
4	FACU species x 4 =
= Total Cove	1 /100 Species
Herb Stratum (Plot size: 2++	
albeid sand	Prevalence Index = B/A =
3 KIMEN CASON 3 N	FAC Hydrophytic Vegetation Indicators:
4 Holan Janotur 1 20 Y	1 - Rapid Test for Hydrophytic Vegetation
5. Arthoximilator of the state	FACU 2 - Dominance Test is >50%
6. Ranucula roper 10 N	NL 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting
7. Brea Maxima	data in Remarks or on a separate sheet)
8. Sanchur Olgraceus 9. (Seranium dissectum 3 N	NL 5 - Wetland Non-Vascular Plants
	NL Problematic Hydrophytic Vegetation ¹ (Explain)
10. Browns diandrus 11. Operacy fullynum	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Avera parpota 5 = Total Cov	ver NL
Woody Vine Stratum (Plot size:	#AC Hydrophytic
1.70744 70015	Vegetation
2 = Total Co	Present? Yes No
7-7-7	
% Bare Ground in Herb Stratum	

Depth Matrix	Redox Features	
Depth Matrix (inches) Color (moist) %	Color (moist) % Type ¹ Loc ²	Texture Remarks
0-9 104R312 100		SCL
7-15 INVER/2 > 09	75 VES/2 0.5% C DL	SICL Along dead root chance
1 1 1011/2/21	E 10 4/C 25% C 01	J. CZ MIN GENERAL TOOL CHANTE
and taxtoo to	3 YK 7/6 0.3/6 C FL	
5-24 10 yr3/2 47	7.54R5/8 3% C M	Si C
	=Reduced Matrix, CS=Covered or Coated Sand Gra	
lydric Soil Indicators: (Applicable to all		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Redox (S5)	2 cm Muck (A10)
Histic Epipedon (A2)	Stripped Matrix (S6)	Red Parent Material (TF2)
Black Histic (A3)	Loamy Mucky Mineral (F1) (except MLRA 1)	Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)	3 Indicators of hydrophytic vocatation and
Thick Dark Surface (A12)	Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed of problematic.
Restrictive Layer (if present):		
Type:		
Depth (inches):		Hydric Soil Present? Yes No _V
Netland Hydrology Indicators:	ed; check all that apply)	Secondary Indicators (2 or more required)
Netland Hydrology Indicators: Primary Indicators (minimum of one require	ed; check all that apply) Water-Stained Leaves (B9) (except	
Netland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1)		
Netland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2
Netland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B)
Netland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Netland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	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 Roo	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	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 Roo Presence of Reduced Iron (C4)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ts (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require 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)	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 Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require 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)	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 Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require 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 (B	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 Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 ts (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Vetland Hydrology Indicators: Primary Indicators (minimum of one require 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 (E	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 Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Primary Indicators (minimum of one require 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 (B5) Sparsely Vegetated Concave Surface Field Observations:		Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Primary Indicators (minimum of one require 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 (E Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes	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 Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks) (B8)	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)
Petland Hydrology Indicators: Primary Indicators (minimum of one require 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 (B1) Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present?	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 Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks) No Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ts (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum of one require 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 (E Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes Includes capillary fringe)		Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum of one require 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 (E Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	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 Roo Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks) No Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum of one require 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 (B Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Water Table Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, m		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum of one require 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 (B Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, m		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
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 (E Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, m		Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (CS) Season Stain (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

			tation Valleys and Coast Region	
WETLAND DETERMINATION)ATA FORM –	Western Moun	tains, Valleys, and Coast Region	חבלוול
ject/Site: Foster Anenue	City/	County:ANCUT	fa / Hvm bold Sampling Date: 5	7016
Discortioner Avata Land Co.			State: A Sampling Point: 1	P184
	Sect	tion, Township, Ran	ge:	0~1
stigator(s): A Willow Swipp and dom (hillslope, terrace, etc.): Awaining a	LAGI Loc	al relief (concave, c	onvex, none): Slope	(%): <u>U 1</u>
region (LRR): A MILAHB	Lat: <u> </u>	964971	Long: Datum	
Man Unit Name: Jolly Glant 0 29)		NWI classification:	
climatic / hydrologic conditions on the site typical for	this time of year?	Yes No	(If no, explain in Remarks.)	/
Vegetation, Soil, or Hydrology	significantly dist	urbed? N Are "	Normal Circumstances present? Yes	No
Vegetation Soil, or Hydrology	naturally probler	matic? N (If ne	eded, explain any answers in Remarks.)	
IMMARY OF FINDINGS - Attach site ma	ap showing sa	mpling point le	ocations, transects, important fea	tures, etc
Ves V	No			59
lydric Soil Present? Yes	No No	ts the Sampled	area Yes No	
Vetland Hydrology Present? Yes	No	1		
Remarks: Excavated man made a	iten away	actess vous	<i>(</i>)	
EGETATION – Use scientific names of p	lants.			
GETATION - 636 SOIGHBINS HERE	Absolute D	Dominant Indicator	Dominance Test worksheet:	
ree Stratum (Plot size:	% Cover S	Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC:	(A)
			Total Number of Dominant	
			Species Across All Strata:	(B)
4			Percent of Dominant Species) (A (17)
5+t		Total Cover	That Are OBL, FACTY, OFF AC.	(A/B
Sapling/Shrub Stratum (Plot size: 5++)	15	Y FAC	Prevalence Index worksheet: Total % Cover of: Multiple	v hv
2.			OBL species x1 =	
3.			FACW species x 2 =	
4.			FAC species x 3 =	
5.			FACU species x 4 =	
Ett	75-	= Total Cover	UPL species x 5 =	
1. FOTACA MYLLOK (VUIDIA)	5	y. FALL	Column Totals: (A)	(E
2 Raphany Isanins	10	À Mr	Prevalence Index = B/A =	
3. Holew anatus	350	Y FAC	Hydrophytic Vegetation Indicators:	
4. Briza malinar		N NL	1 - Rapid Test for Hydrophytic Vege	etation
5. Agrostis Stolontora		Y FAC V FAL	2 - Dominance Test is >50%	
6 Didsacu tulmum	$-\frac{5}{2}$	N FAL	3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Pro	wido cuppod
7. Geranum dissection		N VPL	data in Remarks or on a separat	te sheet)
8 Vigia Sativa	<u> </u>	Y FAL	5 - Wetland Non-Vascular Plants	
9. Fish CO Perons		N FAC	Problematic Hydrophytic Vegetation	
D was a volume PILA	5	N FAC	¹ Indicators of hydric soil and wetland hy be present, unless disturbed or problem	drology mus
11. NOMEX (ACC)OS VIID	193	= Total Cover	be present, unless disturbed of problem	lauc.
Woody Vine Stratum (Plot size:	120.	6		
1			Hydrophytic Vegetation	
2		= Total Cover	Present? Yes No	
% Bare Ground in Herb Stratum 67.				
Remarks:				
A contract of the contract of		(E)		

epth Matrix nches) Color (moist) %	Redox Features Color (moist) % Type ¹ Loc ²	Toyture
3520-12 104R 3/2 100	Color (Moist) % Type Loc	Texture . Remarks Collection of delans from work
214 05113/1	INVERTO TE Z	
24 2.5 1 3/1	10 yr 5/8 15 C M	Si CL - woody de bis sand layer
		black burned woody dobat
		Native Soil
pe: C=Concentration, D=Depletion, R dric Soil Indicators: (Applicable to	RM=Reduced Matrix, CS=Covered or Coated Sand Gr	ains. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
		·
Histosol (A1) Histic Epipedon (A2)	Sandy Redox (S5) Stripped Matrix (S6)	2 cm Muck (A10) Red Parent Material (TF2)
Black Histic (A3)	Loamy Mucky Mineral (F1) (except MLRA 1)	Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)	care (Explain in Normania)
Thick Dark Surface (A12)	Redox Dark Surface (F6)	3Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
strictive Layer (if present):		
Туре:		*
		Hydric Soil Present? Yes No
marks:		Hydric 30tt Plesent? Tes NO
marks: DROLOGY		Tryunc 3011 Plesent? TesNO
DROLOGY otland Hydrology Indicators:	ired; check all that apply)	Secondary Indicators (2 or more required)
DROLOGY otland Hydrology Indicators:	ired; check all that apply) Water-Stained Leaves (B9) (except	Secondary Indicators (2 or more required)
DROLOGY otland Hydrology Indicators: mary Indicators (minimum of one requi		Secondary Indicators (2 or more required)
DROLOGY Itland Hydrology Indicators: mary Indicators (minimum of one required) Surface Water (A1)	Water-Stained Leaves (B9) (except	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2
DROLOGY Itland Hydrology Indicators: mary Indicators (minimum of one requirements) Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B)
DROLOGY Itland Hydrology Indicators: mary Indicators (minimum of one requirements) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
DROLOGY Itland Hydrology Indicators: mary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13)	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 (C3)
processing to the process of the pro	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) 	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 (C3)
DROLOGY Interpretation of the properties of the	 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 Roof 	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 (C3) (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
processing to the process of the pro	 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 Root Presence of Reduced Iron (C4) 	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 (C3 (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
DROLOGY Interpretation (A3) Water Marks (B1) Sediment Deposits (B2) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery	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 Rool Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) (B7) 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 (C3 ts (C3) — Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
DROLOGY etland Hydrology Indicators: mary Indicators (minimum of one required in the state of t	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 Rool Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) (B7) 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 (C3 (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
DROLOGY etland Hydrology Indicators: mary Indicators (minimum of one requi 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 Sparsely Vegetated Concave Surface	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) (B7) Other (Explain in Remarks) e (B8)	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C3 (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
DROLOGY Interpretation of the property of the	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) (B7) Other (Explain in Remarks) e (B8)	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C3 (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
DROLOGY etland Hydrology Indicators: mary Indicators (minimum of one required of 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 Sparsely Vegetated Concave Surface and Observations: Inface Water Present? Yes	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) (B7) Other (Explain in Remarks) e (B8)	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (CS) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
DROLOGY etland Hydrology Indicators: mary Indicators (minimum of one required of section of sectio	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 Roof Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) (B7) Other (Explain in Remarks) e (B8) Depth (inches):	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 (C3 (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
DROLOGY Internation of the present? Internation of the present of the present? Internation of the present of the pres	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 Room Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) (B7) Other (Explain in Remarks) (B8) Depth (inches):	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 (C3) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
DROLOGY etland Hydrology Indicators: mary Indicators (minimum of one requi- 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 Sparsely Vegetated Concave Surface eld Observations: rface Water Present? Yes ater Table Present? Yes cludes capillary fringe) iscribe Recorded Data (stream gauge,	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks) (B7) Other (Explain in Remarks) No Depth (inches): No Wetla	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 (CS (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
DROLOGY etland Hydrology Indicators: mary Indicators (minimum of one requi 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 Sparsely Vegetated Concave Surface eld Observations: urface Water Present? ater Table Present? turation Present? yes cludes capillary fringe)	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks) (B7) Other (Explain in Remarks) No Depth (inches): No Wetla	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 (CS (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

WETLAND DETERMINATION DA			1	to a car	region
Project/Site: Foster Amenue	Ci	ty/County:	Arcata	Humbold Sampling C	Date: 5/11/20
Applicant/Owner: Ava ta Lund Ca.				State: A Sampling F	
Investigator(s): Joseph Saler, and y WI	s	ection, Tow	nship, Ran	ge: Sec 19 TOLON RDI	C
Landform (hillslope, terrace, etc.): drainage d		ocal relief (concave, co	onvex, none): Concave	_ Slope (%):0-1
Subregion (LRR): A MILA 4B		0.00	3054	Long: -124.106 543	Datum:
	200/0			NWI classification: PE	MIB
Are climatic / hydrologic conditions on the site typical for this	s time of year	? Yes	No	(If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology s					es No
Are Vegetation, Soil, or Hydrology r				eded, explain any answers in Remar	
SUMMARY OF FINDINGS - Attach site map	showing s	sampling	point lo	ocations, transects, importa	ant features, etc.
Hydrophytic Vegetation Present? Yes N	lo		0()		
1,1,411,511,111	lo		Sampled . n a Wetland		
Trotteria Hydrology Hosoliti	10				
Remarks: Excavated ditch on was	tern bou	ndery			
VEGETATION – Use scientific names of plan	ıts.				
3()	Absolute	Dominant	Market Committee	Dominance Test worksheet:	
Tree Stratum (Plot size: 30)	% Cover	Species?	Status FAC	Number of Dominant Species That Are OBL, FACW, or FAC:	3
1. Alnus rubra		_{	<u> </u>		(A)
3.				Total Number of Dominant Species Across All Strata:	5 (B)
4				Percent of Dominant Species	1 - 01
Sft	7	= Total Co	ver	That Are OBL, FACW, or FAC:	60% (A/B)
Sapling/Shrub Stratum (Plot size: 5ft) 1. Rubus ameria cus	10	V	FAC	Prevalence Index worksheet:	
2					Multiply by:
3.				OBL species x 1	
4.				FACW species x 2 FAC species x 3	
5,3	- 10	7000000000		FACU species x 4	
Herb Stratum (Plot size: 5	70	= Total Co	ver	UPL species x 5	
1 Deventre somerasa	40	· Y	OBL	Column Totals: (A)	(B)
2. Equisetum aqueire	28	N	FAC	Prevalence Index = B/A = _	
3. Ralhanu sativus	30	<u>_</u>	NL	Hydrophytic Vegetation Indicate	ors:
4 Arthaxantam odoration	20_	/ _	FACU	1 - Rapid Test for Hydrophytic	c Vegetation
5. Dipsacus fullanum	- 1 -	<u>N</u>	FAC	2 - Dominance Test is >50%	
6. Vica Sariva	- 1	2	NL	3 - Prevalence Index is ≤3.0¹	1.00
7. Vicia tetrasterma 8. Runexi acetystila	- 7	7	FACU	4 - Morphological Adaptations data in Remarks or on a s	s (Provide supporting eparate sheet)
9. Acrosts Sklavitory	- 4	N	FAL	5 - Wetland Non-Vascular Pla	ants ¹
10.		T		Problematic Hydrophytic Veg	etation1 (Explain)
11.				¹ Indicators of hydric soil and wetla	and hydrology must
		= Total Co	ver	be present, unless disturbed or pr	robiematic.
Woody Vine Stratum (Plot size:	28.8				
1		-	:	Hydrophytic Vegetation	
2		= Total Co	ver	Present? Yes	No
% Bare Ground in Herb Stratum		15.01.00			United A. S.
Remarks: * Multiple horbacear a	lac no	vot.			
W I WILLIAM I MANOON IN	Mag by	J 0 4.			

Sampling Point: TP [7

	Redox Features	
inches) Color (moist) %	Color (moist) % Type Loc2	Texture Remarks
0-9 104R 3/2 88	5/R 5/6 12 C PL	SICLE Sand las proset, 4111
1-27+2.544/1 50%		SCL & cobble Hill Oreset 190
INVE 5/8 50		Delate of Sal
10/1/0 10		LOCKED OF SUND
	· · · · · · · · · · · · · · · · · · ·	
	M=Reduced Matrix, CS=Covered or Coated Sand Gra	
ydric Soil Indicators: (Applicable to a	II LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
_ Histosol (A1)	Sandy Redox (S5)	2 cm Muck (A10)
_ Histic Epipedon (A2)	Stripped Matrix (S6)	Red Parent Material (TF2)
_ Black Histic (A3)	Loamy Mucky Mineral (F1) (except MLRA 1)	Very Shallow Dark Surface (TF12)
_ Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
_ Depleted Below Dark Surface (A11)	Depleted Matrix (F3)	2
Thick Dark Surface (A12)	✓ Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
_ Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
_ Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
estrictive Layer (if present):		
Туре:)
Depth (inches):		Hydric Soil Present? Yes No
Vetland Hydrology Indicators:		
Vetland Hydrology Indicators: rimary Indicators (minimum of one requir		Secondary Indicators (2 or more required)
Vetland Hydrology Indicators: rimary Indicators (minimum of one requir Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2
Vetland Hydrology Indicators: rimary Indicators (minimum of one requir		Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B)
Vetland Hydrology Indicators: rimary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10)
Vetland Hydrology Indicators: rimary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Vetland Hydrology Indicators: rimary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C5)
Vetland Hydrology Indicators: rimary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13)	Water-Stained Leaves (B9) (MLRA 1, 2
Vetland Hydrology Indicators: rimary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) 	Water-Stained Leaves (B9) (MLRA 1, 2
Vetland Hydrology Indicators: rimary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	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 Root	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (CS Es (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Vetland Hydrology Indicators: rimary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	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 Root Presence of Reduced Iron (C4)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 ts (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Vetland Hydrology Indicators: rimary Indicators (minimum of one requir 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)	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 ts (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Vetland Hydrology Indicators: rimary Indicators (minimum of one requir 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)	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Es (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Vetland Hydrology Indicators: Irimary Indicators (minimum of one require 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 (1) Sparsely Vegetated Concave Surface	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Es (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Vetland Hydrology Indicators: Primary Indicators (minimum of one require 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 (Sparsely Vegetated Concave Surface Sield Observations:	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Es (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
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 (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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8) No Depth (inches):	— Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C8 Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Vetland Hydrology Indicators: Primary Indicators (minimum of one require 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 (Inc.) Sparsely Vegetated Concave Surface (Inc.) Surface Water Present? Yes	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8) No Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Es (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Vetland Hydrology Indicators: Primary Indicators (minimum of one require 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 (Insurance Surface Water Present? Ves Vater Table Present?	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks) (B8) No Depth (inches): WAA No Depth (inches): Wetla	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C8 Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Vetland Hydrology Indicators: Primary Indicators (minimum of one require 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 (Insurance Surface Water Present? Ves Vater Table Present?	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8) No Depth (inches):	— Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C8 (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Vetland Hydrology Indicators: Primary Indicators (minimum of one require 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 (includes Capillary Fringe) Saturation Present? Ves Saturation Present? V	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8) No Depth (inches): No Depth (inches): Wetlamonitoring well, aerial photos, previous inspections), in	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C8 Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Vetland Hydrology Indicators: Primary Indicators (minimum of one require 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 (Insurance Surface Water Present? Ves Vater Table Present?	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 Root Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) B7) Other (Explain in Remarks) (B8) No Depth (inches): No Depth (inches): Wetlamonitoring well, aerial photos, previous inspections), in	Water-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C8 Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)



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

www.shn-engr.com



Federal Emergency Management Agency

Washington, D.C. 20472

JUN 2 1 2017

IN REPLY REFER TO:

The Honorable Virginia Bass Chair, Humboldt County Board of Supervisors 825 5th Street Room 111 Eureka, California 95501

Case Number: 11-09-0847V Community: Humboldt County, California (Unincorporated Areas) Community No.: 060060 Effective Date: June 22, 2017 Revised FIRM Panel Nos.: 06023C0005G, 06023C0010G, 06023C0015G, 06023C0020G, 06023C0155G, 06023C0160G, 06023C0320G, 06023C0330G, 06023C0340G, 06023C0350G, 06023C0485G, 06023C0495G, 06023C0515G, 06023C0525G, 06023C0660G, 06023C0670G, 06023C0680G, 06023C0830G, 06023C0835G, 06023C0839G, 06023C0840G, 06023C0843G, 06023C0845G, 06023C0852G, 06023C0854G, 06023C0855G, 06023C0865G, 06023C0985G, 06023C0990G, 06023C0995G, 06023C1005G, 06023C1015G, 06023C1025G, 06023C1170G, 06023C1180G, 06023C1190G, 06023C1195G, 06023C1360G, 06023C1370G, 06023C1390G, 06023C1400G, 06023C1555G, 06023C1565G, 06023C1575G, 06023C1730G, 06023C1735G, 06023C1745G, 06023C1765G, 06023C1770G, 06023C1775G, 06023C1910G, 06023C1930G, 06023C1935G, 06023C1940G, 06023C1945G

REVALIDATION 2

Dear Ms. Bass:

When a new National Flood Insurance Program (NFIP) map panel becomes effective, it automatically supersedes previously issued Letter of Map Change (LOMC) actions (i.e., Letters of Map Revision-based on Fill [LOMR-Fs] and Letters of Map Amendment [LOMAs]) that have been issued on that map panel, even if they are still valid and should apply to the new NFIP map as well. Because a revised NFIP map has been prepared for your community, it is necessary for the Federal Emergency Management Agency (FEMA) to take administrative action to prevent valid LOMR-Fs and LOMAs from being superseded. Accordingly, the purpose of this letter is to revalidate the determinations for properties and/or structures in your community as described in the LOMR-Fs and LOMAs previously issued by FEMA on the dates listed below. As of the above-referenced effective date, these LOMR-Fs and LOMAs will revise the effective NFIP map for the referenced community, dated June 21, 2017, and will remain in effect until superseded by a revision to the NFIP map panel on which the property is located.

Please be advised, the revalidation letter effective November 5, 2016, case number 07-09-0269V, for the Unincorporated Areas of Humboldt County has been superseded. All LOMR-Fs and LOMAs from that

letter have been reviewed and have been incorporated into this updated revalidation letter if appropriate. Please note all LOMCs with effective dates after November 5, 2016, that are located on non-revised panels for your community, will remain valid until superseded by a revision to the NFIP map panel on which the property is located. The LOMCs on non-revised NFIP map panels are not included in the table below. The FEMA case numbers, when available, property identifiers, Flood Insurance Rate Map (FIRM) Panel numbers, and current flood insurance zones of the revalidated LOMR-Fs and LOMAs are listed below.

Because these revalidated LOMR-Fs and LOMAs will not be printed or distributed to primary map users, such as local insurance agents and mortgage lenders, your community will serve as a repository for these new data. We encourage you to disseminate the information reflected by this letter throughout your community so that interested persons, such as property owners, local insurance agents, and mortgage lenders, may benefit from the information.

If you feel a LOMC has been omitted from the list that should have been included, we encourage you to submit the LOMC for re-determination. When requesting a re-determination, we ask that a cover letter be sent along with a copy of the original determination letter to: LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, Virginia 22304-6426.

If you have any questions regarding this matter, please contact the FEMA Regional Office at 111 Broadway Street, Suite 1200, Oakland, California or by phone at (510) 627-7100. Copies of previously issued LOMR-Fs and LOMAs, if needed, can be obtained by contacting the FEMA Map Information eXchange (FMIX), toll free at (877) 336-2627 (877-FEMA-MAP).

Sincerely,

Luis Rodriguez, P.E., Director Engineering and Modeling Division

Federal Insurance and Mitigation Administration

cc: LOMC Subscription Service Subscribers

Community Map Repository

Mr. Todd Sobolik, Chief Building Official and Floodplain Administrator, Humboldt County

Case No: 11-09-0847V

June 22, 2017

Community No.: 060060

Case No.	e No. Date Issued Project Identifier		Map Panel No.	Zone
95-09-334A	4/26/1995	SANTA CLARA TRACT, BLOCK 7, LOTS 1-4 2845 ESSEX ST.	06023C0845G	х
04-09-0207A	4/23/2004	90 EVERGREEN WAY PORTION OF SECTION 16, T2S, R2W, H.M.	06023C1575G	х
04-09-0449A	4/23/2004	1229 LIGHTHOUSE ROAD PORTION OF SECTION 16, T2S, R2W, H.M.	06023C1575G	Х
05-09-0128A	3/23/2005	TRACT 488, PARCEL 32351 OAK RIDGE TERRACE LANE	06023C0865G	X
06-09-BD67A	8/15/2006	1889 COPENHAGEN ROAD	06023C1015G	X
09-09-0145A	11/4/2008	565 MCDONALD CREEK ROAD A PORTION OF SECTION 32, TOWNSHIP 10 NORTH, RANGE 1 EAST, HBM	06023C0330G	х
09-09-1845A	7/9/2009	62 SOLE AVENUE Lots 16 - 18, Block 5, King Salmon Resort	06023C1025G	x
10-09-0293A	12/8/2009	2426 & 2428 OLD ARCATA ROAD	06023C0854G	Multiple
12-09-1883A	6/7/2012	SECTIONS 23 & 24, T8N, R1W 94 STUMPTOWN ROAD	06023C0485G	X
12-09-3182A	11/8/2012	SECTION 29, T7N, R1E 1675 MURRAY ROAD	06023C0680G	X
13-09-1029A	1/31/2013	SANTA CLARA TRACT, BLOCK 7, LOTS 5-9 2836 NORTH STREET	06023C0845G	x
13-09-2942A	9/19/2013	TRACT NO. 151, BEAU PRE SUBDIVISION, PORTION OF LOT 1 3180 EAGLE LANE	FRACT NO. 151, BEAU PRE 06023C0680G SUBDIVISION, PORTION OF	

Case No: 11-09-0847V

June 22, 2017

Community No.: 060060

Case No.	se No. Date Issued Project Identifier		Map Panel No.	Zone
14-09-1014A	1/30/2014	SECTION 24, T5N, R1W, HUMBOLDT MERIDIAN 2899 NORTH STREET	06023C0845G	х
14-09-2045A	4/15/2014	PARCEL MAP 2102, PARCEL 1 979 PINE HILL ROAD	06023C0843G	X
14-09-2125A	4/29/2014	SECTION 32, T7N, R1E, HUMBOLDT MERIDIAN 1654 MURRAY ROAD	06023C0680G	х
14-09-2454A	5/13/2014	SECTION 24, T5N, R1W, HUMBOLDT MERIDIAN 2929 NORTH STREET	06023C0845G	X
14-09-2282A	5/29/2014	SECTION 18, T4S, R3E, HUMBOLDT MERIDIAN 6000 BRICELAND-THORN ROAD	06023C1975F	X
14-09-3628A	7/15/2014	MYERS TRACT, PORTION LOTS 98 & 113 851 PINE HILL ROAD	06023C0843G	X
15-09-2485A	9/4/2015	EDWIN P. FREDRICKSON, PARCEL A 207 FREDRICKSON LANE	06023C0843G	х
17-09-0524A	1/9/2017	PARCEL MAP NO. 1655, PARCEL 1 2473 GOLDFINCH LANE	06023C0680G	х
17-09-0857A	3/20/2017	SECTION 16, T2S, R2W 1311 LIGHTHOUSE ROAD	06023C1575G	X
17-09-0981A	3/31/2017	SECTION 26, T4N, R1W 8472 ELK RIVER ROAD	06023C1025G	X

Case No: 11-09-0847V Community No.: 060060

June 22, 2017

The letters shown below were revalidated by case number 07-09-0269V. They are revalidated automatically by this letter because they are not located on a revised FIRM panel.

Case No.	se No. Date Issued Project Identifier		Map Panel No.	Zone
92-09-087B	10/2/1992	TRACT 23, PACIFIC MANOR SUBDIV UNIT 1, LOT 11 1999 UPPER BAY ROAD	06023C0690F	х
94-09-817A	9/20/1994	44 SOUTH 12TH STREET APN 200-353-18	06023C1209F	X
95-09-553A	6/16/1995	PORTION OF SECTION 16, T2S, R2W	06023C1575F	X
96-09-909A	9/3/1996	4651 PARTON LANE PORTION OF SECTION 17, T6N, R1E, H.M.	06023C0690F	х
97-09-262A	1/2/1997	PARCEL 1, PARCEL MAP NO. 438 4090 OLD RAILROAD GRADE ROAD	06023C0685F	х
97-09-502A	3/10/1997	2160 GLENDALE DRIVE PORTION OF SECTION 13, T6N, R1E, H.B.&M.	06023C0694F	Х
97-09-1184A	10/23/1997	3422 FOSTER AVENUE PORTION OF SECTION 19, T6N, R1E, H.M.	06023C0690F	X
98-09-088A	10/30/1997	SIMPSON TIMBER CO, PORTION OF SECTIONS 19, 20, 29 & 30, T6N, R1E, H.M.	06023C0690F	X
98-09-786A	7/9/1998	3787 SPEAR STREET PORTION OF SECTION 20, T6N, R1E, H.M.	06023C0690F	X
98-09-1069A	9/18/1998	TRACT 25, LITTLE GOLDEN GATE SUBDIV, LOT 46 280 ACKERMAN LANE	06023C1500F	х
99-09-057A	11/2/1998	TRACT 23, PACIFIC MANOR SUBDIV UNIT 1, LOT 13 1987 UPPER BAY ROAD	06023C0690F	x

Case No: 11-09-0847V

June 22, 2017

Community No.: 060060

Case No.	Case No. Date Issued Project Identifier		Map Panel No.	Zone
99-09-201A	12/23/1998	TRACT 23, PACIFIC MANOR SUBDIV UNIT 1, LOT 2 2068 ERNEST AVENUE	06023C0690F	X
99-09-813A	6/11/1999	3510 NEWBURG ROAD PARCEL 2, PARCEL MAP NO. 171	06023C1207F	X
99-09-915A	7/9/1999	220 MAPLE HILLS ROAD A PORTION OF SECTIONS 10 & 11, T3S, R3E, H.M.	06023C1850F	X
00-09-327A	2/24/2000	TRACT 64, PACIFIC MANOR SUBDIV UNIT 6, LOT 156 2061 ERNEST WAY	06023C0690F	X
01-09-711A	6/6/2001	120 FRANCES GROVE LANE PARCEL MAP 3087, PARCEL 3	06023C1850F	X
02-09-699A	6/26/2002	3805 FOSTER AVENUE PORTION OF SECTION 30, T6N, R1E, H.M.	06023C0690F	X
02-09-1134A	7/17/2002	TRACT 27, RIVERSIDE ESTATES SUBDIV UNIT 1, LOTS 20 & 21 72 KIRK COURT	06023C1455F	X
04-09-0105A	11/25/2003	151 ETTER RANCH ROAD PORTION OF SECTION 6, T4S, R2E, H.M.	06023C1825F	X
04-09-0003A	12/16/2003	220 CROSBY ROAD PORTION OF SECTION 8, T2N, R1W, H.M.	06023C1205F	X
04-09-0215A	1/7/2004	96 CHURCH LANE 06023C1275F PORTION OF SECTION 31, Γ2N, R2E, H.M. (APN: 206- 441-32)		х

Community No.: 060060

Case No: 11-09-0847V

June 22, 2017 **Project Identifier** Map Panel No. Zone Case No. **Date Issued** 04-09-0292A PORTION OF SECTION 14, 06023C1980F X 2/13/2004 T4S, R3E, H.M. (APN: 77-281-05) 04-09-0561A 3/1/2004 176 CHURCH LANE --06023C1275F X PORTION OF SECTION 31, T2N, R2E, H.M. (APN: 206-431-006) X 05-09-0296A 2/1/2005 TRACT 72, KIMTU 06023C1980F MEADOWS SUBDIV, LOT 12 -- 1653 KIMTU DRIVE 9/7/2005 TRACT 64, LOT 149 -- 2043 06023C0690F X 05-09-1452A **ERNEST WAY** 9/7/2005 06023C0689F X 05-09-1558A TRACT NO. 32, PACIFIC MANOR SUBDIV, UNIT 2, **LOT 20 -- 3032 JANES ROAD** 05-09-1656A 10/4/2005 3018 JANES ROAD, PORT OF 06023C0689F X SEC 20, T6N, R1E, H.M. 06023C1245F 06-09-0237A 1/31/2006 72 LOVE LEE LANE X 06023C1275F X 07-09-1455A 7/10/2007 244 CHURCH LANE -- A PORTION OF SECTION 31, T2N, R2E, H.M. 07-09-1966X 10/2/2007 BUILDINGS A-G -- 1749 06023C1209F X ALAMAR WAY X 08-09-0321A 1/7/2008 PACIFIC MANOR SUBDIV, 06023C0869F UNIT 2, LOT 24 -- 1957 EDITH DRIVE \mathbf{X} 4/17/2008 PACIFIC MANOR SUBDIV 6. 06023C0690F 08-09-0439A LOT 162 -- 2026 BALL COURT X 08-09-0899A 5/22/2008 LOT 42, TRACT 33, PACIFIC 06023C0690F MANOR SUBDIVISION UNIT

3 - 1984 LESLIE COURT

Case No: 11-09-0847V Community No.: 060060

June 22, 2017

Case No.	Date Issued	Date Issued Project Identifier		Zone
08-09-1269A	7/10/2008	MANOR SUBDIV, TRACT 33, UNIT 3, LOT 35 3054 ALICE AVENUE	06023C0690F	х
08-09-1665A	9/4/2008	PACIFIC MANOR SUBDIV, BLOCK 3, LOT 55 1994 EDITH DRIVE	06023C0690F	х
09-09-0289A	12/18/2008	PACIFIC MANOR SUBDIV UNIT 3, TRACT 33, LOT 38 3031 ALICE AVENUE	06023C0690F	х
09-09-0443A	1/13/2009	8821 & 8833 WEST END ROAD PORTION OF SECTION 15, T6N, R1E, H.M.	06023C0695F	х
09-09-0566A	7/2/2009	211 CHURCH LANE A PORTION OF SECTION 31, T2N, R2E, H.M.	06023C1275F	х
09-09-2422A	8/18/2009	77 LOVE LEE LANE A PORTION OF SECTION 26, T2N, R1E, H.M.	06023C1245F	х
09-09-2222A	9/17/2009	120 East Branch Road, Garberville, CA 95442	06023C1985F	X
09-09-2881A	10/20/2009	121 Northwestern Avenue Sec 36, T2N, R1W, Humboldt Meridian	06023C1220F	х
10-09-0703A	3/25/2010	(70-RS) PARCEL 1 619 SHELTER COVE RD	06023C1975F	х
10-09-3805A	10/5/2010	(70-RS) TRACT 33, PACIFIC MANOR SUBDIVISION UNIT 3, LOT 37 3030 ALICE AVENUE	06023C0690F	х
10-09-3644A	10/7/2010	(70-RS) TRACT NO. 33, PACIFIC MANOR SUBDIVISION UNIT NO. 3, LOT 27 1983 EDITH DRIVE	06023C0690F	X

Case No: 11-09-0847V Community No.: 060060

June 22, 2017

Case No.	Date Issued	Project Identifier	Map Panel No.	Zone	
11-09-0645A	1/6/2011	(70-OAS) SECTION 16, T2N, R1W, H.M 434 HARBERS LANE	06023C1215F	Х	
11-09-1945A	4/26/2011	(70-RS) LOT 4, TRACT 48, RIVERCREST 33 RIVER CREST DRIVE	06023C1985F	X	
11-09-2755A	6/7/2011	(70-RS) PACIFIC MANOR SUBDIVISION, UNIT 6, TRACT 64, LOT 167 – 2045 BALL COURT	06023C0690F	Х	
11-09-2812A	6/7/2011	(70-RS) PACIFIC MANOR SUBDIVISION UNIT 6, LOT 163 2025 BALL COURT	06023C0690F	X	
11-09-2956A	6/21/2011	(70-R) A PORTION OF SECTION 19, T6N, R1E, H.M - 3212 & 3266 FOSTER AVENUE	06023C0690F	X	
11-09-3084A	6/30/2011	(70-RS) TRACT NO. 23, PACIFIC MANOR SUBDIVISION UNIT 1, LOT 17 1963 UPPER BAY ROAD	06023C0690F	х	
11-09-2871A	7/19/2011	(65-RS) PARCEL 3 1455, 1465, 1487 SAND PRAIRIE COURT	06023C1209F	Х	
11-09-2789A	8/25/2011	(70-RS) SECTION 6, T1N, R2E 802 RIVERSIDE PARK ROAD	06023C1455F		X
11-09-4046A	11/1/2011	TRACT NO. 32, PACIFIC MANOR SUBDIVISION, UNIT 2, LOT 23 3076 JANES ROAD	06023C0689F	X	
12-09-0478A	1/10/2012	TRACT 33, PACIFIC MANOR UNIT 3, LOT 43 1978 LESLIE COURT	06023C0690F	X	

Case No: 11-09-0847V

June 22, 2017

Community No.: 060060

Case No.	Date Issued	Project Identifier	Map Panel No.	Zone
12-09-0346A	1/24/2012	SECTION 6, T1N, R2E 36 FIR LOOP COURT	06023C1455F	х
12-09-1854A	6/12/2012	SECTION 24, T6N, R1E, HUMBOLDT MERIDIAN 2350 GLENDALE DRIVE	06023C0694F	х
12-09-2911A	9/5/2012	Lot 4, Tract No. 179 Subdivision - 600 River Bend Road	06023C0760F	X
12-09-2686A	9/13/2012	TRACT NO. 64 PACIFIC MANOR SUBDIVISION UNIT SIX, LOT 158 2050 BALL COURT	06023C0690F	Х
13-09-1485A	4/23/2013	SECTION 29, T2N, R1E 1919 RIVER BAR ROAD	06023C1240F	X
13-09-1201A	4/25/2013	SECTION 31, T2N, R2E, H.M - 18 CHURCH LANE	06023C1275F	X
13-09-1754A	4/25/2013	2862 STATE HIGHWAY 254	06023C1850F	X
13-09-2163A	7/23/2013	SECTION 6, T5S, R2E 600 HUCKLEBERRY LANE	06023C1975F	X
13-09-2450A	8/1/2013	TRACT NO. 48 RIVERCREST SUBDIVISION, LOT 7 34 RIVER CREST	06023C1985F	Х
14-09-0314A	12/12/2013	TRACT NO. 33, PACIFIC MANOR SUBDIVISION UNIT THREE, LOT 36 3042 ALICE AVENUE	06023C0690F	X
14-09-0315A	12/12/2013	TRACT NO. 23, PACIFIC MANOR SUBDIVISION UNIT ONE, LOT 10 3014 ALICE AVENUE	06023C0690F	X
14-09-0725A	2/20/2014	PORTION SECTION 7, T1N, R3E, HUMBOLDT BASE AND MERIDIAN 18995 STATE HIGHWAY 36	06023C1460F	X

Case No: 11-09-0847V

June 22, 2017

Community No.: 060060

Case No.	Date Issued	Project Identifier	Map Panel No.	Zone
14-09-1976A	3/11/2014	PACIFIC MANOR SUBDIVISION UNIT NO. 1, LOT 15 19 UPPER BAY ROAD	UNIT NO. 1,	
14-09-3244A	7/24/2014	SECTION 30, T6N, R1E 1850 DOLLY VARDEN ROAD	06023C0690F	X
15-09-0145A	11/25/2014	TRACT 33 PACIFIC MANOR UNIT THREE, LOT 52 3055 ALICE AVENUE	06023C0690F	х
16-09-0008A	11/5/2015	PACIFIC MANOR, UNIT 4, TRACT 46, LOT 92 2020 ERNEST WAY	06023C0690F	X
16-09-0105A	11/13/2015	PARCEL MAP NO. 438, PARCEL 2 4050 OLD RAILROAD GRADE ROAD	06023C0685F	X
16-09-0640A	12/11/2015	712 Price Creek School Road	06023C1220F	X
16-09-1552A	4/29/2016	PARCEL MAP NO. 1303, PARCEL 4 5280 SOUTH QUARRY ROAD	06023C0860F	х
16-09-1541A	5/4/2016	3645 HEINDON ROAD	06023C0689F	X
16-09-1880A	6/10/2016	TRACT NO. 33 PACIFIC MANOR UNIT THREE, LOT 45 1972 LESLIE COURT	06023C0690F	Х



Federal Emergency Management Agency

Washington, D.C. 20472

OCT 3 0 1997

Mr. Charles J. Roecklein, P.E. SHN Consulting Engineers & Geologists 812 West Wabash Eureka, California 95501-2138

IN REPLY REFER TO CASE NO. 98-09-088A Follows Case Nos. 97-09-013A and 97-09-917A Community: Humboldt County, California

Community No.: 060060 Map Panel Affected: 0615 C

Map Effective Date: August 5, 1986

218-70-R

Dear Mr. Roecklein:

We reviewed your request dated June 26, 1997, for a Letter of Map Amendment (LOMA). All required information for this request was received on October 22, 1997. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we determined the property described below is not in a Special Flood Hazard Area (SFHA), the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

Property Description: A portion of Sections 19, 20, 29, and 30, Township 6 North, Range 1 East,

Humboldt Meridian, as shown on the survey recorded as Instrument No. 12226 in Book 12 of Surveys, Page 13, in the Office of the Recorder, Humboldt County, See Belowfor affected parcels?

Floo and Source:

Mad River

This letter amends the above-referenced NFIP map to remove the property from the SFHA. The property is now in Zone X (unshaded), an area of minimal flooding outside the SFHA.

This letter corrects the property description shown in the LOMA dated August 25, 1997.

The enclosed document provides additional information about LOMAs. If you have any questions about this letter, please contact Ms. Agnes De Coca of our staff in Washington, DC, either by telephone at (202) 646-2746 or by facsimile at (202) 646-4596.

Sincerely,

Frederick H. Sharrocks, Jr., Chief Hazard Identification Branch

Francial Paroclas

Mitigation Directorate

Enclosure

Afforded (arrely A.P.Ns. 505-151-63 506-131-01-11 506-231-02,04-05 507-181-67

Case No.: 01-09-300A

LOMA



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

COMMUNITY AN	D MAP PANEL INFORMATION	LEGAL PROPERTY DESCRIPTION
COMMUNITY	CITY OF ARCATA, HUMBOLDT COUNTY, CALIFORNIA 	A portion of Sections 19 and 20, Township 6 North, Range 1 East, Humboldt Meridian, described as Parcels 1, 2, 3, 101661, and 101737 in the Grant Deed recorded as Instrument No. 2000-12273-10, in the Office of the Recorder, Humboldt County, California
MAP PANEL AFFECTED	NUMBER: 0600610002 E, 0600600615 D NAME: CITY OF ARCATA, HUMBOLDT COUNTY, CALIFORNIA DATE: 11/05/1997, 02/08/1999	·
FLOODING SOURCE: MAD RIVER		APPROXIMATE LATITUDE & LONGITUDE: 40.895; -124.104 SOURCE OF LATITUDE & LONGITUDE: PRECISION MAPPING STREETS 4.0

DETERMINATION

LOT	BLOCK/ SECTION	SUBDIVISION	STREET ADDRESS	OUTCOME WHAT IS REMOVED FROM THE SFHA	NEW FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NGVD)	LOWEST ADJACENT GRADE ELEVATION (NGVD)	LOWEST FLOOR ELEVATION (NGVD)	LOWEST LOT ELEVATION (NGVD)
1		Section 20		Property	С	13.0 feet			26.0 feet

Special Flood Hazard Area (SFHA) - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

ADDITIONAL CONSIDERATIONS (if the appropriate box is checked, please refer to the appropriate section on Attachment 1)

☑ 1. DETERMINATION TABLE (CONTINUED)

2. ZONE A

This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Amendment for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we determined the [structure(s) on the] property is/are not located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This document amends the effective NFIP map to remove the [structure / property] from the SFHA; therefore, the federal mandatory flood insurance requirement does not apply. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan. A Preferred Risk Policy (PRP) is available for buildings located outside the SFHA. Information about the PRP and how one can apply is enclosed.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (FEMA MAP) or by letter addressed to the FEMA LOMA DEPOT, 3601 Eisenhower Avenue, Suite 600, Alexandria, VA 22304-6439.

rellip. 8 - mentitop

Matthew B. Miller, P.E., Chief Hazards Study Branch Mitigation Directorate



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

1. DETERMINATION DOCUMENT TABLE (CONTINUED)

LOT	BLOCK/ SECTION	SUBDIVISION	STREET ADDRESS	OUTCOME WHAT IS REMOVED FROM THE SFHA	NEW FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NGVD)	LOWEST ADJACENT GRADE ELEVATION (NGVD)	LOWEST FLOOR ELEVATION (NGVD)	LOWEST LOT ELEVATION (NGVD)
2		Sections 19 and 20		Property	С	16.0 feet			19.0 feet
3		Section 20		Property	С	15.0 feet			27.0 feet
101661		Section 19		Property	С	16.0 feet			18.0 feet
101737		Section 20		Property	С	16.0 feet			23.0 feet

2. ZONE A

The NFIP map affecting this property depicts an SFHA that was determined using the best flood hazard data available to FEMA, but without performing a detailed engineering analysis. The flood elevation used to make this determination is based on approximate methods and has not been formalized through the standard process for establishing base flood elevations published in the Flood Insurance Study. This flood elevation is subject to change.

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the Federal Emergency Management Agency Map Assistance Center toll free at 1-877-336-2627 (FEMA MAP) or by letter addressed to the FEMA LOMA DEPOT, 3601 Eisenhower Avenue, Suite 600, Alexandria, VA 22304-6439.

Matthew B. Miller, P.E., Chief Hazards Study Branch Mitigation Directorate



Federal Emergency Management Agency

Washington, D.C. 20472

OCT 3 0 1997

Mr. Charles J. Roecklein, P.E. SHN Consulting Engineers & Geologists 812 West Wabash Eureka, California 95501-2138

IN REPLY REFER TO CASE NO. 98-09-088A Follows Case Nos. 97-09-013A and 97-09-917A Community: Humboldt County, California

Community No.: 060060 Map Panel Affected: 0615 C

Map Effective Date: August 5, 1986

218-70-R

Dear Mr. Roecklein:

We reviewed your request dated June 26, 1997, for a Letter of Map Amendment (LOMA). All required information for this request was received on October 22, 1997. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we determined the property described below is not in a Special Flood Hazard Area (SFHA), the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

Property Description: A portion of Sections 19, 20, 29, and 30, Township 6 North, Range 1 East,

Humboldt Meridian, as shown on the survey recorded as Instrument No. 12226 in Book 12 of Surveys, Page 13, in the Office of the Recorder, Humboldt County, See Belowfor affected parcels: California

Floo ling Source:

Mad River

This letter amends the above-referenced NFIP map to remove the property from the SFHA. The property is now in Zone X (unshaded), an area of minimal flooding outside the SFHA.

This letter corrects the property description shown in the LOMA dated August 25, 1997.

The enclosed document provides additional information about LOMAs. If you have any questions about this letter, please contact Ms. Agnes De Coca of our staff in Washington, DC, either by telephone at (202) 646-2746 or by _facsimile at (202) 646-4596.

Sincerely,

Frederick H. Sharrocks, Jr., Chief Hazard Identification Branch

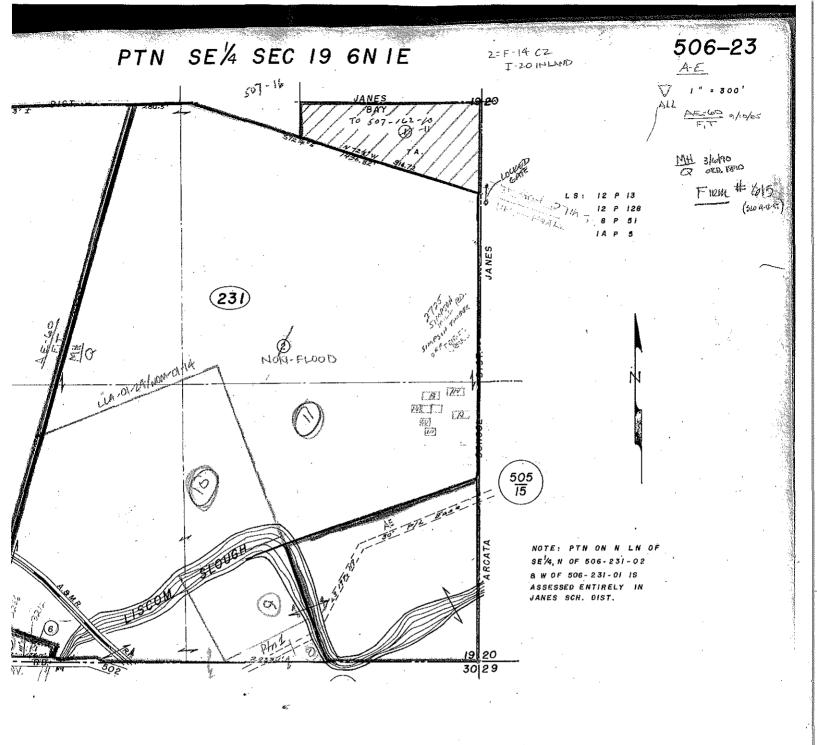
Enclosure

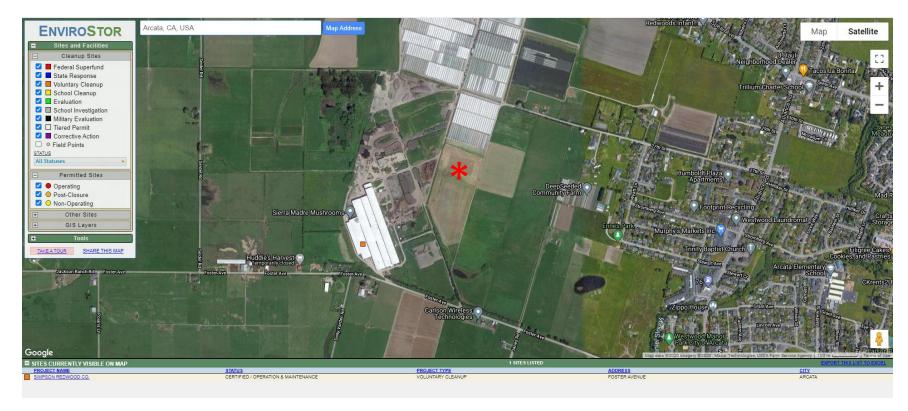
ce: Community Map Repository

Afficial Clared A. P. N. 505 - 131 - 01 - 04 - 05

506 - 231 - 02 - 04 - 05

Charged to





EnviroStor records search (accessed September 30, 2020)