Biological Resources Assessment

Arcata Land Company, LLC

Assessor's Parcel Number Parcel "D"
Arcata, California

Prepared for:
Arcata Land Company

June 2020
017062

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1062 G Street, Ste. I, Arcata, CA 95521-5800

Reference: 017062

June 17, 2020

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

Subject: Biological Resources Assessment

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:

1062 G St., Suite I
Arcata, CA 95521-5800
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June 2020

QA/QC:GSW

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Abbreviations and Acronyms

C°	degrees Celsius
F°	degrees Fahrenheit
AE	Agriculture Exclusive
APN	Assessor's Parcel Number
BIOS	Biogeographical Information and Observation System
BMP	best management practices
BRA	Biological Resources Assessment
C	candidate species status
CCH	Consortium of California Herbaria
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CT	candidate threatened species status
CWA	Clean Water Act
D	delisted species status
DPS	Northern California distinct population segment/species status
E	endangered species status
EPA	U.S. Environmental Protection Agency
ESU	evolutionarily significant unit/species status
FESA	Federal Endangered Species Act
FP	fully protected species status
G1/S1	critically imperiled species heritage rank
G2/S2	imperiled species heritage rank
G3/S3	vulnerable species heritage rank
G4/S4	apparently secure species heritage rank
G5/S5	species heritage rank
IPaC	Information for Planning and Conservation
LSA	Lake or Streambed Alteration
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Planning
NMFS	National Marine Fisheries Service
NPPA	Native Plant Protection Act
PT	proposed threatened species status
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SMAO	Streamside Management Area Ordinance
SSC	species of special concern
SWRCB	State Water Resources Control Board
T	threatened species status
U.S.	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VegCAMP	Vegetation Classification and Mapping Program
WDR	Waste Discharge Requirement
WL	watch list species status

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*).

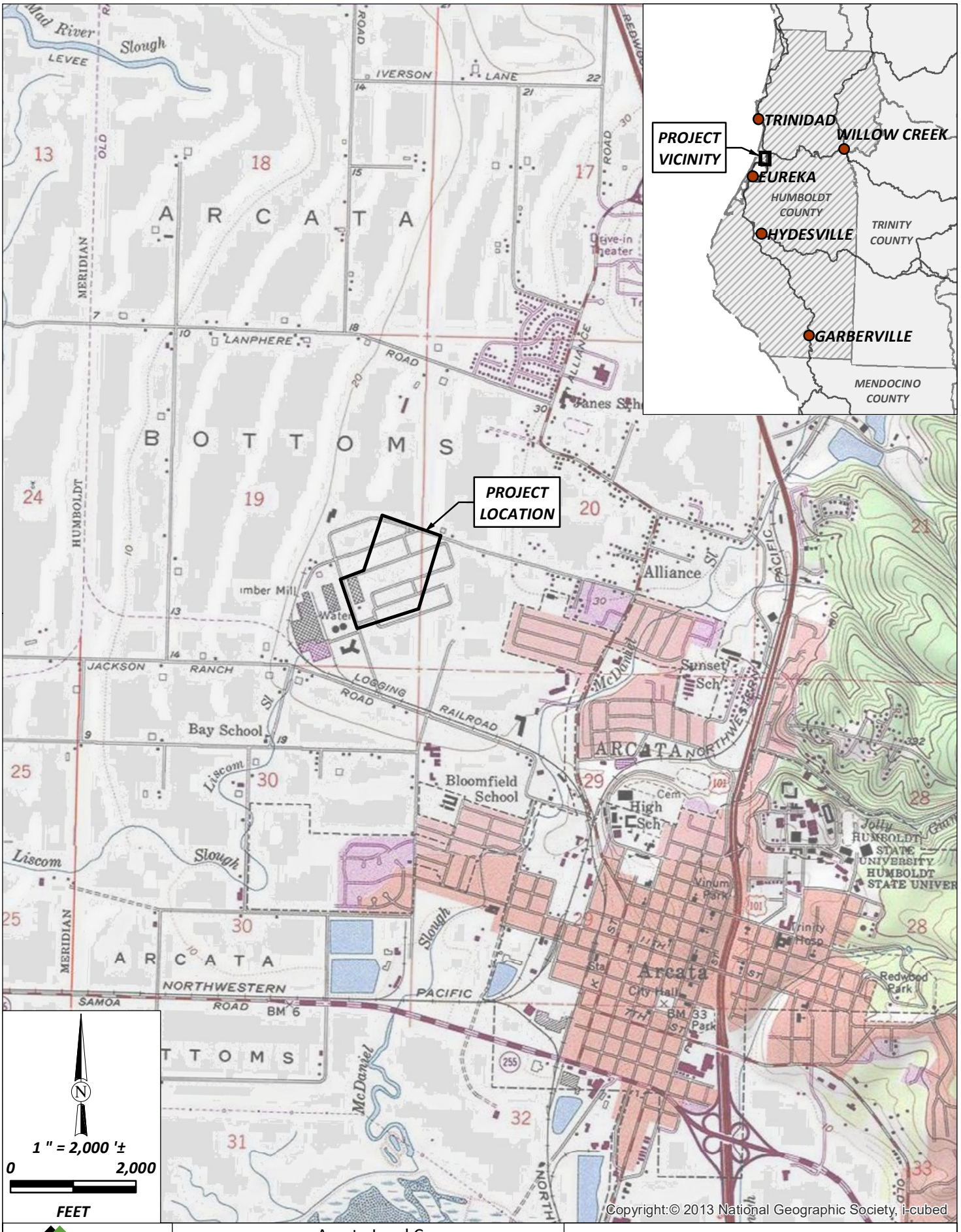
3.0 Methodology

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).



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SHN	Arcata Land Co Biological Resources Assessment Arcata, California	Project Location Map Parcel D SHN 017062
	July 2019 | BIO_D_Fig1_ProjectLocation	Figure 1

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SHN	Arcata Land Co Biological Resources Assessment Arcata, California	Study Area & Special Status Species Parcel D SHN 017062
	July 2019 | BIO_D_Fig2_StudyAreaAndSpecialStatus	Figure 2

- 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:
    - there is no known record of occurrence in the vicinity, and
    - 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:
    - there are known records of occurrence in the vicinity, and
    - 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
    - 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

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Photos 1

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.

Species Lists 2

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
Abronia umbellata var. breviflora	pink sand-verbena	Nyctaginaceae	None	None	G4G5-T2	S1	1B.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	S3	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

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
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 lenticularis var. limnophila	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	S3	2B.2	April-August	Marsh & swamp (brackish or freshwater).	0-200 m.	Low

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
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	S3	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 *Salicornia, Distichlis, Jaumea, Spartina,* 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

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
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	S4	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.	Broadleaf upland forest, north coast coniferous forest.	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

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
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	S3	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	S3	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

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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	S3	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 latibracteata	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	S3	4.3	April-June	Cismontane woodland.	In oak woodlands upland from the coast redwood forests & along roadsides. 300-800 m.	Low

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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	1B.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	Orchidaceae	None	None	G5	S4	4.2	Feb.-July	Low montane conifer forest, N. coast conifer forest, Bog & fen.	5-1,370 m.	Low

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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	S3	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	S4	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

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Oenothera wolfii	Wolf's evening-primrose	Onagraceae	None	None	G2	S1	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	Orchidaceae	None	None	G3	S3	1B.2	May-Sept.	N. coast conifer forest, low montane conifer forest, broadleaf upland forest.	Sometimes on serpentine. Forest duff, mossy banks, rock outcrops, and muskeg. 45-1,615 m.	None
Pityopus californicus	California pinefoot	Ericaceae	None	None	G4G5	S4	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	S4	4.2	March-August	Meadow & seep, low montane conifer forest, N. coast conifer forest, riparian forest.	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	N. coast conifer forest, Redwood forests.	Grows over logs and stumps in moist, wet places. 5-1,395 m.	None

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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 checkerbloom	Malvaceae	None	None	G3	S3	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 checkerbloom	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 checkerbloom	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	Caryophyllaceae	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

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Trichodon cylindricus	cylindrical trichodon	Ditrichaceae	None	None	G4	S2	2B.2	Moss	Broadleaf upland forest, upper montane conifer forest.	Openings on sandy or clay soil on roadsides, stream banks, trails, fields. 50-1,500 m.	Low
Usnea longissima	Methuselah's beard lichen	Parmeli-aceae	None	None	G4	S4	4.2	Lichen	North coast coniferous forest, broadleaf upland forest.	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, bogs and fens.	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
CT: candidate threatened
D: delisted
DPS: distinct population segment
E: endangered
ESU: evolutionarily significant unit
FP: fully protected
PT: proposed threatened
SSC: species of special concern
T: threatened
WL: watch list

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

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

Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Amphibians								
Ascaphus truei	Pacific tailed frog	None	None	SSC	G4	S3S4	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, eggs, and larvae.	None
Plethodon elongatus	Del Norte salamander	None	None	WL	G4	S3	Occurs in montane hardwood-conifer, redwood, Douglas-fir & ponderosa pine habitats. Restricted to perennial montane streams. Tadpoles require water below 15 degrees C.	None
Rana aurora	northern red-legged frog	None	None	SSC	G4	S3	Humid forests, woodlands, grasslands, & streamsides in NW California, usually near dense riparian cover. Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season.	Moderate
Rana boylii	foothill yellow-legged frog	None	CT	SSC	G3	S3	Partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.	Low
Rhyacotriton variegatus	southern torrent salamander	None	None	SSC	G3G4	S2S3	Coastal redwood, Douglas-fir, mixed conifer, montane riparian and montane hardwood-conifer habitats. Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rock within trickling water.Old growth forest.	None
Birds								
Accipiter cooperii	Cooper's hawk	None	None	WL	G5	S4	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, live oaks.	High
Accipiter striatus	sharp-shinned hawk	None	None	WL	G5	S4	Ponderosa pine, black oak, riparian deciduous, mixed conifer & Jeffrey pine habitat. Prefers riparian. North-facing slopes, with plucking perches are critical requirements. Nests usually within 275 ft of water.	Moderate

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Arcata Land Company, Parcel "D"

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

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Arcata Land Company, Parcel "D"

Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Circus cyaneus	northern harrier	None	None	SSC	G5	S3	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 fields, estuaries, open floodplains, and marshes.	High/Present
Coccyzus americanus	yellow-billed cuckoo	T	E	BCC, S	G5T2T3	S1	Yellow-billed Cuckoos use wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes.	None
Contopus cooperi	olive-sided flycatcher	None	None	SSC	G4	S4	Winters at forest edges and clearings where tall trees or snags are present. Nest is an open cup of twigs, rootlets, and lichens, placed out near tip of horizontal branch of a tree.	Low
Coturnicops noveboracensis	yellow rail	None	None	SSC	G4	S1S2	In winter, drier fresh-water and brackish marshes, as well as dense, deep grass, and rice fields. Nest on the ground.	None
Egretta thula	snowy egret	None	None	None	G5	S4	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 fields.	Moderate
Elanus leucurus	white-tailed kite	None	None	FP	G5	S3S4	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 perching.	High

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Arcata Land Company, Parcel "D"

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Empidonax traillii	willow flycatcher	None	E	S	G5T3T4	S1S2	In the Pacific Northwest, also breed in drier scrubby 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 2–5 feet above the ground.	None
Falco columbarius	merlin	None	None	WL	G5	S3S4	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 subspecies nests mostly in coastal areas, along rivers.	Moderate
Falco peregrinus anatum	American peregrine falcon	D	D	FP	G4T4	S3S4	Elevations up to about 12,000 feet, as well as along rivers and coastlines or in cities. Any open habitat, but with a greater likelihood along barrier islands, mudflats, coastlines, lake edges, and mountain chains.	Moderate
Fratercula cirrhata	tufted puffin	None	None	SSC	G5	S1S2	Breeds on coastal slopes in ground burrows, sometimes under boulders and piles of rocks, occasionally under dense vegetation.	None
Haliaeetus leucocephalus	bald eagle	Delisted	E	FP	G5	S3	Ocean shore, lake margins, & rivers for both nesting & wintering. Most nests within 1 mi of water. Nests in large, old-growth, or dominant live tree w/open branches, especially ponderosa pine. Roosts communally in winter.	Low
Icteria virens	yellow-breasted chat	None	None	SSC	G5	S3	Summer resident; inhabits riparian thickets of willow & other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests w/i 10 ft of ground.	Low
Numenius americanus	long-billed curlew	None	None	WL	G5	S2	Breeds in upland shortgrass prairies & wet meadows in northeastern California. Habitats on gravelly soils and gently rolling terrain are favored over others.	None
Nycticorax nycticorax	black-crowned night heron	None	None	None	G5	S4	Marsh, swamp, riparian forest, riparian woodland, wetland. Colonial nester, in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.	Low

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Arcata Land Company, Parcel "D"

Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Oceanodroma furcata	fork-tailed storm-petrel	None	None	SSC	G5	S1S2	Pelagic, foraging and wintering in nearshore waters. Nests in burrows and crevices.	None
Pandion haliaetus	osprey	None	None	WL	G5	S4	Near rivers, lakes, reservoirs, lagoons, swamps, and marshes. Nests are usually built on snags, treetops, or crotches between large branches and trunks; on cliffs or human-built platforms.	Low
Passerculus sandwichensis alaudinus	Bryant's savannah sparrow	None	None	SSC	G5T2T3	S2S3	Savannah Sparrows live in grasslands with few trees, including meadows, pastures, grassy roadsides, sedge wetlands, and cultivated fields planted with cover crops like alfalfa. Near oceans, they also inhabit tidal saltmarshes and estuaries.	High
Pelecanus occidentalis californicus	California brown pelican	D	D	FP	G4T3	S3	Colonial nester on coastal islands just outside the surf line. Nests on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators. Roosts communally.	None
Phalacrocorax auritus	double-crested cormorant	None	None	WL	G5	S4	Colonial nester on coastal cliffs, offshore islands, & along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	None
Poecile atricapillus	black-capped chickadee	None	None	WL	G5	S3	Inhabits riparian woodlands in Del Norte and northern Humboldt counties. Mainly found in deciduous tree-types, especially willows and alders, along large or small watercourses.	Low
Ptychoramphus aleuticus	Cassin's auklet	None	None	SSC	G4	S2S4	Mostly pelagic. Nests on islands in ground burrows. Dives in the ocean for prey.	None
Rallus obsoletus obsoletus	California Ridgway's rail	E	E	FP	G5T1	S1	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 saltmarshes dominated by cordgrass and pickleweed, or in mangroves.	None
Riparia riparia	bank swallow	None	T	None	G5	S2	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	None

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

Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Strix occidentalis caurina	Northern spotted owl	T	T	SSC, S	G3T3	S2S3	Mature coniferous forest stands with large trees and a complex array of vegetation types, sizes and ages. Typically in dense section of old forest, the nest is well protected from open sky by a dense tree canopy in a broken-off treetop or in a cavity.	None
				Fish				
Acipenser medirostris	green sturgeon	T	None	SSC	G3	S1S2	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. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	None
Eucyclogobius newberryi	tidewater goby	E	None	SSC	G3	S3	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, they need fairly still but not stagnant water & high oxygen levels.	None
Spirinchus thaleichthys	longfin smelt	C	T	SSC	G5	S1	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 be found in completely freshwater to almost pure seawater.	None
Thaleichthys pacificus	eulachon	T	None	-	G5	S3	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 water velocities & bottom of pea-sized gravel, sand & woody debris.	None
Entosphenus tridentatus	Pacific lamprey	None	None	SSC	G4	S4	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 areas for spawning with water temps between 12-18 C. Ammocoetes need soft sand or mud.	None

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

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

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

Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Bombus occidentalis	western bumble bee	None	None	S	G2G3	S1	Once common & widespread, species has declined precipitously from central CA to southern B.C. Nest in cavities or abandoned burrows.	Moderate
Cicindela hirticollis gravida	sandy beach tiger beetle	None	None	None	G5T2	S2	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 zone. Subterranean larvae prefer moist sand not affected by wave action.	None
Mammals								
Aplodontia rufa humboldtiana	Humboldt mountain beaver	None	None	None	G5TNR	SNR	North facing slopes near ample water sources, with dense cover, on steep hillsides with loose soil. Dense herbaceous cover is needed for protection from predators, as well as for forage material, while steep loose hillsides allow for burrow creation.	None
Erethizon dorsatum	North American porcupine	None	None	None	G5	S3	Upper and lower montane coniferous forests. Make their dens in hollow trees or in rocky areas. Spend much of the time in trees.	None
Arborimus albipes	white-footed vole	None	None	SSC	G3G4	S2	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 under logs or rock.	None
Arborimus pomo	Sonoma tree vole	None	None	SSC	G3	S3	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, hemlock or spruce.	None
Pekania pennanti	fisher - West Coast DPS	None	T	SSC	G5T2T3Q	S2S3	Southern Oregon, Northern California and the Southern Sierra Nevada Mountains, north coast coniferous forest, oldgrowth, riparian forest.	None
Corynorhinus townsendii	Townsend's big-eared bat	None	None	SSC	G3G4	S2	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls & ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	None

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

Scientific Name	Common Name	FedList	CalList	Other Status	Global Rank	State Rank	Habitats	Potential of occurrence
Myotis evotis	long-eared myotis	None	None	S	G5	S3	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.	None
Mollusks								
Margaritifera falcata	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.	None
Anodonta californiensis	California floater	None	None	S	G3Q	S2?	Typically inhabit lakes, reservoirs, and slow-moving streams with mud or sand substrates, although they have also been found in rivers and creeks with gravel substrates	None
Reptiles								
Chelonia mydas	green sea turtle	None	T	None	G3	S1	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 on sandy beaches.	None
Emys marmorata	western pond turtle	None	None	SSC	G3G4	S3	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 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
ESU: evolutionarily significant unit		

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
Shrubs			
Cotoneaster franchettii	Franchett's cotoneaster	Rosaceae	N[2]
Rosa spp.	cultivated rose	Rosaceae	N
Rubus armeniacus	Himalayan berry	Rosaceae	N
Sedges and Rushes			
Carex densa	dense sedge	Cyperaceae	Y
Carex obnupta	slough sedge	Cyperaceae	Y
Cyperus eragrostis	tall flat sedge	Cyperaceae	Y
Eleocharis macrostachya	common spikerush	Cyperaceae	Y
Juncus effusus ssp. *pacificus*	common rush	Juncaceae	Y
Grasses			
Agrostis stolonifera	creeping bentgrass	Poaceae	N
Aira caryophyllea	silver hairgrass	Poaceae	N
Alopecurus pratensis	meadow foxtail	Poaceae	N
Anthoxanthum odoratum	sweet vernal grass	Poaceae	N
Avena barbata	wild oat	Poaceae	N
Briza maxima	large quaking grass	Poaceae	N
Briza minor	small quaking grass	Poaceae	N
Bromus carinatus var. *carinatus*	California brome	Poaceae	Y
Bromus diandrus	rip-gut brome	Poaceae	N
Bromus hordeacus	soft chess	Poaceae	N
Cortaderia jubata	pampas grass	Poaceae	N
Dactylis glomeratum	orchard grass	Poaceae	N
Deschampsia caespitosa ssp. holciformis	tufted hair grass	Poaceae	Y
Festuca arundinacea	California oat-grass	Poaceae	Y
Festuca bromoides	brome fescue	Poaceae	N
Festuca microstachys	small fescue	Poaceae	Y
Festuca Perennis	perennial rye grass	Poaceae	N
Holcus lanatus	velvet grass	Poaceae	N
Phalaris arundinacea	reed canary grass	Poaceae	N
Phleum pretense	Timothy grass	Poaceae	N
Poa annua	annual grass	Poaceae	N
Poa pratensis	Kentucky bluegrass	Poaceae	N
Herbs			
Allium triquetrum	three cornered leek	Alliaceae	N
Bellis perenne	English daisy	Asteraceae	N
Brassica rapa	common mustard	Brassicaceae	N
Callitriche heterophylla var. heterophylla	varied leaved water starwort	Plantaginaceae	Y
Cerastium glomeratum	mouse-ear chickweed	Caryophyllaceae	N
Conium maculatum	poison hemlock	Apiaceae	N
Dipsacus fullonum	Fuller's teasel	Dipsacaceae	N
Epilobium ciliatum	fringed willow herb	Onagraceae	N
Erodium circutarium	heron's bill	Geraniaceae	N
Erodium moschatum	whitestem filaree	Geraniaceae	N
Euphorbia peplans	petty spurge	Euphorbiaceae	N
Fragaria vesca	California strawberry	Rosaceae	Y

Table 3 Botanical Species Observed 5/2/2019, 7/19/2019 Arcata Land Co. Parcel "D", Arcata, CA			
Scientific Name	**Common Name**	**Family**	**Native?**
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	Rosaceae	Y
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	Y
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**

1. Y: Yes
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

www.shn-engr.com

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
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Arcata, California

Prepared for:

Rudoph Visser
Arcata Land Company, LLC

Prepared by:

812 W. Wabash Ave.
Eureka, CA 95501
707-441-8855

June 2020

QA/QC:CIW

Table of Contents

Appendices

List of Illustrations

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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°.

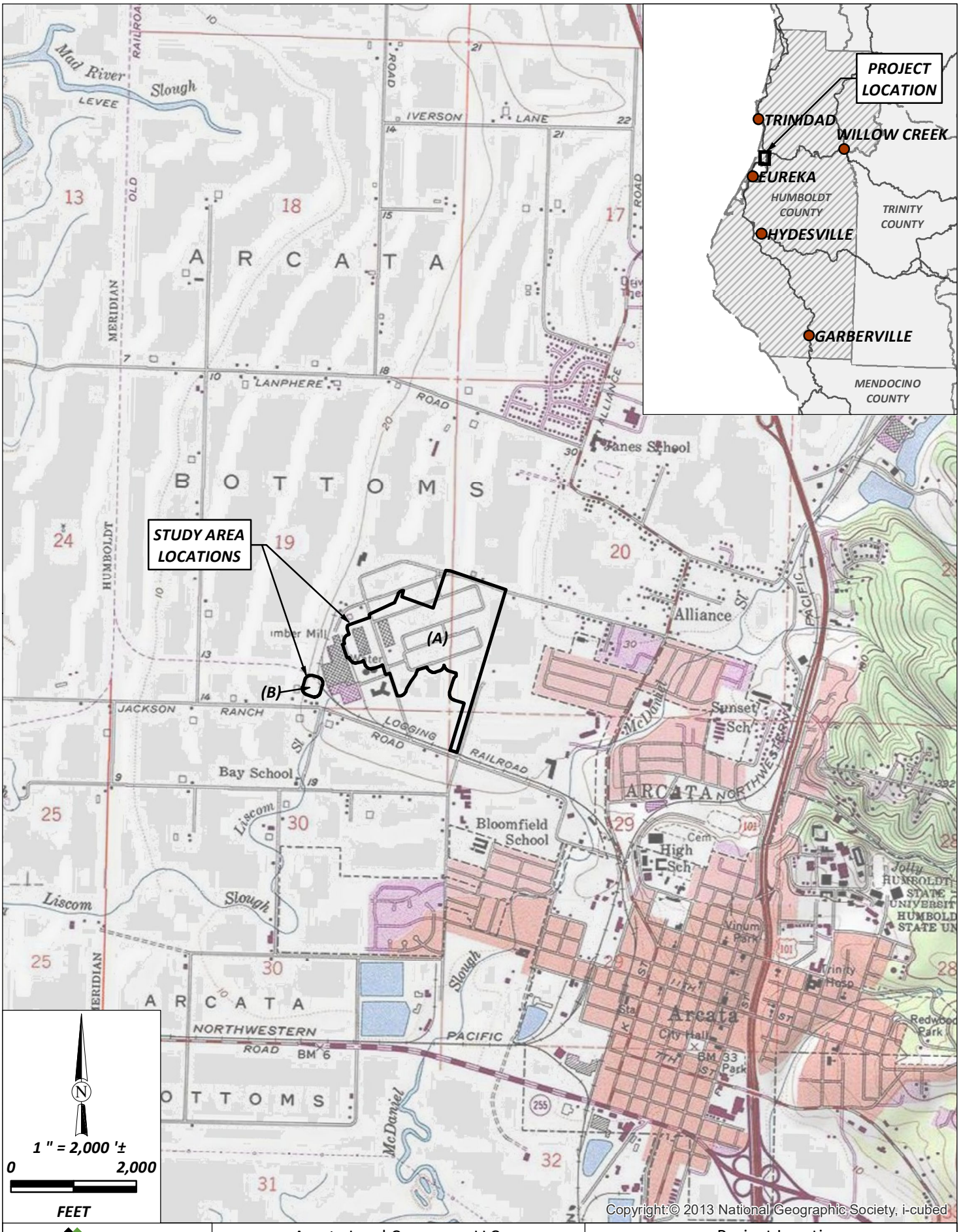
2.0 Project Description

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.



Path: \\Eureka\Projects\2017\017062-ArcataLandCo\GIS\PROJ_MXD\WetlandDelineation\WD_Fig1_ProjectLocation.mxd User Name: jsousa

SHN	Arcata Land Company, LLC. Wetland & Other Waters Delineation Report Arcata, California	Project Location Map SHN 017062
	May 2020 | WD_Fig1_ProjectLocation	Figure 1

LATITUDE: 40.887573
LONGITUDE: -124.113457

APN
506-231-011

TP7U

TP5U

APN
507-181-007

TP6U

210

116

TP11U

TP8U

APN
505-151-003

APN
506-231-010

STUDY AREA (A)

TP4U

127

APN
506-231-004

210

TP3U

TP1U

TP15U

TP16U

TP10U

TP2U

TP12W

WETLAND #2
(874 SQFT)

WETLAND #1
(5,144 SQFT)

127

STUDY AREA (B)

TP14U

TP13U

TP17W

210

133

APN
506-231-010

APN
505-151-004

127

LISCOM
SLOUGH

TP9U

LATITUDE: 40.881523
LONGITUDE: -124.099973

EXPLANATION

- WETLAND TEST PITS
- WETLANDS
- CULVERT
- DITCHES
- SURFACE FLOW DIRECTION
- STUDY AREA
- PROJECT PARCELS
- PARCELS
- NRCS SOIL BOUNDARY
- 116 — NRCS SOIL MAP UNIT (DEFINITIONS BELOW)

N

1"=300'±

0 300

FEET

116 - SWAINSLOUGH, 0 TO 2 PERCENT
127 - JOLLYGIANT, 0 TO 2 PERCENT
133 - ARLYNDA, 0 TO 9 PERCENT
210 - DUNGAN, 0 TO 2 PERCENT

IMAGE SOURCE: GOOGLE EARTH; DATED 5/26/2016;
PARCEL DATA: HUMBOLDT COUNTY GIS, 2017;
SOIL BOUNDARIES: NRCS, 2018

Arcata Land Company, LLC.
Wetland & Other Waters Delineation Report
Arcata, California

Wetland & OHWM
Delineation Map
SHN 017062

May 2020 | WD_Fig2_WetlandsAndOHWM | Figure 2

Path: \\Eureka\Projects\2017\017062-ArcataLandCo\GIS\PROJ_MXD\WetlandDelineation\WD_Fig2_WetlandsAndOHWM.mxdUser Name: jsousa

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. WETS[1] Rainfall Data
Arcata Land Company, LLC
Arcata, 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.
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.

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*

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 (R*ubus 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
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: 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
Properties and qualities
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
Bg1 - 16 to 33 inches: silty clay loam
Bg2 - 33 to 47 inches: loam
Bg3 - 47 to 63 inches: very fine sandy loam
Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
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
Properties and qualities
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
Properties and qualities
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

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 method[1] 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 index[2] 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

[1] The 50/20 rule: for each stratum of the plant community, dominant species are the most abundant species that (when ranked in descending order of abundance and cumulatively totaled) immediately exceed 50% of total dominance measure for the stratum, plus any additional species that individually comprise 20% or more of the total dominance measure for the stratum (USACE, 2010).
[2] The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot or other sampling unit, where each indicator status category is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5) and weighting is by abundance (absolute percent cover).

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

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.

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

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 OHWM[1] 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

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Site Photographs 1

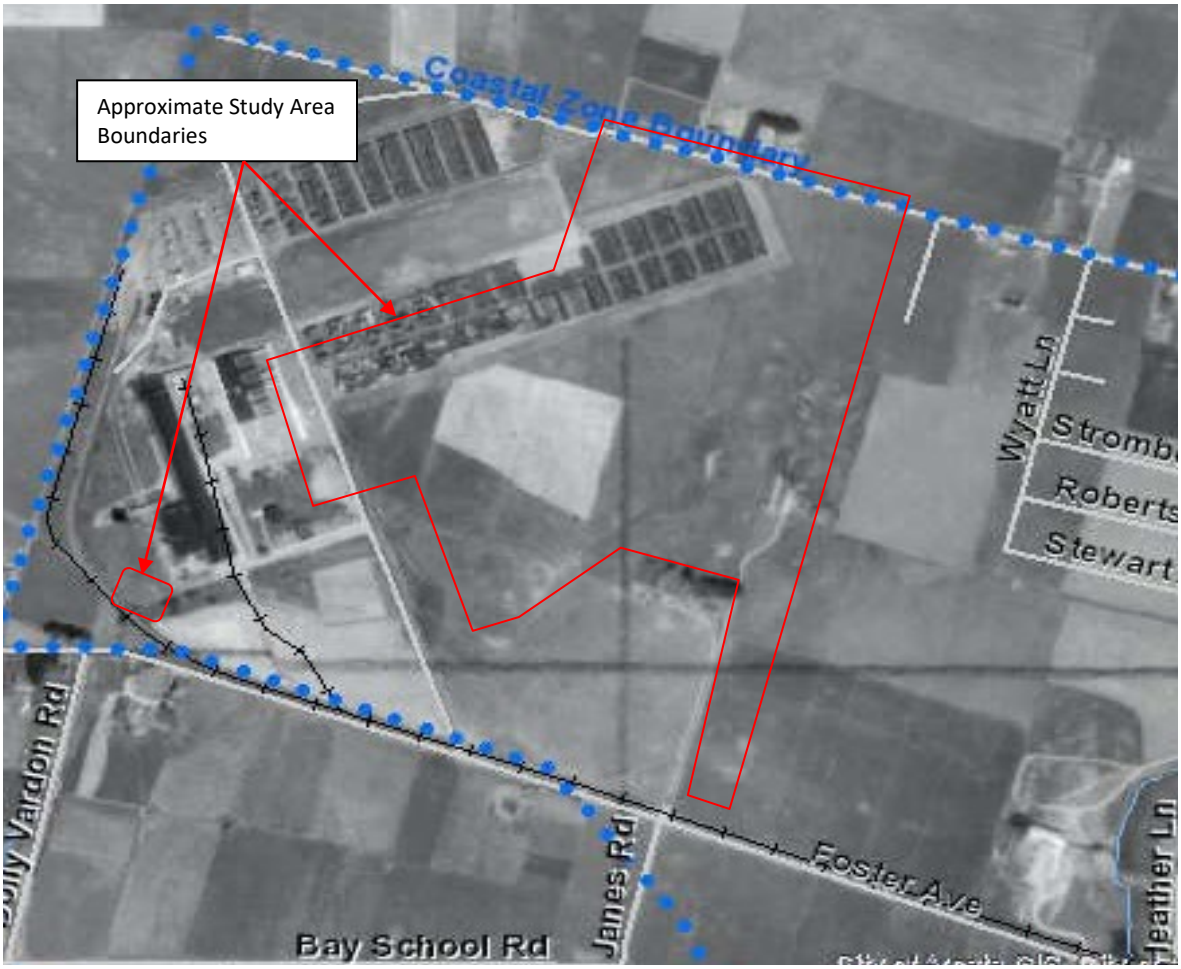

Photo 1: 1954 Aerial mosaic from Arcata GIS website (City of Arcata, 2017)


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 6: TP6U maintained ditch looking south

Photo 7: Maintained ditch looking east towards TP7U

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 Inventory 2

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 Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Plant List 3

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

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

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

Wetland Determination Data Forms

4

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/18/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP1U

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 20 T06N R01E

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

Subregion (LRR): A, MLRA 4B Lat: 40.9852540° Long: -124.0995360° Datum: Humboldt

Soil Map Unit Name: Arlynda 0-9% slopes NWI classification: none

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

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

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

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

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

Remarks: Chosen for lowest elevated area in vicinity (local low spot) - TP1U is upland and no wetland paired plot was done.

VEGETATION – Use scientific names of plants.

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

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

Herb Stratum (Plot size: 5ft)			
1. Festuca perennis	60	Y	FAC
2. Dactylis glomerata	5	N	FACU
3. Holcus lanatus	5	N	FAC
4. Trifolium (not repens) sp.	10	N	*
5. Plantago lanceolata	5	N	FACU
6. Rumex crispus	2	N	FAC
7. other grasses *	10	N	*
8.			
9.			
10.			
11.			
	97	= Total Cover	

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

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: * not identifiable @ time of year.

Sampling Point: TP14

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	95	7.5YR 3/4	5	RM	PL	SiCL	Roots similar color as redox
2-17	10YR 3/2	70	7.5YR 3/4	<1	RM	PL	SiCL	
2-17	10YR 4/2	30					SiCL	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) no
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/18/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP24

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 20 T06N R01E

Landform (hillslope, terrace, etc.): Marine terrace Local relief (concave, convex, none): none Slope (%): 2-4

Subregion (LRR): A, MLRA 4B Lat: 40.9846870° Long: -124.100532° Datum: Humboldt

Soil Map Unit Name: Arlynda 0-9% slopes NWI classification: none

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

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

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

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

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

Remarks: -TP24 is upland & does not have a paired wetland test pit.
- Rounded gravel & rusty iron nail. → historic fill.

VEGETATION – Use scientific names of plants.

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

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

Herb Stratum (Plot size: 5ft)			
1. Dactylis glomerata	25	Y	FACU
2. Festuca perennis	35	Y	FAC
3. Holcus lanatus	15	N	FAC
4. Trifolium sp. (not repens) *	10	N	*
5. Rumex crispus	2	N	FAC
6. Geranium Mollis	2	N	NL
7. Daucus Carota	2	N	FACU
8.			
9.			
10.			
11.			
	91 ✓	= Total Cover	

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

% Bare Ground in Herb Stratum 15

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: * No ID @ time of year

SOIL

Sampling Point: TP21

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-21	10YR 3/2	100	7.5YR 3/4	<1	RM	M	S.L	Fill
			10YR 5/6	<1	RM	M		

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Occational rounded gravel incongruous w/ Matrix color → fill. Rusty nail & metal. Appears to have been old slough scar filled in ~1990's

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/18/2017

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP3W

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 19 T06N R01E

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

Subregion (LRR): A, MLRA 4B Lat: 40.885190° Long: -124.101958° Datum: Humboldt

Soil Map Unit Name: Jollygiant 0-2% NWI classification: none

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

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

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

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

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

Remarks: Recently filled field.

VEGETATION – Use scientific names of plants.

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

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

Herb Stratum (Plot size: 5ft)			
1. Raphanus sativus (wild radish)	30	Y	NL
2. Trifolium spp.	5	N	*
3. Geranium Molle	10	Y	NL
4. other unknown herbs *	5	N	*
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50	= Total Cover	

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

% Bare Ground in Herb Stratum 55

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

* Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: *=> recently filled. seedlings.

TP34 SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR3/2	100	10YR5/6	<1	RM	M		

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/18/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP4U

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 19 T06N R01E

Landform (hillslope, terrace, etc.): marine terrace Local relief (concave, convex, none): none Slope (%): 2-3

Subregion (LRR): A, MLRA 4B Lat: 40.886348° Long: -124.101729° Datum: Humboldt

Soil Map Unit Name: Jolly giant 0-2% NWI classification: PEMD

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

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

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

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

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

Remarks: USFW NWI mapped area. plowed field. seeded w/ clover. flat surface

VEGETATION – Use scientific names of plants.

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

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

Herb Stratum (Plot size: 5ft)			
1. Trifolium sp* (X)	10	Y	*(NL) CW
2. Raphanus sativus	2	N	NL
3. unknown seedlings *	3	Y	*
4. (burseem clover identified later by employee - CW)			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15	= Total Cover	

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

% Bare Ground in Herb Stratum 85

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0-1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: *(0-50%) (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50% CW

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

* Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: * recently tilled field.

SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: TP4U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/2	100						

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks: Till depth ~8". Hit harder horizon below this level.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No ✓

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/18/2017

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP 5 U

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec 20 T06N R01E

Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2-3

Subregion (LRR): A, MLRA 4B Lat: 40.888390° Long: -124.100950° Datum: Humboldt

Soil Map Unit Name: Dilgiant 0-2% NWI classification: PEMID

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

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

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

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

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

Remarks:
- recently tilled field.
- @ edge of fava bean field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Tritolium sp.	5	Y	NL (W)
2. Festuca perennis	8	Y	FAC
3. Geranium Molle	2	N	NL
4.			
5. → Later identified as bursage			
6. clover by employee - (W)			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 90

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No _____

Remarks:
* recently tilled
*

TP5U

SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10 YR 3/2	99	10YR 5/8	1	RM	M	CL	
10-19	10 YR 3/2	92	10YR 5/8	8	RM	M	CL	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Prof. judgement. F3 must start within 10" Redox starts ~10" but weakly (2%) & increases in % @ 11". Not calling this a hydric soil

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/18/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP64

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 20 T06N R01E

Landform (hillslope, terrace, etc.): drainage ditch Local relief (concave, convex, none): concave Slope (%): 2-3

Subregion (LRR): A, MLRA 4B Lat: 40.688100° Long: -124.099942° Datum: Humboldt

Soil Map Unit Name: Dungan 0-2% NWI classification: none

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

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

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

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

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

Remarks: Drainage ditch cleaned by excavator. Local low spot is linear feature that was historically graded to drain water.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
1.			
2. Ø			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5 ft)			
1.			
2.			
3. Ø			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Festuca perennis	60	Y	FAC
2. Bersseen clover	10	N	NL
3. Plantago lanceolata	5	N	FACU
4. Ranunculus repens	5	N	FAC
5. Plantago major	2	N	FAC
6. Hypochaeris radicata	2	N	FACU
7. Trifolium repens	15	N	FAC
8.			
9.			
10.			
11.			
	99	= Total Cover	
Woody Vine Stratum (Plot size: 5 ft)			
1. Ø			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 15

Great plan

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? ✓ Yes ____ No ____

Remarks:

SOIL

Sampling Point: TP64

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 3/2	10					CL	
1-24	10YR 3/2	10					C	
1-24	10YR 4/2	70	10YR 5/8	20	RM	M	C	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: on side of graded drainage ditch

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) no
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks: Odd reaction negative

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/18/17

Applicant/Owner: Arcata Land Co State: CA Sampling Point: TP 14

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 20 T06N R01E

Landform (hillslope, terrace, etc.): drainage swale Local relief (concave, convex, none): concave Slope (%): 3-5

Subregion (LRR): A, MLRA 4B Lat: 40.888670° Long: -124.099720° Datum: Humboldt

Soil Map Unit Name: Dungan 0-2% NWI classification: PEMID

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

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

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

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

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

Remarks: Newly cleaned ditch w/ excavator. Cleaned annually (Communication Mr. Lane). TP in lowest swale elevation. Excavator said this soil layer much lower than originally. Took soil from here to grade

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30ft)			
1. Monterey Cypress	2		NL
2.			
3.			
4.			
	2	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5 ft)			
1.			
2. Ø			
3.			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Festuca perennis	65	Y	FAC
2. Plantago lanceolata	10	N	FACU
3. Geranium molle	5	N	NL
4. unkn. grasses *	5	N	*
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 5ft)			
1. Ø			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- * Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: * not identifiable @ this time of year.

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SOIL

Sampling Point: P74

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-17	10YR 3/2	25	10YR 5/4	5			SiCL	
	10YR 4/2	60	10YR 4/6	10				
17-22	10YR 3/2						SL	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Below topsoil line - excavated ~ 4" topsoil prior to our test pit. Excavator operator discussed original surface ~ 3' above what it is now - before 1990's field grading.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Foster Avenue | City/County: Humboldt | Sampling Date: 12/19/17

Applicant/Owner: Arcata Land Co. | State: CA | Sampling Point: TP4

Investigator(s): Cindy Wilcox & Greg OConnell | Section, Township, Range: Sec. 20 T06N R01E

Landform (hillslope, terrace, etc.): marine terrace | Local relief (concave, convex, none): none | Slope (%): 2-4

Subregion (LRR): A, MLRA 4B | Lat: 40.886990° | Long: -124.099322° | Datum: Humboldt

Soil Map Unit Name: Dungan 0-2% | NWI classification: none

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

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

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

Herb Stratum (Plot size: 5 ft)			
1. Dactylus glomerata	35	Y	FACU
2. Holcus lanatus	15	N	FAC
3. Festuca perennis	25	Y	FAC
4. unk. grasses **	15	N	*
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	

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

% Bare Ground in Herb Stratum 25

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ** Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: ** not identifiable @ this time of year

SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: TP84

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100	—				CL	
16-24	2.5Y 4/2	80	—				C	
16-24	2.5Y 3/2	20	—				C	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) NO
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/19/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP9U

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec 29 T06N R01E

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

Subregion (LRR): A, MLRA 4B Lat: 40.881931° Long: -124.100415° Datum: Humboldt

Soil Map Unit Name: Jolly giant 0-2% NWI classification: PEMID

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Ø			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5ft)			
1.			
2.			
3. Ø			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Juncus patens	2	N	FACW
2. Plantago lanceolata	16	N	FACU
3. Trifolium repens	10	N	FAC
4. Rumex crispus	5	N	FAC
5. Festuca perennes	55	Y	FAC
6. Trifolium (berseem)	5	N	NL
7. other unk. grasses **	15	N	*
8.			
9.			
10.			
11.			
	102	= Total Cover	
Woody Vine Stratum (Plot size: 5ft)			
1. Ø			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 10 (gopher holes)

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ** Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? ✓ Yes _____ No _____

Remarks: ** not identifiable @ this time of year.

SOIL

Sampling Point: TP9

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/1	100	—				SiL	
20-31	10YR 3/1	94	5YR 4/6	6	RM	PL	SiCL	between 3/1 & 2/1

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) NO
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/19/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP 104

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 19 T06N R01E

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

Subregion (LRR): A, MLRA 4B Lat: 40.884867° Long: -124.103819 Datum: Humboldt

Soil Map Unit Name: Jolly giant 0-2% NWI classification: PEMID

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

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

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

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

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

Remarks: Grading in this area in prior years ~ 1990's

VEGETATION – Use scientific names of plants.

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

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

Herb Stratum (Plot size: 5ft)			
1. Festuca perennis	55	Y	FAC
2. Geranium molle	20	Y	NL
3. Trifolium repens	5	N	FAC
4. Trifolium sp. (berseem clover)	10	N	NL
5. Rumex crispus	2	N	FAC
6. Dipsacus fullonum	5	N	FAC
7. Plantago major	5	N	FAC
8. unkn. grasses **	15	N	*
9.			
10.			
11.			
	117	= Total Cover	

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

% Bare Ground in Herb Stratum 15

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants[1]

X Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: ** not identifiable this time of year.

SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: TP10

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-24								
0-21	10YR 3/2	100	none				L	
21-24	10YR 3/2	100	none				SCL	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: occasional rounded gravel.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/19/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP114

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 19 T06N R01E

Landform (hillslope, terrace, etc.): marine terrace Local relief (concave, convex, none): none Slope (%): 3-4

Subregion (LRR): A, MLRA 4B Lat: 40.886768° Long: -124.103398° Datum: Humboldt

Soil Map Unit Name: Jollygiant 0-2% NWI classification: PEMID

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30-ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Ø			
3.			
4.			
	Ø	= Total Cover	

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

Herb Stratum (Plot size: 5-ft)			
1. Festuca perennis	55	Y	FAC
2. Cerenium Molle	15	N	NL
3. Trifolium repens	15	N	FAC
4. Trifolium sp. (berseem)	5	N	NL
5. Dipsacus fullonum	5	N	FAC
6. Rumex crispus	3	N	FAC
7. unkn. grasses **	10	N	*
8.			
9.			
10.			
11.			
	107	= Total Cover	

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

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ~~*~~ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? ✓ Yes _____ No _____

Remarks:

* not identifiable @ this time of year.

SN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: PILU

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100	∅				CL	
3-19	10YR 3/2	100	∅				SiCL	
19-24	10YR 3/2	100	∅				SiCL	looser material

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/21/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP12W

Investigator(s): Cindy Wilcox/Greg O'Connell Section, Township, Range: S 19&30 T06N R 01E

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

Subregion (LRR): A, MLRA 4B Lat: 40.884508° Long: -124.10 4427° 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 ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

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

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

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

Remarks: WETS above normal rainfall for September through November 2017

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	35	Y	FACW
2. Monterey cypress	10	Y*	NL
3.			
4.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	15	Y	FAC
2.			
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Scirpus microcarpus	25	Y	OBL
2. Oenanthe sarmentosa	10	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 5ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 75

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: * excluded from analysis b/c planted species (Put back in - CW)

SOIL

Sampling Point: TP 12W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/2	100					SiCL	
5-17	10YR 3/2	90	5YR 4/6	10	RM	M	SiCL	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 15-17"

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/21/17

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP134

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 19 T06N R01E

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

Subregion (LRR): A, MLRA 4B Lat: 40.8638910 Long: -124.168450° Datum: Humboldt

Soil Map Unit Name: Jollygiant 0-2% NWI classification: PEMID

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

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

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

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

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

Remarks: On bank of man-made ditch of ottawa next to industrial building.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	2	Y	FAC ✓
2.			
3.			
4.			
	2 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. Festuca perennis	25	Y	FAC
2. Dactylis glomerata	25	Y	FACU
3. Holcus lanatus	25	Y	FAC
4. Dipsacus fullonum	5	N	FAC
5. Conium maculatum	10	N	FAC
6. Juncus effusus	5	N	FACW
7. Juncus patens	5	N	FACW
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 5 ft)			
1. Ø			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: Thatch layer

SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: TP134

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/1	100					L	
2-23	10YR 3/2	70					CL	w/ gravel (rounded)
2-23	10YR 4/2	25	10YR 5/4	5			CL	pockets of redox/red. matrix juxtaposed w/ 10YR 3/2 Fill mix
								sharp contacts

Fill

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Redox material not "insitu", but brought in as fill. Not hydric forming in place.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Foster Avenue City/County: Humboldt Sampling Date: 12/21/17

Applicant/Owner: Arcata Land CA State: CA Sampling Point: TP14U

Investigator(s): Cindy Wilcox & Greg OConnell Section, Township, Range: Sec. 19 T06N R01E

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

Subregion (LRR): A, MLRA 4B Lat: 40.883879° Long: -124.109990° Datum: Humboldt

Soil Map Unit Name: Jollyglant 0-2% NWI classification: PEMID

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

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

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

Herb Stratum (Plot size: 5 ft)			
1. Festuca perennis	40	Y	FAC
2. Dactylus glomerata	20	Y	FACU
3. Holcus lanatus	15	N	FAC
4. Conium maculata	15	N	FAC
5. Geranium molle	20	Y	NL
6. Raphanus sativa	10	N	NL
7.			
8.			
9.			
10.			
11.			
	120	= Total Cover	

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

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 30 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: TP14U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20"	10YR 3/1	100					SL	Fill

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: plastic bag ~ 6" below soil surface

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5) ✓ 0
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

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

Project/Site: Foster Avenue City/County: Arcata / Humboldt Sampling Date: 5/11/20

Applicant/Owner: Arcata Lundco State: CA Sampling Point: TP 154

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

Landform (hillslope, terrace, etc.): Alluvial Plain Local relief (concave, convex, none): Concave * Slope (%): 0-2%

Subregion (LRR): A MLRA 4B Lat: 40.864083 Long: -124.104651 Datum: Humboldt

Soil Map Unit Name: Jolly Urban 0-2% NWI classification: PEMIB

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? N Are "Normal Circumstances" present? Yes ✓ No _____

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

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

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

Remarks: Pit excavated in man-made agricultural ditch draining upland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		

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

Herb Stratum (Plot size: 5ft)			
1. Bromus hordeaceus	30	Y	FACU
2. Vicia sativa	15	Y	UPL
3. Rumex crispus	3	N	FAC
4. Holcus lanatus	20	Y	FAC
5. Anthoxanthum odoratum	15	Y	FACU
6. Ranunculus repens	10	N	FAC
7. Briza maxima	1	N	NL
8. Sonchus oleraceus	4	N	UPL
9. Geranium dissectum	3	N	NL
10. Bromus diandrus	5	N	NL
11. Dipsacus fullonum	8	N	FAC
Avena barbata	5	N	NL
	= Total Cover		

Woody Vine Stratum (Plot size:)			
1. Festuca perennis	5	N	FAC
2.			
	114 = Total Cover		

% Bare Ground in Herb Stratum 0 (24.8)

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: TP 15

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR3/2	100					SCL	
9-15	10YR3/2	>99	7.5YR5/8	0.5%	C	PL	SiCL	Along dead root channels
			5YR4/6	0.5%	C	PL		
15-24+	10YR3/2	97	7.5YR5/8	3%	C	M	SiCL	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks: TP excavated w/i man-made ditch draining upland areas

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

Project/Site: Foster Avenue City/County: Arcata / Humboldt Sampling Date: 5/11/20
Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP164
Investigator(s): Cindy Wilcox, Joseph Sabo Section, Township, Range:
Landform (hillslope, terrace, etc.): drainage ditch Local relief (concave, convex, none): concave Slope (%): 0-1
Subregion (LRR): A MLRA 4B Lat: 40.864871 Long: -124.104784 Datum:
Soil Map Unit Name: Jolly Gulch 0-2% NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

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

Remarks: Excavated manmade ditch along access road

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	15	Y	FAC
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Festuca myuros (vulpia)	15	Y	FACU
2. Raphanus sativus	10	Y	NL
3. Holcus lanatus	35	Y	FAC
4. Briza maxima	3	N	NL
5. Agrostis stolonifera	10	Y	FAC
6. Dipsacus fullonum	5	N	FAC
7. Geranium dissectum	2	N	NL
8. Vicia sativa	3	N	UPL
9. Festuca perennis	10	Y	FAC
10. Rumex crispus	5	N	FAC
11. Rumex acetosella	5	N	FAC
	103 = Total Cover		
	20.6		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 6%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: TP 16

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 5/2	100					SL	collection of debris from workyard - woody debris, sand layers, black burned woody debris
12-24+	2.5Y 3/1	85	10YR 5/8	15	C	M	SiCL	→ Native Soil

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✗ Depth (inches): N/A

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

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

Project/Site: Foster Avenue City/County: Arcata / Humboldt Sampling Date: 5/11/20

Applicant/Owner: Arcata Land Co. State: CA Sampling Point: TP 17W

Investigator(s): Joseph Sabol, Cindy Wilcox Section, Township, Range: Sec 19 T6N R1E

Landform (hillslope, terrace, etc.): drainage ditch Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR): A MLRA 4B Lat: 40.883854 Long: -124.108543 Datum:

Soil Map Unit Name: Jolly Giant 0-20% NWI classification: PEMB

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? N Are "Normal Circumstances" present? Yes ✓ No ____

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

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

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

Remarks: Excavated ditch on western boundary

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	7	Y	FAC
2.			
3.			
4.			
	7	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus armeniacus	10	Y	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. Oenanthe sarmentosa	40	Y	OBL
2. Equisetum arvense	28	N	FAC
3. Raphanus sativus	30	Y	NL
4. Anthoxanthum odoratum	30	Y	FACU
5. Dipsacus fullonum	5	N	FAC
6. Vicia sativa	4	N	UPL
7. Vicia tetrasperma	2	N	NL
8. Rumex acetosella	1	N	FACU
9. Agrostis stolonifera	4	N	FAC
10.			
11.			
	144 / 28.8	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum Ø

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: * Multiple herbaceous layers present.

SOIL

Sampling Point: TP 17

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/2	88	5YR 5/6	12	C	PL	SiCL ←	Sand/as preset, fill
9-27+	2.5Y 4/1	50%					SCL ←	Cobble/fill present + gravel
	10YR 5/8	50						Pockets of sand

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: No reaction to a-a-d

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes X No ___ Depth (inches): 23 in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 16 in

Wetland Hydrology Present? Yes X No ___

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

Remarks:

* Excavated within man-made ditch

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

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

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

June 22, 2017

Case 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	X
04-09-0207A	4/23/2004	90 EVERGREEN WAY -- PORTION OF SECTION 16, T2S, R2W, H.M.	06023C1575G	X
04-09-0449A	4/23/2004	1229 LIGHTHOUSE ROAD -- PORTION OF SECTION 16, T2S, R2W, H.M.	06023C1575G	X
05-09-0128A	3/23/2005	TRACT 488, PARCEL 3--2351 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	X
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	06023C0680G	X

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

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

June 22, 2017

Case 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	X
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	X
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	X
17-09-0524A	1/9/2017	PARCEL MAP NO. 1655, PARCEL 1 -- 2473 GOLDFINCH LANE	06023C0680G	X
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

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

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.	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	X
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	X
97-09-262A	1/2/1997	PARCEL 1, PARCEL MAP NO. 438-- 4090 OLD RAILROAD GRADE ROAD	06023C0685F	X
97-09-502A	3/10/1997	2160 GLENDALE DRIVE -- PORTION OF SECTION 13, T6N, R1E, H.B.&M.	06023C0694F	X
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	X
99-09-057A	11/2/1998	TRACT 23, PACIFIC MANOR SUBDIV UNIT 1, LOT 13 -- 1987 UPPER BAY ROAD	06023C0690F	X

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

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

June 22, 2017

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 -- PORTION OF SECTION 31, T2N, R2E, H.M. (APN: 206-441-32)	06023C1275F	X

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

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

June 22, 2017

Case No.	Date Issued	Project Identifier	Map Panel No.	Zone
04-09-0292A	2/13/2004	PORTION OF SECTION 14, T4S, R3E, H.M. (APN: 77-281-05)	06023C1980F	X
04-09-0561A	3/1/2004	176 CHURCH LANE -- PORTION OF SECTION 31, T2N, R2E, H.M. (APN: 206-431-006)	06023C1275F	X
05-09-0296A	2/1/2005	TRACT 72, KIMTU MEADOWS SUBDIV, LOT 12 -- 1653 KIMTU DRIVE	06023C1980F	X
05-09-1452A	9/7/2005	TRACT 64, LOT 149 -- 2043 ERNEST WAY	06023C0690F	X
05-09-1558A	9/7/2005	TRACT NO. 32, PACIFIC MANOR SUBDIV, UNIT 2, LOT 20 -- 3032 JANES ROAD	06023C0689F	X
05-09-1656A	10/4/2005	3018 JANES ROAD, PORT OF SEC 20, T6N, R1E, H.M.	06023C0689F	X
06-09-0237A	1/31/2006	72 LOVE LEE LANE	06023C1245F	X
07-09-1455A	7/10/2007	244 CHURCH LANE -- A PORTION OF SECTION 31, T2N, R2E, H.M.	06023C1275F	X
07-09-1966X	10/2/2007	BUILDINGS A-G -- 1749 ALAMAR WAY	06023C1209F	X
08-09-0321A	1/7/2008	PACIFIC MANOR SUBDIV, UNIT 2, LOT 24 -- 1957 EDITH DRIVE	06023C0869F	X
08-09-0439A	4/17/2008	PACIFIC MANOR SUBDIV 6, LOT 162 -- 2026 BALL COURT	06023C0690F	X
08-09-0899A	5/22/2008	LOT 42, TRACT 33, PACIFIC MANOR SUBDIVISION UNIT 3 -- 1984 LESLIE COURT	06023C0690F	X

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

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

June 22, 2017

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

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

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	X
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	X
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	X
11-09-2871A	7/19/2011	(65-RS) PARCEL 3 -- 1455, 1465, 1487 SAND PRAIRIE COURT	06023C1209F	X
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

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

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

June 22, 2017

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	X
12-09-1854A	6/12/2012	SECTION 24, T6N, R1E, HUMBOLDT MERIDIAN -- 2350 GLENDALE DRIVE	06023C0694F	X
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	X
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	X
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

REVALIDATED LETTERS OF MAP CHANGE FOR HUMBOLDT COUNTY, CALIFORNIA

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

June 22, 2017

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	06023C0690F	X
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	X
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	X
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	X

Federal Emergency Management Agency

Washington, D.C. 20472

OCT 30 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, California See Below for affected parcels:

Flooding 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 Sharrocks Jr.

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

Enclosure

cc: Community Map Repository

Affected parcels/ A.P.Ns.- 505-151-03
506-131-01 & 11
506-231-02, 04 & 05
507-181-07

APR 04 2001

Case No.: 01-09-300A LOMA

Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT
DETERMINATION DOCUMENT (REMOVAL)

COMMUNITY AND 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
	COMMUNITY NO: 060061, 060060	
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	C	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.

Matthew B. Miller

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

APR 0 4 2001

Case No.: 01-09-300A LOMA

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	C	16.0 feet	—	—	19.0 feet
3	—	Section 20	—	Property	C	15.0 feet	—	—	27.0 feet
101661	—	Section 19	—	Property	C	16.0 feet	—	—	18.0 feet
101737	—	Section 20	—	Property	C	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

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

9

Federal Emergency Management Agency

Washington, D.C. 20472

OCT 30 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

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Sincerely,

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

Enclosure

cc: Community Map Repository

Affected Parcels/ A.P.Nos.: 505-151-03
506-131-01 & 11
506-231-02 04-05
507-181-07

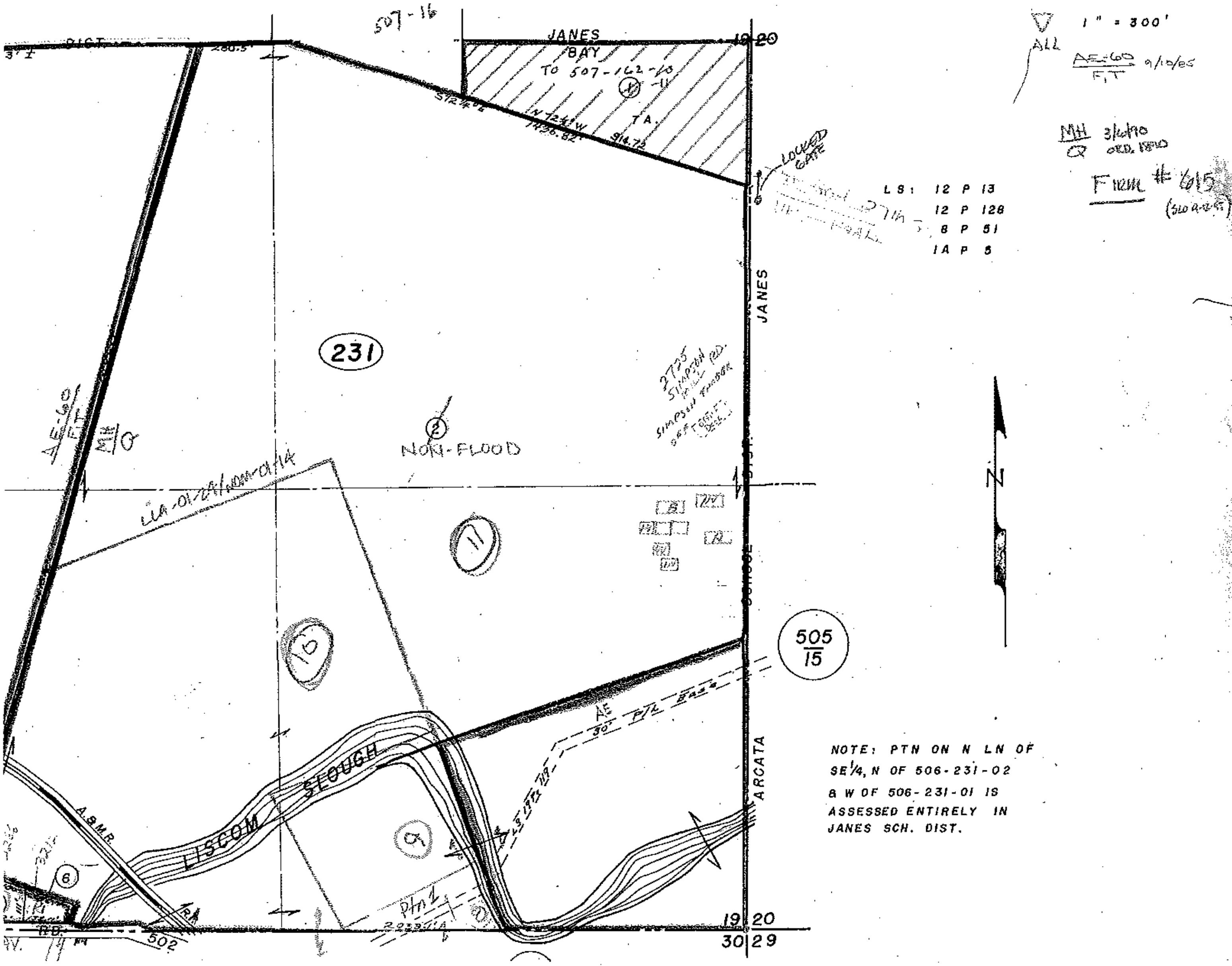
changed to 009

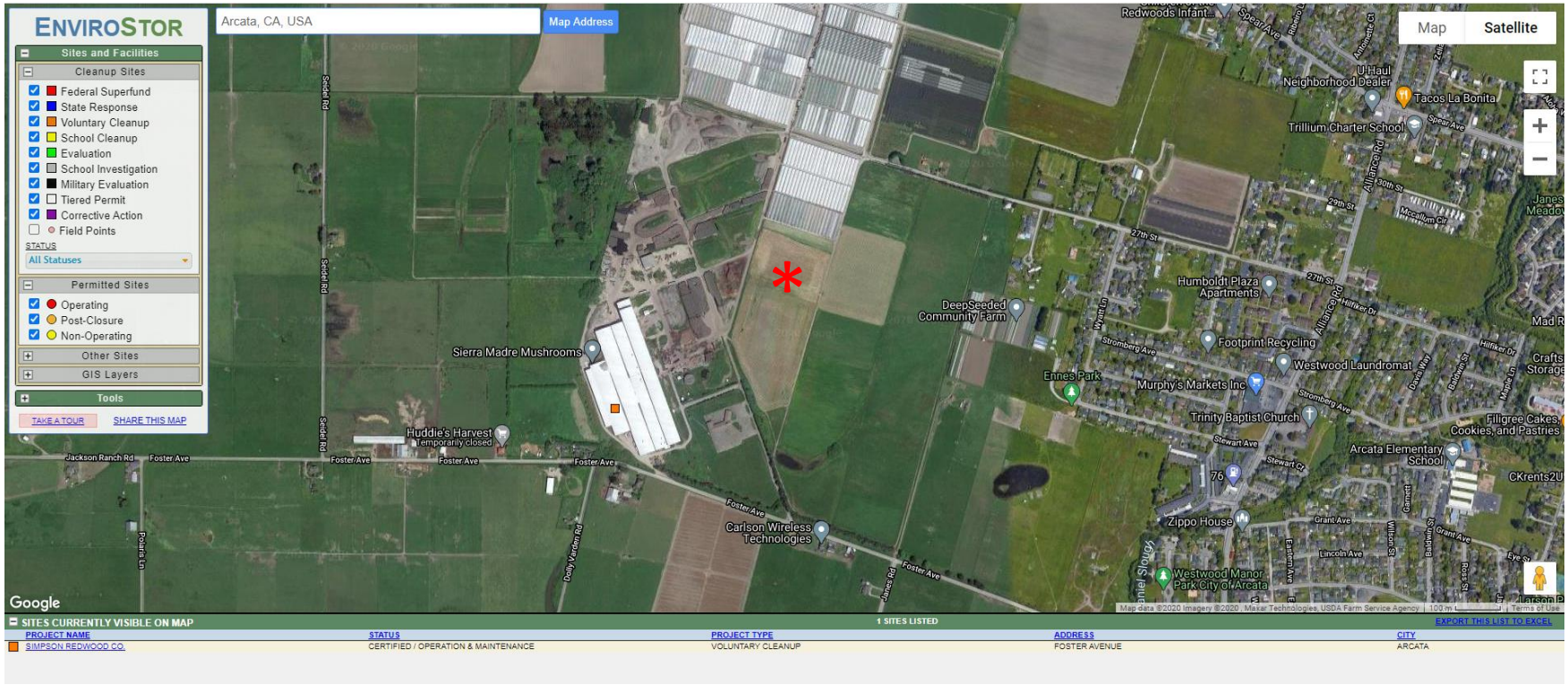
506-23

A-E

PTN SE¼ SEC 19 6N 1E

2=F-14 CZ
I-20 INLAND





EnviroStor records search (accessed September 30, 2020)