Update to
Aquatic Resources Delineation
Northcoast Highway Solar Project
Fortuna, Humboldt County, California

Hydesville, California, USGS 7.5-minute Topographic Quadrangle Map

Township 2 North, Range 1 East, Section 19 NW

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ACRONYMS

ABSL	Above Sea Level
APN	Assessor's Parcel Number
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	Environmental Protection Agency
GPS	Global Positioning System
Hwy	Highway
LRR-A	USDA Land Resource Region A (Northwest Forests and Coast)
LSAA	Lake or Streambed Alteration Agreement
MPH	Miles Per Hour
MWac	Mega-Watt, Alternating Current
NEPA	National Environmental Policy Act
OHWM	Ordinary High Water Mark
RPW	Relatively Permanent Water
RWQCB	Regional Water Quality Control Board
SCS	Soil Conservation Service
SWANCC	Solid Waste Agency of Northern Cook County
TNW	Traditional Navigable Waterway
TOB	Top of Bank
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Service
WDR	Water Discharge Requirement

SECTION 1: INTRODUCTION

At the request of Borrego Solar, Kristiaan Stuart has prepared an update to the delineation of waters of the U.S., including wetlands, for the Northcoast Highway Solar Project (Project) conducted in May of 2020. The purpose of this update is to reassess the project area for the presence of potential waters of the U.S., including wetlands, and potential waters of the state of California, due to an increase in project area. The project area is defined as all areas that may potentially be directly impacted by construction of the project, encompassing the footprint of the Project and any other areas that could be impacted by construction equipment and/or personnel (equipment staging areas, material storage and disposal sites, etc.). The project area boundary is intended to include a sufficient buffer around the Project to account for any potential future modifications to project design. The entire project area is approximately 75-acres in area (Exhibits 1 & 3). The results of this delineation are preliminary until verified by the U.S. Army Corps of Engineers (USACE) and/or the Northcoast Regional Water Quality Control Board.

1.1 Project Location

The site is located on open pasture and cropland approximately 0.8 miles west of Hydesville, Humboldt County, California, adjacent to and south of Hwy 36 and west of River Bar Road within the Hydesville, CA USGS 7.5-minute quadrangle topographic map (Exhibit 1). The legal description of the project area is, Township 2 N, Range 1 E, Section 19 NW (Hydesville, CA, USGS 7.5 Minute Quadrangle). The Project's approximate center GPS coordinates are: 40.543145, -124.116441 (WGS 84).

1.2 Project Description

Borrego Solar is proposing to develop an approximately 2.0-MWac photovoltaic solar energy generation facility and associated power line (project) on approximately 11.24-acres of a 75-acre series of parcels, identified as APN: 204-171-047-000, 204-171-001-000, 204-081-007-000, 204-081-004-000, & 204-081-002-000, located near Hydesville, Humboldt County, CA (Exhibit 6).

1.3 Driving Directions

From the US Highway 101 north bound State Highway 36 exit, the project site entrance is approximately 1.5 miles on State Highway 36 on the south (right) side of the highway. The physical address is: 2020 CA-36, Fortuna, CA 95540.

1.4 Contact Information

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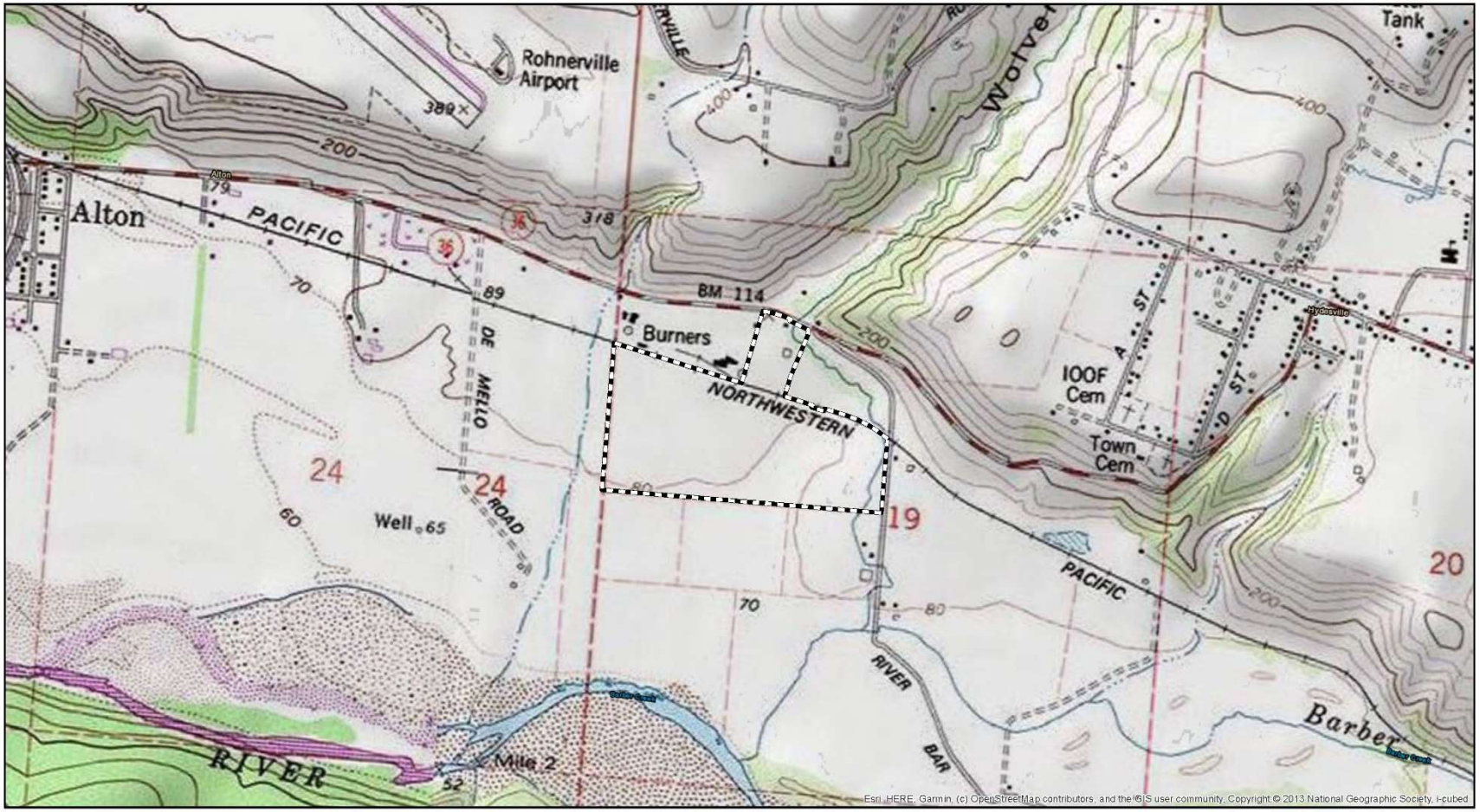
Exhibit 1 – Topographic View



Topographic Map: Northcoast Solar Project Survey Area

Legend

2023-0504-NC Project Area

0 1,000 2,000 4,000 6,000 Feet

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Exhibit 2 - Regional View

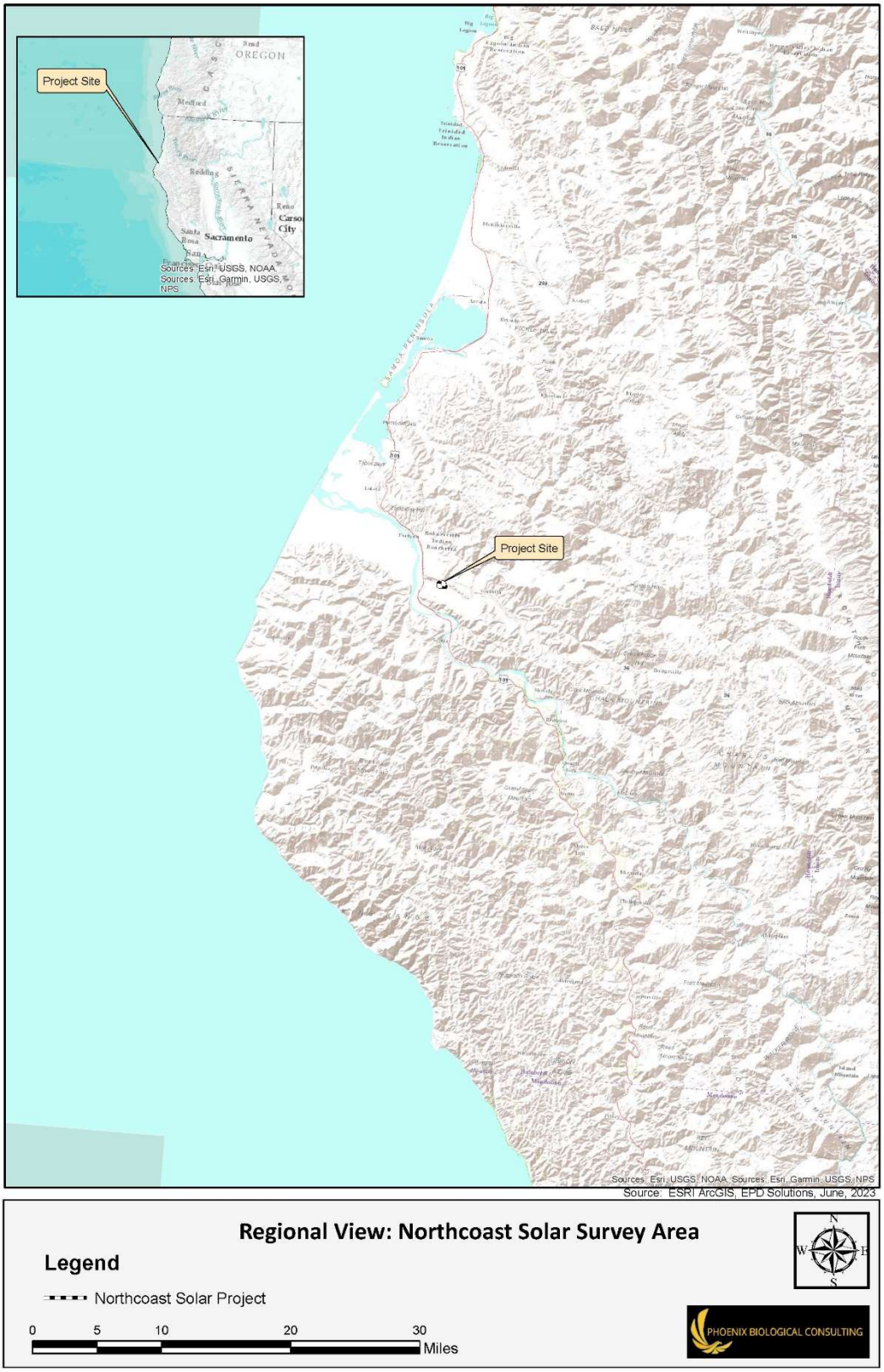
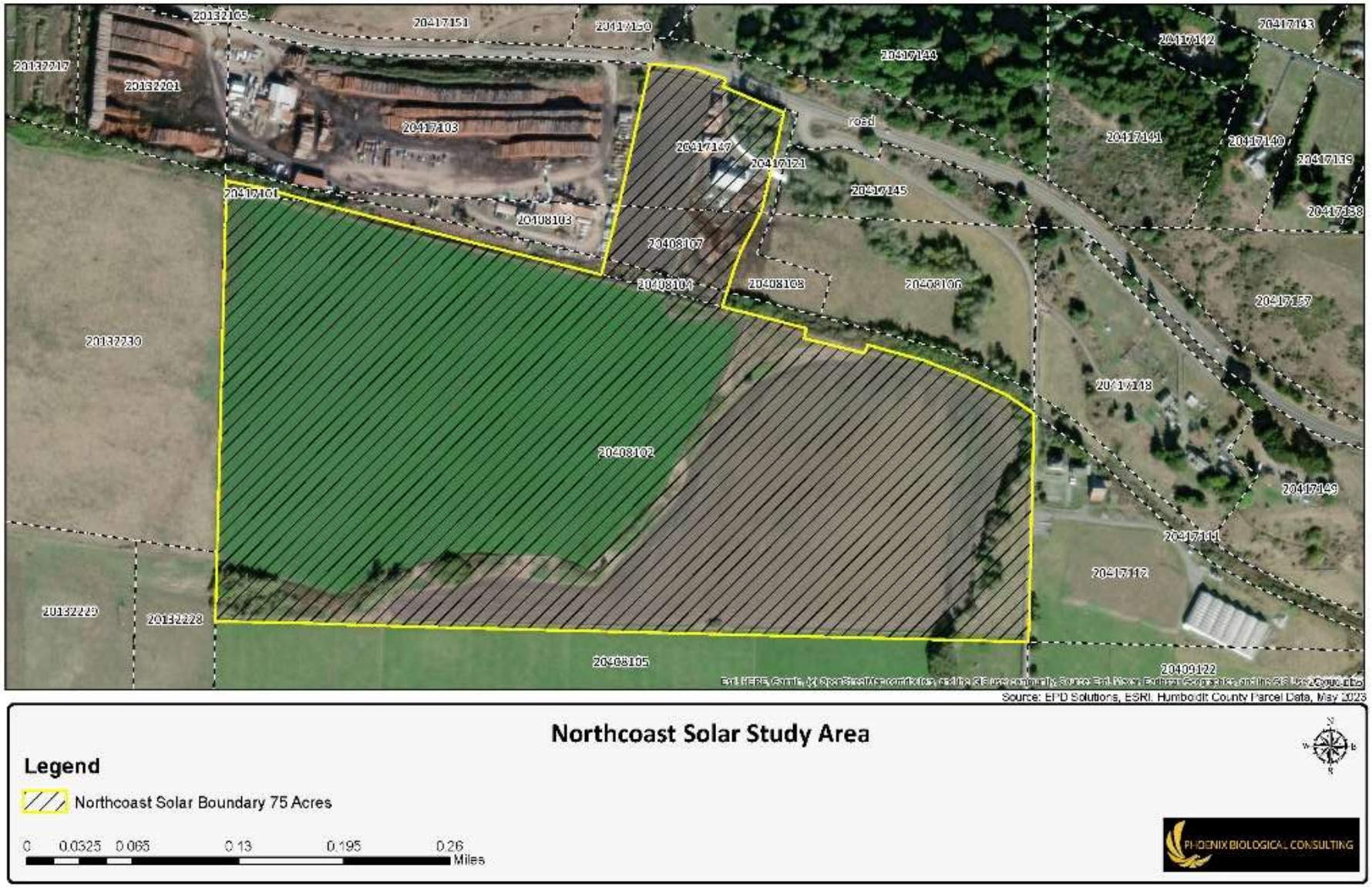


Exhibit 3 – Parcels within Study Area



Northcoast Solar Study Area

Legend

Northcoast Solar Boundary 75 Acres

0 0.0325 0.065 0.13 0.195 0.26 Miles

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Exhibit 4 –Soils Map

Exhibit 5 – Plant Communities

Source: ESRI, EPD Solutions, K. Stuart. July, 2023

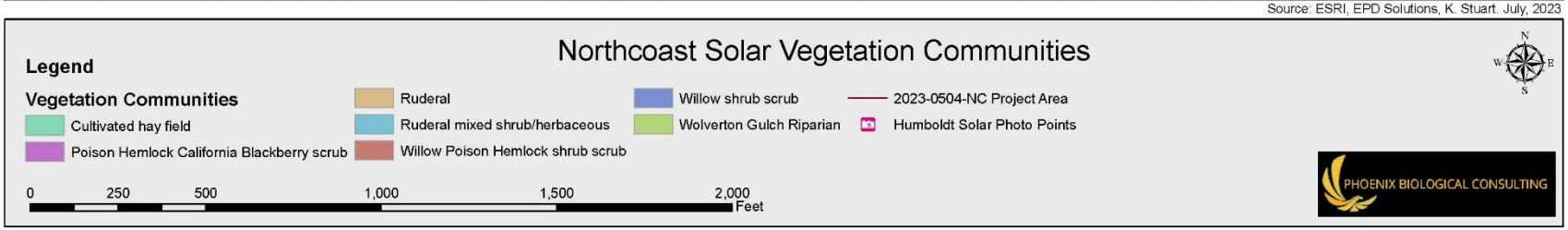


Exhibit 6 - Preliminary Site Pla

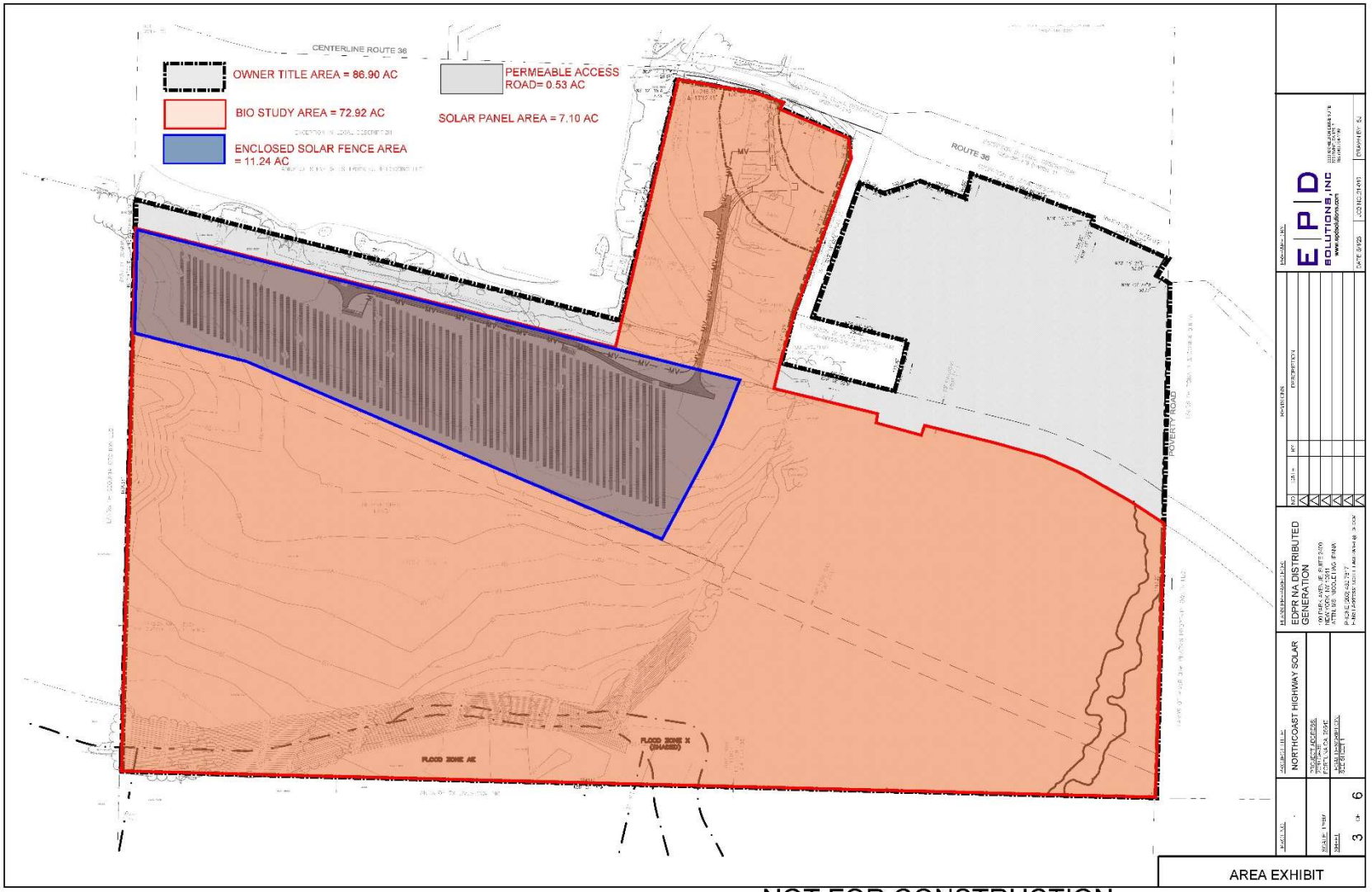
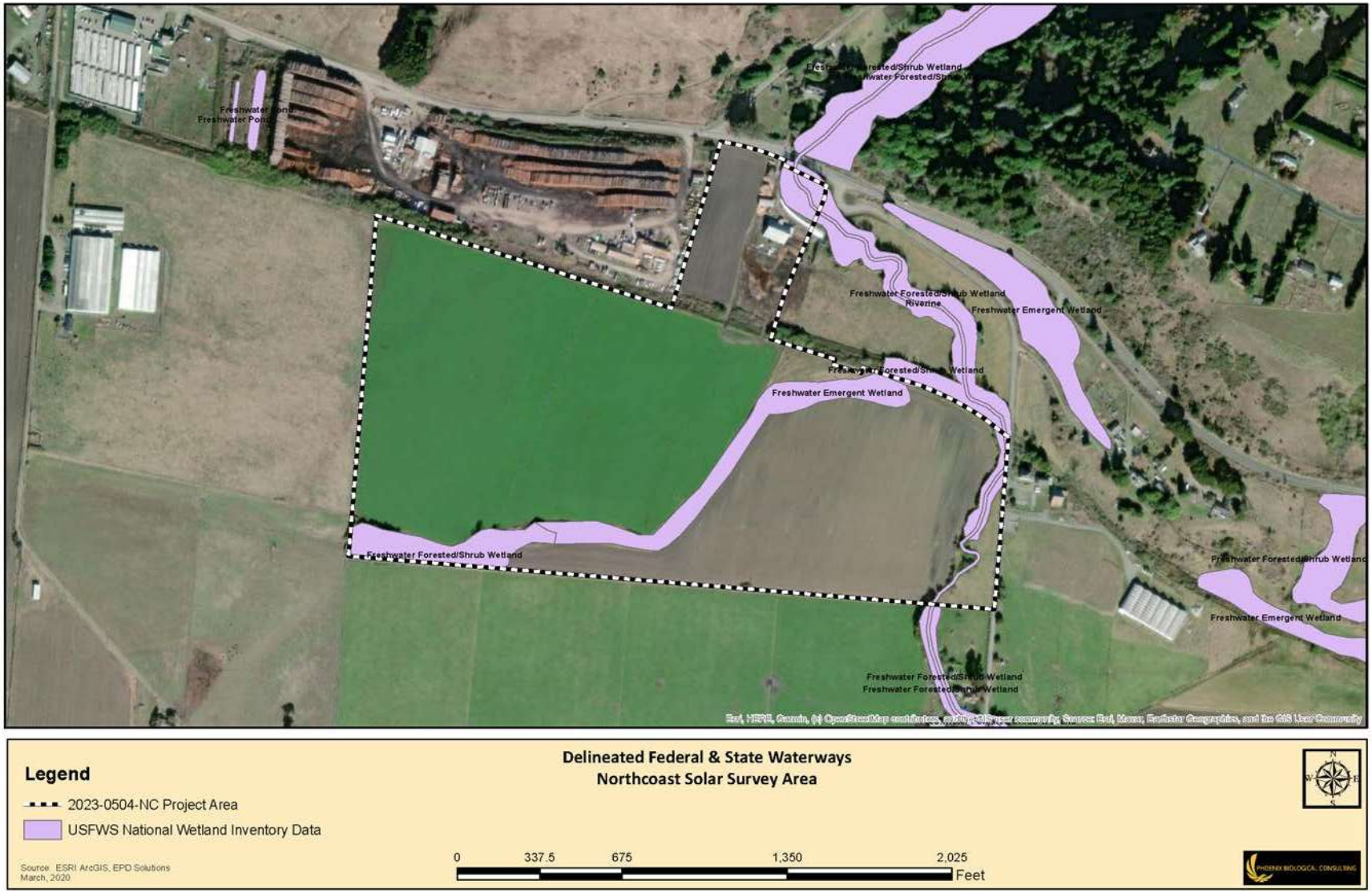


Exhibit 7 – National Wetland Inventory



SECTION 2: REGULATORY SETTING

2.1 Waters of the United States

2.1.1 Section 404 of the Clean Water Act

The objective of the CWA is to maintain and restore the chemical, physical, and biological integrity of the Waters of the United States (33 Code of Federal Regulations [CFR] Part 328 Section 328.4). "Waters of the U.S." is the encompassing term for areas that qualify for federal regulation under Section 404 of the CWA. Section 404 of the CWA gives the U.S. Environmental Protection Agency (EPA) and the USACE regulatory and permitting authority regarding discharge of dredged or fill material into "navigable waters of the United States". Section 502(7) of the CWA defines navigable waters as "waters of the United States, including territorial seas". Section 328 of Chapter 33 in the Code of Federal Regulations (CFR) defines the term "waters of the United States" as it applies to the jurisdictional limits of the authority of the USACE under the CWA. A summary of this definition of "waters of the U.S." in 33 CFG 328.3 includes (1) waters used for commerce and subject to tides; (2) interstate waters and wetlands; (3) "other waters" such as intrastate lakes, rivers, streams, and wetlands; (4) impoundments of waters; (5) tributaries of waters; (6) territorial seas; and (7) wetlands adjacent to waters. Therefore, for purposes of determining USACE jurisdiction under the CWA, "navigable waters" as defined in the CWA are the same as "waters of the U.S." defined in the CFR above. Waters of the U.S include non-isolated "wetlands" and "other waters of the U.S."

"Other Waters of the U.S." refers to unvegetated waterways and other water bodies, such as drainages, creeks, rivers, and lakes with an ordinary highwater mark (OHWM). Other waters typically lack hydrophytic vegetation (defined below) and may also lack hydric soils. Jurisdiction in non-tidal areas extends to the OHWM, which is defined as: that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (CFR 328.3 (e) [51 FR 41250, Nov. 13, 1986, as amended at 58 FR 45036, Aug. 25, 1993).

Wetlands are defined as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (CFR 328.3, CFR 230.3).

Section 404 (b)(1) compliance must be demonstrated before a Section 404 permit can be issued. Guidelines for a Section 404(b)(1) analysis were developed by the EPA in conjunction with USACE (40 CFR Parts 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Significant Nexus of Tributaries

On June 5, 2007, the USACE and the EPA issued joint guidance on implementing the June 19, 2006 U.S. Supreme Court opinions resulting from the Rapanos v. United States and Carabell v. United States (Rapanos) cases. The agencies received 66,047 public comments on the Rapanos Guidance from states, environmental and conservation organizations, regulated entities, industry associations, and the general public. The EPA and the USACE jointly reviewed the comments and released a revised version of the Guidance on December 2, 2008 (USACE 2008). The revised Guidance states that the agencies will assert jurisdiction over (1) traditional navigable waters (TNW),1 (2), wetlands adjacent to TNW, (3) non-navigable tributaries of TNW that are relatively permanent where the tributaries typically flow year around or have continuous flow at least seasonally (e.g., typically three months), and (4) wetlands that abut such tributaries. A "significant nexus" determination will be made for non-navigable tributaries that are not relatively permanent and their adjacent wetlands. Such features that are determined to have a significant nexus to a TNW will also be subject to CWA jurisdiction. A significant nexus requires that there be "more than an insubstantial or speculative effect on the chemical, physical, and/or biological integrity of a TNW" (USACE 2008). The revised Guidance also states the following features will generally not be subject to CWA jurisdiction: swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent or short duration flow) and ditches (including roadside ditches) excavated wholly in and draining only uplands, and that do not carry a relatively permanent flow of water.

Isolated Areas Excluded from Section 404 Jurisdiction

Some wetlands and waters may also be considered outside of USACE jurisdiction as a result of the Supreme Court's decision in Solid Waste Agency of Northern Cook County (SWANCC) v. United States Army Corps of Engineers (531 U.S. 159 [2001]). Isolated wetlands and waters are those areas that do not have a surface or groundwater connection to, and are not adjacent to, a navigable Water of the U.S., and do not otherwise exhibit an interstate commerce connection.

U.S. Supreme Court Ruling: Sackett v. Environmental Protection Agency

On May 25, 2023, the Supreme Court held the "CWA's use of "waters" in §1362(7) refers only to "geographic[al] features that are described in ordinary parlance as 'streams, oceans, rivers, and lakes' " and to adjacent wetlands that are "indistinguishable" from those bodies of water due to a continuous surface connection. Rapanos v. United States, 547 U. S. 715, 755, 742, 739 (plurality opinion). To assert jurisdiction over an adjacent wetland under the CWA, a party must establish "first, that the adjacent [body of water constitutes] . . . 'water[s] of the United States' (i.e., a relatively permanent body of water connected to traditional interstate navigable waters); and second, that the wetland has a continuous surface connection with that water, making it difficult to determine where the 'water' ends and the 'wetland' begins."

On June 26, 2023, the U.S. EPA issued the following statement: "The Environmental Protection Agency and the U.S. Department of the Army (agencies) are in receipt of the U.S. Supreme Court's May 25, 2023, decision in the case of Sackett v. Environmental Protection Agency. In light of this decision, the agencies are interpreting "waters of the United States" consistent with the Supreme Court's decision in

Sackett. The agencies are developing a rule to amend the final "Revised Definition of 'Waters of the United States'" rule, published in the Federal Register on January 18, 2023, consistent with the U.S. Supreme Court's May 25, 2023 decision in the case of Sackett v. Environmental Protection Agency. The agencies intend to issue a final rule by September 1, 2023."

Consistent with the U.S. EPA's June 26th statement, on June 27, 2023, the U.S. Army Corps of Engineer's Headquarters issued the following statement: "The Environmental Protection Agency and the U.S. Department of the Army (agencies) are in receipt of the U.S. Supreme Court's May 25, 2023, decision in the case of Sackett v. Environmental Protection Agency. In light of this decision, the agencies are interpreting the phrase "waters of the United States" consistent with the Supreme Court's decision in Sackett. The agencies are developing a rule to amend the final "Revised Definition of 'Waters of the United States'" rule, published in the Federal Register on January 18, 2023, consistent with the U.S. Supreme Court's May 25, 2023 decision in the case of Sackett v. Environmental Protection Agency. The agencies intend to issue a final rule by September 1, 2023."

2.1.2 Fish and Wildlife Coordination Act

Under the Fish and Wildlife Coordination Act (16 U.S.C. 661-666), project proponents are required to consult with the USFWS and the appropriate state wildlife agency for any federal project where the waters of any stream or other body of water are impounded, diverted, deepened, or otherwise modified. These agencies prepare reports and recommendations that document project effects on wildlife and identify measures that may be adopted to prevent loss or damage to wildlife resources. The term "wildlife" includes both animals and plants. Provisions of the Fish and Wildlife Coordination Act are implemented through the National Environmental Policy Act (NEPA) process and Section 404 permit process.

2.1.3 Executive Order 11990 for Protection of Wetlands

Executive Order 11990 for the Protection of Wetlands (May 24, 1977) establishes a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. On federally funded projects, impacts on wetlands must be identified in the environmental document. Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm must be included. This must be documented in a specific "Wetlands Only Practicable Alternative Finding" in the final environmental document. An additional requirement is to provide early public involvement for projects affecting wetlands.

2.2 Waters of the State

2.2.1 Porter-Cologne Water Quality Act

Waters of the State are regulated by the RWQCB 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. Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." Section 401 requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. must obtain a state certification administered by the RWQCB that the discharge complies with other

provisions of CWA. The RWQCB protects all waters in its regulatory scope, but it has special responsibility for isolated wetlands and headwaters that may not be regulated by other programs, such as Section 404 of the CWA. Projects that require a Section 404 CWA 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 Section 401 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 RWQCB has the option to regulate such activities under its state authority in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements.

2.2.2 California Fish and Game Code, Sections 1600-1616

Streams, lakes, and riparian vegetation that provide habitat for fish and other wildlife species are subject to jurisdiction by the CDFW under Sections 1600-1616 of the California Fish and Game Code. These sections regulate any activity that may (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. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in an LSAA that becomes part of the plans, specifications, and estimates documents for the Project.

The term "stream," which includes creeks and rivers, is defined in the California Code of Regulations (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 (CDFG 1994). Stream- dependent riparian habitat is defined in the California Fish and Game Code (Section 2785) as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source." Removal of riparian vegetation would also require a LSAA from CDFW.

2.3 Humboldt County Code

Section 61.1.7.6 of the County's code defines a streamside management area (SMA) as a natural resource area along both sides of streams containing the chanel and adjacent land. SMAs do not include watercourses consisting entirely of a manmade drainage ditch, or oter manmade drainage device, construction, or system. Where necessary, as determined by the responsible department, the width of SMAs shall be expanded to include significant areas of riparian vegetation adjacent to the buffer area, slides and areas with visible evidence of slope visibility, not to exceed 200 feet measured as a horizontal distance from the top of bank as necessary to include slides, or areas with visible evidence of slope instability. The SMA may be reduced or eliminated where the County determines that the mapping of the SMA is not accurate, there are no in-channel wetland characteristics or off-channel riparian vegetation, or the reduction will not significantly affect the biological resources of the SMA of the property.

SECTION 3: METHODOLOGY

Study methods included a reconnaissance site visit and background information review. Prior to conducting the field visit and delineation, a 200-scale color aerial photograph of the project area and U.S. Geological Service (USGS) topographic maps were assessed to determine the locations of potential areas of USACE/RWQCB/CDFW jurisdiction. Suspected jurisdictional areas were then field-checked and sampled for the presence of wetland vegetation, soils, and hydrology. The presence of potentially jurisdictional features on the site were evaluated using the USACE and CDFW methodologies as described below.

3.1 Pre-field Review

The following reference materials were reviewed prior to the field investigation:

- Stuart, Kristiaan and Ryan Young. 2020. Aquatic Resources Delineation, Northcoast Highway Solar Project Fortuna, Humboldt County, California.
- Google Earth aerial imagery for imagery data: May 02, 2023, July 2022, April 2019, May 2014 and July 2004.
- Calflora Database (Calflora 2023).

3.2 Field Investigation

The fieldwork for the update to the May 2020 aquatic resources delineation was conducted by ecologist Kristiaan Stuart on October 15, 2022 and again on June 18, 2023. The extent of potentially jurisdictional waters and wetlands were mapped, quantified, and documented for the 75-acre survey area.

Field surveys within the project area were conducted using the wetland delineation methodology provided by the USACE in their regional supplement to the Wetland Delineation Manual (Environmental Laboratory 2008). This methodology involves observing and recording specific data on wetland vegetation, soils, and hydrology. In addition, delineation of non-wetland, "other water" features was conducted according to methodology outlined in A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States (USACE 2005). The extent of potentially jurisdictional waters and wetlands were mapped, quantified, and documented for the entire 75-acre survey area.

3.2.1 Wetland Delineation Methodology

The USACE developed field methods for identifying the location and extent of jurisdictional wetlands (a subset of Waters of the U.S.) using the USACE Wetland Delineation Manual (Environmental Laboratory 1987). The USACE has also issued regional supplements to the 1987 Wetland Delineation Manual. For the purposes of this report and field assessments, the Regional Supplement to the Corps of Engineers

Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), (USACE 2010) was used.

According to the USACE wetland delineation methodology, a wetland must exhibit the following: (1) a prevalence or dominance of hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. These characteristics are defined and described in further detail below.

Hydrophytic Vegetation

The regional supplement includes several ways of determining the presence of hydrophytic vegetation, including the dominance test, the prevalence index, and morphological adaptations. These methods were followed at each sample point to determine whether hydrophytic vegetation was present. Plant species observed were identified using The Jepson Manual, Higher Plants of California (Baldwin et al. 2012). Plant species identified within the project area were assigned a wetland status according to the National Wetland Plant List (Lichvar et al., 2016; Lichvar et al., 2012; Reed, 1988). This wetland classification system is based on the qualitative and quantitative expected frequency of occurrence in wetlands as shown in Table 1.

Table 1 - Classification of Wetland-Associated Plant Species

Indicator status	Designation	Qualitative Description	Probability of Occurring in a Wetland
Obligate (OBL)	Hydrophyte	Almost always occur in wetland.	>99%
Facultative Wetland (FACW)	Hydrophyte	Usually occur in wetland, but may occur in nonwetland.	67-99%
Facultative (FAC)	Hydrophyte	Occur in wetland and nonwetland.	34-66%
Facultative Upland (FACU)	Nonhydrophyte	Usually occur in non-wetland, but may occur in wetland.	1-33%
Upland (UPL)	Nonhydrophyte	Almost never occur in wetland.	<1%
Not Listed (NL)	Nonhydrophyte	Plant species not listed are considered UPL for wetland delineation purposes.	Does not occur in wetlands in any region.

Sources: Lichvar et al., 2016; Lichvar et al., 2012; Reed, 1988.

The regional supplement (Environmental Laboratory 2008) requires that a three-step process be conducted to determine if hydrophytic vegetation is present. The procedure first requires the delineator to apply the "50/20 rule" (Indicator 1) described in the manual. To apply the 50/20 rule, dominant species are evaluated within each herb, shrub, and tree stratum of the community. In general, dominants are the most abundant species that individually or collectively account for more than 50 percent of the total coverage of vegetation in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total. If greater than 50 percent of the dominant species can be classified by an obligate

(OBL), facultative wetland (FACW), or facultative (FAC) wetland indicator status, then the dominance test has been met.

If the community passes Indicator 1, then the community is hydrophytic. If the community fails Indicator 1 and both hydric soils and wetland hydrology are not present, then hydrophytic vegetation is not present, unless the site is a problematic wetland situation. However, if the plant community fails Indicator 1 but hydric soils and wetland hydrology are both present, the delineator must apply Indicator 2.

Indicator 2 is known as the Prevalence Index. The prevalence index is a weighted average of the wetland indicator status for all plant species within the sampling plot. Each indicator status is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5). Indicator 2 requires the delineator to estimate the percent cover of each species in every stratum of the community and sum the cover estimates for any species that is present in more than one stratum. All species are then organized into groups according to their wetland indicator status and the Prevalence Index is calculated.

The Prevalence Index will yield a number between 1 and 5. If the Prevalence Index is equal to or less than 3, hydrophytic vegetation is present. However, if the community fails Indicator 2, the delineator must proceed to Indicator 3.

Indicator 3 is known as Morphological Adaptations. Some hydrophytes develop easily recognized physical characteristics (or morphological adaptations) when they occur in wetland areas. Some of these adaptations may include but are not necessarily limited to adventitious roots and shallow root systems developed on or near the soil surface. If more than 50 percent of the individuals of a facultative upland (FACU) species exhibit morphological adaptations for life in wetlands, that species is considered a hydrophyte and its wetland indicator status should be reassigned to FAC. If such observations are made, the delineator must recalculate Indicators 1 and 2 using an FAC indicator status for this species. The vegetation is hydrophytic if either test is satisfied. Plants identified within the project area for the May 2020, October of 2022 and June 2023 surveys are listed in Appendix A.

Hydric Soils

The National Technical Committee for Hydric Soils (NTCHS) defines a hydric soil as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA Soil Conservation Service 1994). Most hydric soils exhibit characteristic morphologies that result from repeated periods of saturation or inundation for more than a few days. Saturation or inundation, when combined with microbial activity in the soil, causes the depletion of oxygen. This anaerobiosis promotes certain biogeochemical processes, such as the accumulation of organic matter and the reduction, translocation, or accumulation of iron and other reducible elements. These processes result in distinctive characteristics that persist in the soil during both wet and dry periods, making them particularly useful for identifying hydric soils in the field (USDA Natural Resources Conservation Service 2006).

The Regional Supplement contains a list of 19 hydric soil indicators that are known to occur in the region. Soils samples were collected and described according to the methodology provided in the Regional Supplement. Hydric soils were determined to be present if any of the soil samples met one or more of the 23 hydric soil indicators described in the Supplement. Hydric soil indicators include organic soils

(histosols), mineral soils saturated and rich in organics (histic epipedon), sulfidic odor, low dissolved oxygen concentration (aquic moisture regime) and reducing conditions, gleyed and/or low chroma soils, soils listed on national, state, or local hydric soils lists, and iron and manganese concretions. Soil chroma and values were determined by utilizing a standard Munsell soil color chart (Munsell 2000).

Wetland Hydrology

Wetland hydrology exists in areas that are periodically inundated or have saturated soils at some time during the growing season, and for a sufficient duration to support hydrophytic vegetation (Environmental Laboratory 1987). The USACE jurisdictional wetland hydrology criterion is satisfied if an area is inundated or saturated for a period sufficient to create anoxic soil conditions during the growing season (minimum of 14 consecutive days) or a water table 12 inches or less below the soil surface, also during the growing season. Wetland hydrology indicators provide evidence that the site has a continuing wetland hydrologic regime and that hydric soils and hydrophytic vegetation are not relics of a past hydrologic regime. Evidence of wetland hydrology can include primary indicators such as visible inundation or saturation, drift deposits, oxidized root channels, and salt crusts, or secondary indicators such as the FAC-neutral test, presence of a shallow aquitard, or crayfish burrows. Only one primary indicator (such as ponding, saturation, sediment deposits, algal matting) is required to meet the wetland hydrology criteria; however, if secondary indicators are used (such as drainage pattern, saturation visible on an aerial photograph, raised ant mounds), at least two secondary indicators must be present to conclude that an area has wetland hydrology.

Difficult Wetland Situations - Atypical Situations

Atypical situations are wetlands in which vegetation, soil, or hydrology indicators are absent due to recent human activities or natural events (USACE 2010). Problematic vegetation, hydric soils, and hydrology scenarios can exist in areas where there have been recent human-induced or natural disturbances that induce or restrict wetland indicators yielding an atypical situation in one or more of these diagnostic wetland criteria.

Two areas within the historic railroad right-of-way were investigated for the presence of state and (pre-Sackett) federal jurisdictional wetlands, Exhibit 9. The first investigation site, located in the southeast corner of the Poison hemlock California blackberry scrub habitat area (Exhibit 9), has a dominance of FACW and OBL vegetation thus satisfying the hydrophytic component of the criteria triad. And the hydrology was also determined to be wetland, however the soils, Jollygiant 0-2% (*not* hydric), did not show hydric conditions per LRR-A regional requirements. These soils were shallow at a maximum depth of 8-inches and were found to be well drained fine-sandy loam above a coarse gravel (1” to 6.5”) layer. The gravel layer is the historic railroad track and tie ballast. Due to the presence of two positive wetland criteria, an Atypical Data Form (Appendix C) was prepared to evaluate the effects of the human altered site. It was determined that this site was not wetland due to the altered hydrology as a concave relief, the slower than normal percolation of water due to a semi-indurate gravel layer (railway ballast) and adjacent cropland irrigation practices. The second site, approximately 127-feet northwest of the first site, also failed to be delineated as wetland for the same scenario detailed in the Atypical Situations analysis. Differences at this site were the presence of dominant FAC wetland species and algal mats in small low-lying areas.

3.2.2 Other Waters Delineation Methodology

For non-wetland, "other water" features, the extent of the USACE jurisdiction is defined by the OWHM. Delineation of other waters was based on observing indicators for the OHWM (33 CFR 328.3), following established USACE criteria and considering hydrological connectivity or isolation. In general, the OHWM for a stream is usually determined through an examination of the recent physical evidence of surface flow. Common physical characteristics that indicate the presence of an OHWM include but are not limited to a clear natural line impressed on the bank, evidence of scour, recent bank erosion, destruction of native terrestrial vegetation, sediment deposition and sorting, and the presence of litter and debris or wrack lines.

The limits of other water features were mapped in the field using a Trimble Geo7x® and a Trimble Geo XH 6000 sub-meter accurate global positioning systems (GPS) and aerial photography. The limits of natural (e.g., not a concrete-lined or an excavated canal or ditch) features were recorded with the Trimble GPS units by walking the boundary while collecting data points. These data were post processed in Trimble GPS Pathfinder Office software and exported into a GIS and further corrected if needed. The final data was used to produce the map of waters of the U.S. and to calculate the area and linear feet of other waters.

To increase and verify accuracy of the GPS unit, the width of the OHWM between the parallel banks of the southeastern Wolverton Creek (Exhibit 8) segment was also measured with a steel measuring tape at four different data points along the stream margins within the study area. At each of these data points an OHWM field data form was prepared.

The upper Wolverton Gulch (northeastern, Exhibit 9) stream channel was not accessible by foot and was estimated from the concrete box culvert, at Highway 36, width between wing-walls. An OHWM field data form was prepared based on the observable site conditions.

3.2.3 CDFW Jurisdictional Streambeds and Other Waters of the State Delineation Methodology

This section provides the methods for collecting data for state streambeds and waters under the California Fish and Game Code and Porter-Cologne Act, respectively.

CDFW Jurisdictional Streambeds

According to the CDFW, streams are generally defined by the presence of bed and bank or channelized topography, shorelines, and similar features. In addition, CDFW has discretion to assert jurisdiction over ecological systems (such as riparian communities) associated with streams and water bodies, as well as isolated water bodies that are outside of the USACE jurisdiction. Delineation of the limits of CDFW jurisdiction was accomplished through both onsite and remote analysis. State jurisdiction was delineated by measuring outer width and length boundaries of state jurisdiction ("lakes or streambeds"), consisting of the greater of either the "top of bank" measurement ("bankfull" width) or the extent of associated riparian or wetland vegetation which typically was the drip line of riparian tree species. Additionally, remote or offsite analysis included a review of historic and current aerial photography, analysis of available topographic maps, available online data, and calculation of preliminary jurisdictional area using ArcView GIS software.

RWQCB Jurisdictional Waters of the State

Evaluation of the waters of the State followed the same methods for collection of data as described above under the USACE Delineation Methodology. Isolated features were not identified within the project area and therefore all features mapped as potentially jurisdictional to the USACE are also mapped as potentially jurisdictional to the RWQCB.

SECTION 4: ENVIRONMENTAL SETTING

The Project is located southern Humboldt County in and adjacent to the historic floodplain of the lower Van Duzen River. The region is within the northern Coast Ranges geomorphic province of California, a region characterized by the irregular, alluvial topography of the Franciscan Complex and is situated in these quaternary sediments of the Eel River watershed area.

The east margin of the project area is situated along the lower Wolverton Gulch, a small perennial stream which is a tributary of the Van Duzen River. The project area is separated topographically by an upper terrace and a lower remnant of the historic Van Duzen floodplain. The elevation difference between these two large areas is approximately 23 feet which transitions quickly as a small cliff that runs from west to northeast through the project area and is erroneously represented in the NWI geodata (Exhibit 7) as two separate wetland features. The upper alluvial terrace area is currently in use as an irrigated and cultivated hay field and has alternated between pastureland and cultivated fields since at least 1940 based on historic aerial imagery.

The lower floodplain area is currently being used as an irrigated and cultivated hay field and has been in agricultural production since at least 1940. The transitional cliff area is marked by a few areas of willow scrub shrub habitat but is predominantly ruderal herbaceous, blackberry, poison hemlock and mixed shrubs. The northernmost area of the Project where it meets Hwy 36 is also a cultivated hay field.

A narrow area (APN 204-081-004-000) between the main body of the project area and the Project's northernmost segment is a historic railroad right of way originally established in or before 1907. This area, except for a narrow access area, was not surveyed in previous surveys due to access limitations. Access to this area was granted for this survey effort and the area to the southeast, labeled in Exhibit 5 – Plant Communities as Ruderal, Poison Hemlock California blackberry scrub and Willow shrub scrub were surveyed for the presence of state and federal jurisdictional aquatic resources. The area to the northwest, in the same APN, and labeled as Willow Poison hemlock shrub scrub, however, was not surveyed on foot due to the type and density of vegetation and a barbed wire perimeter fence posing a physical barrier. This area was surveyed at its perimeter and from aerial imagery. The historic railway right of way is largely dominated by willow shrub habitat, dense stands of poison oak, poison hemlock and California blackberry, with two intersections of ruderal and seasonally wet areas at soft access roads.

The upper terrace and lower floodplain areas are situated at an elevation ranging from 71 feet ABSL in the south, at the southern property line, to 118 feet ABSL (22 to 36 meters ABSL, respectively) in the north at Hwy 36.

4.1 Field Conditions

Climate conditions in the project area are described as Mediterranean with cool wet winters with seldom freezing conditions and cool summers within the influence of the coastal fog belt with higher temperatures in the eastern coastal mountain foothills.

The average annual rainfall for the Project vicinity since the year 2000 is 44.18 inches (NWS Station: Scotia). The total annual rainfall for the Project vicinity in 2020 was 24.53-inches, in 2021 was 38.69-inches, in 2022 was 29.05-inches, and from January to June 2023 was 39.56-inches. Cumulative precipitation conditions from January to June 2023 were significantly wetter than the previous three years, 2000 through 2022. Weather conditions during the June 18, 2023, survey were dense morning fog to open sky with no clouds by 1pm, light winds from the west at 2.5 to 5.2 mph and air temperature of 65.5° Fahrenheit.

4.2 Soils

The project area contains three soil series as mapped by the USDA Natural Resources Conservation Service (Exhibit 4). The soils within the project area include:

- Weott, 0 to 2 percent slopes, hydric
- Loleta, 2 to 5 percent slopes, hydric
- Jollygiant, 0 to 2 percent slopes, non-hydric

4.2.1 Weott, 0 to 2 percent slopes

The Weott series (hs3l) is a very poorly drained alluvial silt loam soil with a depth to restrictive layer of greater than 80 inches. This soil occurs in elevations ranging from 0 to 150 feet in depressions, back swamps and floodplain steps and occurs in regions with mean annual precipitation of 35 to 80 inches and a frost free period of 275 to 330 days. Weott, 0 to 2 percent slopes is classified as a hydric soil.

4.2.2 Loleta, 2 to 5 percent slopes

The Loleta series (hs3x) is a poorly drained alluvial loam soil with a depth to restrictive layer of greater than 80 inches. These soils occur in elevations ranging from 10 to 160 feet in fan remnants and alluvial fans and occurs in regions with mean annual precipitation of 35 to 80 inches and a frost free period of 275 to 330 days. Loleta, 2 to 5 percent slopes is classified as a hydric soil.

4.2.3 Jollygiant, 0 to 2 percent slopes

The Jollygiant series (n7ln) is a somewhat poorly drained alluvial silty clay loam soil to 33-inches with a depth to restrictive layer of greater than 80 inches. These soils occur in elevations ranging from 0 to 160 feet on stream terraces and alluvial fans and occur in regions with mean annual precipitation of 35 to 80 inches and a frost free period of 275 to 330 days. Jollygiant, 0 to 2 percent slopes is *not* classified as a hydric soil.

4.3 Hydrology

Wolverton Gulch is a first order, perennial, blue line stream within the lower Eel River watershed area (HUC 18010105). It is a tributary of and confluences with Barber Creek approximately 0.27 river miles south of the project area boundary before forming a confluence with the Van Duzen River, a direct tributary of the Eel River. Coniferous hardwood forest mix, willow shrub, light residential, and agricultural dominate the Wolverton Gulch watershed area. The stream channel of Wolverton Gulch, in

the survey area, is a fairly straight, incised channel dominated by fine substrates such as silt and fine sands. Small gravel areas do occur in small riffles as do a very small number of small cobbles in isolated areas along the stream banks. Water depth varies from a few inches at the end of a pool-tail-crest to a few feet in its deepest pool habitats. Average width at the OHWM within the study area is approximately 12.5-feet at the northern study area segment and 13.9-feet at the southern study area segment of Wolverton Gulch.

4.4 Plant Communities

Six different plant communities were identified in the project area (Exhibit 5) during the October 2022 surveys. Cultivated hay is located on the east side of Wolverton Gulch adjacent to River Bar Rd. Based on aerial imagery this area has been under cultivation since approximately 2014. Plant species associated with this tall grass community include ripgut brome (*Bromus diandrus*), wildoats (*Avena fatua*), and sparse forbs including curly doc (*Rumex crispus*) and mallow (*Malva sp.*). Cultivated corn fields are located in the lower relict floodplain area and the area located in the northern limits of the project area adjacent to Hwy 36. These crops are monocultural stands of corn (*Zea mays*). Located south of the historic railway right of way is an expansive area of irrigated and cultivated white clover (*Trifolium repens*). The Ruderal Mixed Shrub/Herbaceous community is a mix of native and non-native plant species with the non-native species occurring in areas with higher disturbance. Representative species include coyote brush (*Baccharis pilularis*), California blackberry (*Rubus ursinus*), Himalayan blackberry (*Rubus armeniacus*), stinging nettle (*Urtica dioica*), jointed charlock (*Raphanus raphanistrum*), carrot (*Daucus carota*), poison hemlock (*Conium maculatum*), and milkthistle (*Silybum marianum*). The Willow Shrub Scrub habitat is located along the historic railway right of way and in the lower southwestern project corner. The dominant species is the coastal willow (*Salix hookeriana*) with subdominant species including red elderberry (*Sambucus racemosa*), California blackberry and thimbleberry (*Rubus parviflorus*). The Willow-Alder riparian habitat is associated with the Wolverton Gulch riparian area. The dominant species include red alder (*Alnus rubra*), arroyo willow (*Salix lasiolepis*) and sandbar willow (*Salix exigua*). Sub-dominant herbaceous species include watercress (*Nasturtium officinale*), Cyperus (*Cyperus sp.*) and water primrose (*Ludwigia sp.*).

Table 2 - Plant Communities in the Project Area

Plant Community	Approximate Area (acres)
Cultivated Hay	62.8
Ruderal	2.82
Ruderal Mixed Shrub/Herbaceous	2.67
Willow Shrub Scrub	2.13
Willow-Alder Riparian (Wolverton Gulch)	1.76
Willow Poison Hemlock shrub scrub	0.57
Total	**72.75**

SECTION 5: RESULTS

The entire 75-acre project area was evaluated for the presence of waters of the U.S. under USACE jurisdiction, as well as waters of the State that may be regulated by RWQCB and/or CDFW. The results of jurisdictional site evaluation are described below. Exhibit 8 depicts the extent of potentially jurisdictional areas within the project area. These data were overlaid onto the project area boundaries and an aerial photograph using ArcGIS software. A list of observed plant species was compiled and is provided in Appendix A. Representative photographs were also taken during site surveys to document existing site conditions and are provided in Appendix B. Completed regional Wetland Determination Data, Atypical Situations, and Ordinary High Water Mark (OHWM) Delineation forms are provided in Appendix C. Descriptions of potential federal and state jurisdictional waters and wetlands found within the project area are provided below.

5.1 Potential Section 404 Jurisdictional Wetlands and Other Waters of the U.S.

Potential waters of the U.S. identified within the project area consist of one feature, Wolverton Gulch. The total area of potentially jurisdictional features in the project area is 0.40-acre. A summary of the dimensions and acreage of this specific feature is included in Table 3.

Table 3 – Summary of CWA, Section 404 Jurisdictional Waters within the Project Area

Feature ID	Name	Type	Width (feet)	Channel Length (feet)	Square Feet	Area (acres)
1a	Wolverton Gulch (south)	Perennial Stream	10.25 – 17.5 ($\bar{x}$ = 15.2)	945.1	14,375	0.33
1b	Wolverton Gulch (north)	Perennial Stream	12.5 ($\bar{x}$ = 12.5)	235	2,938	0.07

5.2 Perennial Stream

Perennial streams and creeks are defined by the USACE as follows: "A perennial stream has flowing water year-round during a typical year. The water table is located above the streambed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow." Wolverton Gulch is documented to contain anadromous fish species, specifically the coastal cutthroat trout (*Oncorhynchus clarkii clarkii*) (CDFG 2013). The coastal cutthroat typically requires perennial streams to complete its anadromous lifecycle. This species was not reliably detected again during the October 2022 or June 2023 aquatic resource surveys. While fish were detected in Wolverton Gulch during both of these surveys, they could not be identified to the species level.

Exhibit 8: Aquatic Resources Delineation Map (Southeast)

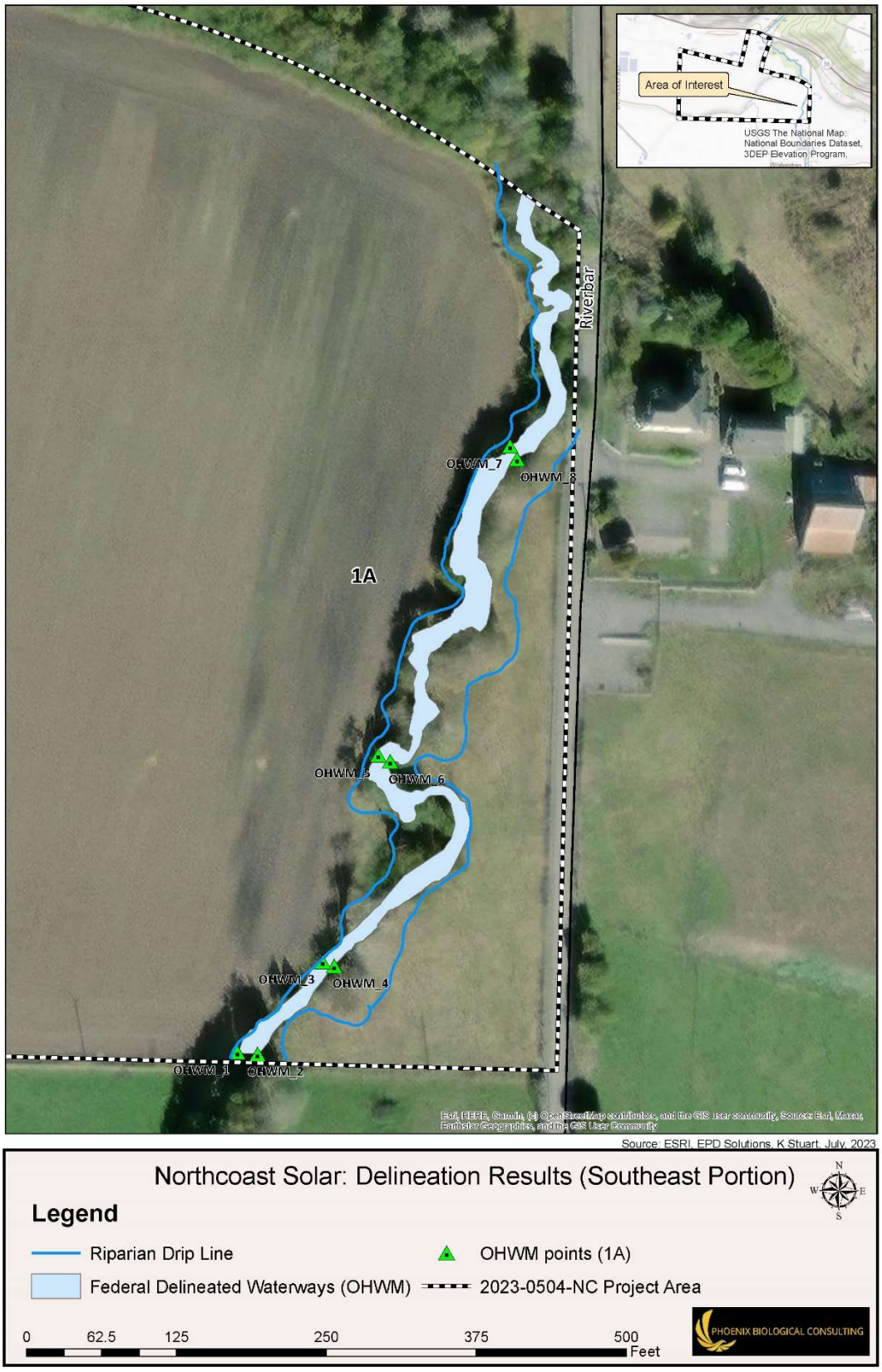
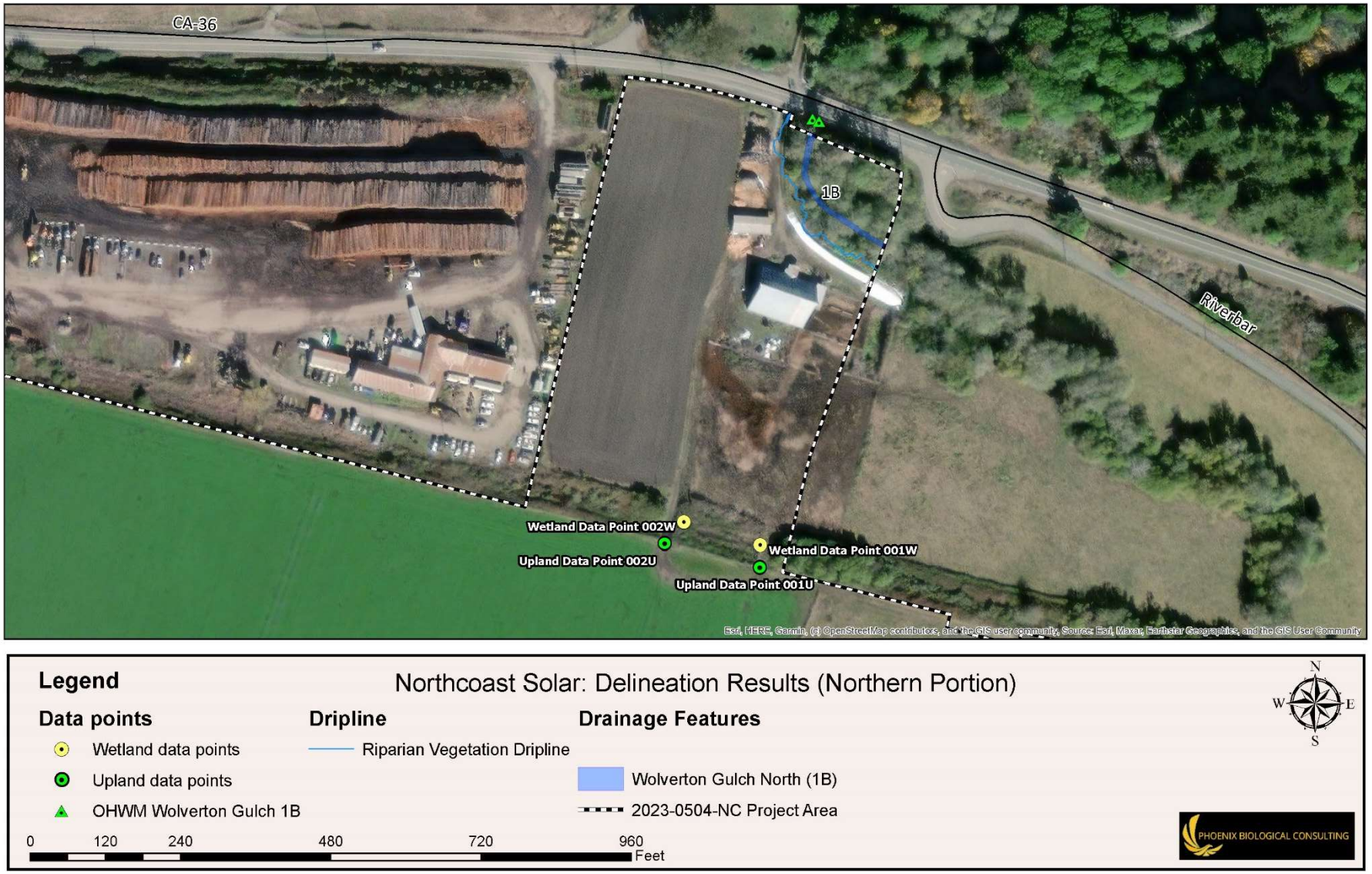


Exhibit 9: Aquatic Resources Delineation Map (Northeast)



5.3 Connections to Navigable Waters

Characteristics relevant to the Rapanos/Carabell and SWANCC status of each individual or class of potential waters of the United States in the project area are discussed below. The information presented is consistent with the guidance and suggestions contained in the following three documents provided by EPA and the USACE:

- USACE and EPA guidance regarding Rapanos v. United States & Carabell v. United States prepared by EPA in consultation with U.S. Army Corps of Engineers, Headquarters Division (USACE/EPA 2007).
- Approved Jurisdictional Determination Form prepared by U.S. Army Corps of Engineers, Headquarters Division (USACE HQ 2007).
- Information Requested for Verification of Corps Jurisdiction prepared by the San Francisco District of the USACE (USACE San Francisco District 2007).

These documents are collectively referenced hereafter as the Rapanos Guidance.

5.3.1 Connectivity to Traditional Navigable Waters

Wolverton Gulch is a first order, perennial, blue line stream within the lower Eel River watershed area (HUC 18010105). It is a tributary of and confluences with Barber Creek, a relatively permanent waterway (RPW), approximately 0.27 river miles south of the project boundary. Barber Creek is a tributary of the Van Duzen River, a Traditional Navigable Water (TNW), which is a tributary of the lower Eel River, also a TNW, and a tidal tributary to the Pacific Ocean.

5.3.2 Relatively Permanent Waters

Relatively permanent waters are waters that flow year-round or have continuous flow at least seasonally (a minimum of three months). Wolverton Gulch is perennial and meets the description of an RPW.

5.3.3 Significant Nexus

Tributaries of TNWs that are not RPWs must demonstrate a significant nexus to the TNW in order to be regulated under the CWA. The general practice of the USACE San Francisco District is to assume that the water quality and chemical characteristics of any TNW are the result of the cumulative effect of all of the tributary waters that feed that TNW. The USACE San Francisco District therefore concludes that all tributary waters have a significant nexus, whether RPWs or not. Through this definition and the hydrologic connectivity of Wolverton Gulch to a TNW (Van Duzen River and Eel River), Wolverton Gulch has a significant nexus to the Pacific Ocean.

5.4 Waters of the State

All wetland and water features identified within the project area may also be regulated by the RWQCB as Waters of the State through Section 401 of the CWA and/or the state's Porter-Cologne Water Quality

Control Act. All ecological systems associated with drainages (e.g., riparian wetlands), and drainage features with bed and bank topography may be regulated by Sections 1600–1616 of the California Fish and Game Code. In conjunction with the CWA, Section 404 permit, impacts to wetlands and waters would likely require a Section 401 Water Quality Certification or Waste Discharge Requirement from RWQCB and CDFW for FGC Section 1602, Lake or Streambed Alteration Agreement (LSAA).

Potential waters of the state identified within the project area consist of one feature, Wolverton Gulch, represented in this report as two separate areas (Exhibits 8 & 9). The total area of potentially state jurisdictional features, per FGC 1600 *et seq.*, in the project area is 0.95-acre and 0.59-acre for a total of 1.54-acres. A summary of the dimensions and acreage of these features are included in Table 4.

Table 4 – Summary of State Jurisdictional Waters within the Project Area

Feature ID	Name	Type	Width (feet)	Feature Length (feet)	Square Feet	Area (acres)
1a	Wolverton Gulch (south)	Perennial Stream	13.75 – 86.0	945.1	41,382	0.95
1b	Wolverton Gulch (north)	Perennial Stream	211	149	25,803	0.59

SECTION 6: SUMMARY

Phoenix Consulting has conducted a jurisdictional determination of all potential waters of the U.S., including wetlands occurring within the project area. All areas within the Project were assessed to the degree necessary to determine the presence or absence of jurisdictional wetlands and other waters of the U.S. in accordance with the guidelines established by the USACE.

Potential waters of the United States identified within the project area consist of Wolverton Gulch. The total area of potential federally jurisdictional features in the project area is 0.40-acre. Additionally, within the project area, Wolverton Gulch, an RPW, has a significant nexus to downstream navigable waters (Van Duzen River, Eel River and the Pacific Ocean).

The total area of potential state jurisdictional features in the project area is 1.54-acres. This area includes the outer drip line of the riparian area or the top of bank, whichever is greater. The proposed Project would not impact the 0.40-acre Wolverton Gulch or the 1.54-acres of potential state jurisdictional features.

SECTION 7: REFERENCES

Calflora: Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals. [web application]. 2023. Berkeley, California: The Calflora Database [a non-profit organization]. Available at: https://www.calflora.org/ (Accessed: June, 2023).

California Department of Fish and Game. 1994. A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607, California Fish and Game Code. Environmental Services Division, Sacramento, CA.

California Department of Fish and Game. 2013. Van Duzen River Watershed Assessment. California Department of Fish and Game Coastal Watershed Planning and Assessment Program. Department of Fish and Game.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States, U.S. Fish and Wildlife Service Pub. FWS/OBS79/31. Washington, D.C., page 103.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical report Y-87-1, U.S. Army Engineers Waterways Experiment Station, Vicksburg, Mississippi.

Hickman, J. C., Ed. 1993. The Jepson Manual, Higher Plants of California. University of California Press.

Jepson Flora Project (eds.) 2023, Jepson eFlora, https://ucjeps.berkeley.edu/eflora/, accessed on June 16-25, 2023.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Western Mountains, Valleys & Coast 2016 Regional Wetland Plant List. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X.

Lichvar R.W., N.C. Melvin M.L. Butterwick and W.N. Kirchner. 2012. National Wetland Plant List Indicator Rating Definitions. ERDC/CRREL TR-12-1. U.S. Army Engineer Research and Development Center Cold Regions Research and Engineering Laboratory Hanover NH.

Mersel, M.K., and R.W. Lichvar. 2014. A guide to Ordinary High Water Mark (OHWM) delineation for non-perennial streams in the Western Mountains, Valleys, and Coast Region of the United States. ERDC/CRREL TR-1-13. U.S. Army Engineer Research and Development Center Cold Regions Research and Engineering Laboratory Hanover NH.

Munsell. 2000. Munsell Soil Color Charts. GretagMacbeth. New Windsor, NY.

National Oceanic and Atmospheric Administration - National Weather Service. 2023. Monthly Precipitation Data from the Year 2000 to June 2023, for Scotia, CA. Available at:

https://www.weather.gov/wrh/Climate?wfo=ekaReed, P. 8., Jr. 1988. National list of plant species that occur in wetlands: Northeast (Region 1). U.S. Fish Wildlife Service, Biol. Rep. 88(26.1). 1 pp.

Netronline. 2023. Historic Aerials. Available at: https://www.historicaerials.com

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Accessed [June/2023]. Available at: https://websoilsurvey.nrcs.usda.gov/app/

Supreme Court of the United States. 2023. Sackett et ux. v. Environmental Protection Agency et al. No. 21–454. Argued October 3, 2022—Decided May 25, 2023. Available at: https://www.supremecourt.gov/opinions/22pdf/21-454_4g15.pdf

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

U.S. Army Corps of Engineers 2020. National Wetland Plant List, version 3.5. http://wetland-plants.usace.army.mil/ U.S. Army Corps of Engineers, Engineer Research and Development Center. Cold Regions Research and Engineering Laboratory, Hanover, NH. File: *reg_WMVC_2020v1*.

U.S. Army Corps of Engineers. 2023. San Francisco District Website. Announcements: "27 June 2023 - UPDATE Supreme Court Ruling in Sackett v. Environmental Protection Agency", and "26 May 2023 - Supreme Court Ruling in Sackett v. Environmental Protection Agency." Available at: https://www.spn.usace.army.mil/Missions/Regulatory/

United States Department of Agriculture (USDA) Natural Resources Conservation Service. 1999. Soil Taxonomy, A Basic System of Soil Classification for Making and Interpreting Soil Surveys, Second Edition. Agricultural Handbook 436.

U.S. Environmental Protection Agency. 2022. Waters Data 2.0, updated 09-20-2022. Available at: https://www.epa.gov/waterdata/viewing-waters-data-using-google-earth

U.S. Environmental Protection Agency. 2023. News Releases. EPA Statement on Sackett v. EPA, June 26, 2023. Available at: https://www.epa.gov/newsreleases/epa-statement-sackett-v-epa

USDA Natural Resources Conservation Service. 2006. Field indicators of hydric soils in the United States, version 6.0. ed. G. W. Hurt and L. M. Vasilas. Fort Worth, TX: USDA NRCS in cooperation with the National Technical Committee for Hydric Soils. (http://soils.usda.gov/use/hydric/).

APPENDIX A: LIST OF PLANT SPECIES OBSERVED

Scientific Name	Common Name	Status	Wetland Indicator Status
Achillea millefolium	Yarrow	Native	FACU
Agrostis capillaris	Colonial bentgrass	Non-native	FAC
Alnus rubra	Red alder	Native	FAC
Alopecurus geniculatus	Marsh foxtail	Native	OBL
Amaranthus retroflexus	Rough pigweed	Non-native	FACU
Anthriscus caucalis	Bur chervil	Non-native	NL
Athyrium filix-femina var. cyclosorum	Western lady fern	Native	NL
Avena fatua	Wild oat (cultivated)	Non-native	UPL
Baccharis pilularis	Coyote brush	Native	NL
Brassica rapa	Common mustard	Non-native	FACU
Briza minor	Little rattlesnake grass	Non-native	FAC
Bromus catharticus	Rescue grass	Non-native	NL
Bromus diandrus	Ripgut brome	Non-native	NL
Bromus sitchensis var. carinatus	California brome	Native	NL
Capsella bursa-pastoris	Shepherd's purse	Non-native	FACU
Cardamine oligosperma	Bitter cress	Native	FAC
Castilleja rubicundula ssp. lithospermoides	Cream sacs	Native	NL
Ceanothus oliganthus	Hairy ceanothus	Native	NL
Ceanothus thyrsiflorus	Blueblossom	Native	NL
Cerastium glomeratum	Large mouse ears	Non-native	FACU
Chamerion angustifolium	Fireweed	Native	FACU
Cicuta douglasii	Western water hemlock	Native	OBL
Cirsium vulgare	Bull thistle	Invasive, non-native	FACU
Conium maculatum	Poison hemlock	Invasive, non-native	FAC
Convolvulus arvensis	Field bindweed	Non-native	NL
Cortaderia jubata	Andean pampas grass	Invasive, non-native	FACU
Cuscuta sp.	Dodder	Native	NL
Cyperus esculentus	Yellow nutgrass	Native	FAC
Datura stramonium	Jimsonweed	Non-native	NL
Daucus carota	Queen Anne's lace	Non-native	FACU
Dipsacus fullonum	Wild teasel	Invasive, non-native	FAC
Dryopteris arguta	California wood fern	Native	NL
Dryopteris expansa	Common wood fern	Native	FACW
Echinochloa crus-galli	Barnyard grass	Non-native	FAC

Elymus triticoides	Beardless wild rye	Native	NL
Epilobium brachycarpum	Tall annual willowherb	Native	NL
Epilobium ciliatum	Slender willow herb	Native	FACW
Equisetum arvense	Common horsetail	Native	FAC
Equisetum hyemale ssp. affine	Giant scouring rush	Native	FACW
Erigeron canadensis	Canada horseweed	Native	FACU
Erodium cicutarium	Red stemmed filaree	Invasive, non-native	NL
Euphorbia maculata	Spotted spurge	Non-native	UPL
Festuca perennis	Italian rye grass	Invasive, non-native	FAC
Foeniculum vulgare	Fennel	Invasive, non-native	NL
Galium aparine	Cleavers bedstraw	Native	FACU
Galium porrigens var. porrigens	Climbing bedstraw	Native	NL
Geranium dissectum	Wild geranium	Non-native	NL
Geranium molle	Dovefoot geranium	Non-native	NL
Gilia tricolor	Bird's eye gilia	Native	NL
Gnaphalium palustre	Lowland cudweed	Native	FACW
Hedera helix	English ivy	Invasive, non-native	FACU
Helminthotheca echioides	Bristly ox-tongue	Invasive, non-native	FAC
Heuchera micrantha	Alumroot	Native	NL
Hordeum murinum ssp. leporinum	Foxtail barley	Non-native	FAC
Juncus balticus ssp. ater	Baltic rush	Native	FACW
Juncus bufonius var. bufonius	Toad rush	Native	FACW
Juncus effusus ssp. pacificus	Pacific rush	Native	FACW
Juncus xiphioides	Iris leaved rush	Native	OBL
Kickxia elatine	Fluellin	Non-native	FAC
Lamium amplexicaule	Henbit deadnettle	Non-native	NL
Lemna minor	Smaller duckweed	Native	OBL
Leucanthemum vulgare	Oxeye daisy	Invasive, non-native	FACU
Lonicera involucrata var. ledebourii	Coast twinberry	Native	FAC
Lotus corniculatus	Bird's foot trefoil	Non-native	FAC
Ludwigia peploides	Marsh purslane	Invasive, non-native	OBL
Lythrum hyssopifolia	Hyssop loosestrife	Invasive, non-native	OBL
Malva nicaeensis	Bull mallow	Non-native	NL
Malva parviflora	Cheeseweed mallow	Non-native	NL
Marah oregana	Coast man-root	Native	NL
Matricaria discoidea	Pineapple weed	Native	FACU
Mentha pulegium	Pennyroyal	Invasive, non-native	OBL
Nasturtium officinale	Watercress	Native	OBL
Nemophila menziesii	Baby blue eyes	Native	NL

Parentucellia viscosa	Yellow glandweed	Non-native	FAC
Persicaria lapathifolia	Common knotweed	Native	FACW
Phalaris aquatica	Harding grass	Non-native	FACU
Plantago elongata	Coastal plantain	Native	FACW
Plantago lanceolata	English plantain	Invasive, non-native	FACU
Plantago major	Common plantain	Non-native	FAC
Poa annua	Annual blue grass	Non-native	FAC
Poa compressa	Canada blue grass	Non-native	FACU
Polygonum austiniae	Rebecca Austin's knotweed	Native	FACU
Polypogon monspeliensis	Rabbitsfoot grass	Invasive, non-native	FACW
Polystichum munitum	Western swordfern	Native	FACU
Potamogeton natans	Floating leaved pondweed	Native	OBL
Prunus avium	Sweet cherry	Non-native	FACU
Psilocarphus brevissimus	Woolly marbles	Native	FACW
Ranunculus aquatilis	Whitewater crowfoot	Native	OBL
Ranunculus muricatus	Buttercup	Non-native	FACW
Ranunculus occidentalis var. occidentalis	Western buttercup	Native	FACW
Raphanus sativus	Jointed charlock	Invasive, non-native	NL
Rosa californica	California wild rose	Native	FAC
Rubus armeniacus	Himalayan blackberry	Invasive, non-native	FAC
Rubus parviflorus	Thimbleberry	Native	FACU
Rubus ursinus	California blackberry	Native	FACU
Rumex acetosella	Common sheep sorrel	Invasive, non-native	FACU
Rumex crispus	Curly dock	Invasive, non-native	FAC
Salix exigua	Sandbar willow	Native	FACW
Salix hookeriana	Coastal willow	Native	FACW
Salix lasiolepis	Arroyo willow	Native	FACW
Sambucus racemosa var. racemosa	Pacific red elderberry	Native	FACU
Scrophularia californica	California bee plant	Native	FAC
Senecio aronicoides	California groundsel	Native	NL
Silybum marianum	Milk thistle	Invasive, non-native	NL
Sisyrinchium bellum	Western blue eyed grass	Native	FACW
Solanum americanum	White nightshade	Native	FACU
Spergularia rubra	Purple sand spurry	Non-native	FAC
Stachys ajugoides	Hedge nettle	Native	OBL
Stachys mexicana	Mexican Hedge-nettle	Native	FACW
Taraxacum officinale ssp. officinale	Common dandelion	Non-native	FACU
Toxicodendron diversilobum	Poison oak	Native	FAC
Trifolium dubium	Shamrock clover	Non-native	FACU

Trifolium hirtum	Rose clover	Non-native	NL
Trifolium repens	White clover (cultivated)	Non-native	FAC
Umbellularia californica	California bay	Native	FAC
Urtica dioica	Stinging nettle	Native	FAC
Veronica anagallis-aquatica	Water speedwell	Non-native	OBL
Veronica peregrina	Neckweed	Native	FACW
Veronica persica	Bird's eye speedwell	Non-native	NL
Vicia sativa ssp. sativa	Spring vetch	Non-native	UPL
Vinca major	Vinca	Invasive, non-native	NL
Xanthium spinosum	Spiny cocklebur	Non-native	FACU
Xanthium strumarium	Rough cockleburr	Native	FAC
Zea mays	Cultivated corn	Non-native	NL

APPENDIX B: REPRESENTATIVE SITE PHOTOGRAPHS

	**Property entrance. Facing south across Hwy 36.**
	**Photo Point 1 – At property entrance looking west. October 15, 2022.**

Photo Point 1 – At property entrance looking south. October 15, 2022.

Photo Point 1 – At property entrance looking east. Hwy 36 far left. October 15, 2022.

	**Photo Point 2 – View south of cultivated corn field and access road. October 15, 2022.**
	**Photo Point 2 – View west of cultivated corn field. October 15, 2022.**

	**View south of access road from upper corn field to upper white clover field. Coastal willow, Himalayan blackberry, poison oak and poison hemlock in foreground. October 15, 2022.**
	**Photo Point 3 – View west of cultivated white clover field and fence line. White clover, poison oak, poison hemlock and spike bentgrass in view. October 15, 2022.**

	**Photo Point 3 – View south of cultivated white clover field. October 15, 2022.**
	**Photo Point 3 – View east of cultivated white clover field, access road and fence line. White clover, poison hemlock and Himalayan blackberry in view. October 15, 2022.**

	**Photo Point 4 – View south of adjacent property at fence line. Coastal willow and poison hemlock in view. October 15, 2022.**
	**Photo Point 4 – View west of white clover field and adjacent property at fence line. October 15, 2022.**

	**Photo Point 4 – View east of hidden fence line and white clover field. Coastal willow and white clover in view. October 15, 2022.**
	**Photo Point 5 – View north of adjacent property (left) and white clover field. October 15, 2022.**

	**Photo Point 5 – View west of adjacent property corner at fence line. Poison hemlock and Himalayan blackberry in view. October 15, 2022.**
	**Photo Point 5 – View southeast of upper property corner. Coastal willow and Himalayan blackberry in view. October 15, 2022.**

	**Photo Point 5 – View east of white clover field and upper fence line (far right). October 15, 2022.**
	**Photo Point 6 – View west of upper fence line and white clover field (right). October 15, 2022.**

	**Photo Point 6 – View south of fence line, lower corn field and adjacent property. October 15, 2022.**
	**Photo Point 6 – View east of fence line, white clover field (left), lower corn field and adjacent property. October 15, 2022.**

	**Photo Point 7 – View west of fence line, and clover field (right). October 15, 2022.**
	**Photo Point 7 – View north of fence line, and clover field (left). October 15, 2022.**

	**Photo Point 7a - Access road from upper white clover field to lower corn field. October 15, 2022.**
	**Photo Point 8 - View west of previous well head site and corn field. October 15, 2022.**

	**Photo Point 8 - View east of southern fence line, corn field and adjacent property. October 15, 2022.**
	**Photo Point 9 - View east of Wolverton Gulch and access road to eastern field. October 15, 2022.**

	**Photo Point 9 - View north of west bank of Wolverton Gulch and adjacent corn field. Red alder riparian corridor in view. October 15, 2022.**
	**East of Photo Point 9 - View north of east bank of Wolverton Gulch. October 15, 2022.**

	**East of Photo Point 9 - View north of east riparian margin of Wolverton Gulch and adjacent field. October 15, 2022.**
	**Photo Point 10 - View north of fence line, River Bar Rd and adjacent property. Red alder, Himalayan blackberry in view. October 15, 2022.**

	**Photo Point 10 - View south of fence line, River Bar Rd, cultivated hay field and Wolverton Gulch riparian vegetation. October 15, 2022.**
	**Photo Point 11 - View south of fence line, lower corn fields (left) and upper white clover field. October 15, 2022.**

	**Photo Point 11 - View west of fence line and white clover field. Coastal willow and white clover in view. October 15, 2022.**
	**Photo Point 11 - View east of fence line (left), ruderal area and lower corn field. October 15, 2022.**

	**June 17, 2023. Active irrigation in lower hayfield**
	**June 17, 2023 Active irrigation in lower hayfield**

	**June 17, 2023 Irrigation head in lower hayfield (40.543634, -124.113177).**
	**June 17, 2023. Access road / seasonal wet area. (40.544146, -124.115401)**

	**June 17, 2023. Ruderal stock pasture south of barn.**
	**June 18, 2023. Wetland investigation site 001. Wetland sample point. (40.544146, -124.115401)**

	**June 18, 2023. Wetland investigation site 001. Wetland sample point. Excavated pit. (40.544146, -124.115401)**
	**June 18, 2023. Wetland investigation site 001. Upland sample point. Excavated pit. (40.544050, -124.115400)**

June 18, 2023. Wetland investigation site 002. Wetland sample point. Excavated pit. (40.544237, -124.115843)

June 18, 2023. Wetland investigation site 002. View east. Poison hemlock, California blackberry doms. Historic railroad rail in foreground (40.544236, -124.115879).

	**June 18, 2023. Wolverton Gulch at concrete box culvert and Hwy 36, looking south. (40.546012, -124.115143).**
	**June 18, 2023. Wolverton Gulch streambed looking south. (40.545951, -124.115156).**

APPENDIX C: FIELD DATA FORMS

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

Project/Site: NORTH COAST SOLAR City/County: Hydesville, Humboldt Sampling Date: 06/18/2023
Applicant/Owner: Borrego Solar State: CA Sampling Point: 001 W
Investigator(s): K. Stuart Section, Township, Range: Hydesville, T2R1, Sec 19 SE/NW
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 3
Subregion (LRR): LRR A Lat: 40.544146 Long: -124.115401 Datum: WGS84
Soil Map Unit Name: Sollygrant 0-2% Slopes (127) NWI classification: Hydric
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Well drained fine sandy loam above coarse gravel layers. Soil stays wet long enough for FACW plants but no evidence of anoxic conditions

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 1 M²)	Absolute % Cover	Dominant Species?	Indicator Status
1. NA			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 1 M²)			
1. NA			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 1 M²)			
1. Juncus balticus var hut.	80	Y	FACW
2. Lythrum hyssopifolia	20	Y	OBL
3. Matricaria discoidea	5	N	FACU
4. Veronica peregrina	3	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	108 = Total Cover		
Woody Vine Stratum (Plot size: 1 M²)			
1. NA			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 20	x 1 = 20
FACW species 80	x 2 = 160
FAC species ____	x 3 = ____
FACU species 5	x 4 = 20
UPL species ____	x 5 = ____
Column Totals: 105 (A)	200 (B)

Prevalence Index = B/A = 1.90

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: 601W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 2.5/1	100	—	—			fine sandy loam	
8"-10							coarse gravel	

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

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

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

Depth (inches): 8+

Hydric Soil Present? Yes ___ No ✓

Remarks:

Soil ribbon < 1" Gravel layer impenetrable beyond 10" to shovel. All mineral soil. Not mucky. Coarse gravel 8"+, Size 1"-6.5". No apparent sulfides.

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:

Concave access road between pastures. Pasture to the south is irrigated.

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

Project/Site: Northcoast Solar City/County: Hydesville, Humboldt Sampling Date: 6/18/2023
Applicant/Owner: Borrego Solar State: CA Sampling Point: 001 W
Investigator(s): K. Studt Section, Township, Range: Hydesville, T2, R1, Sec 19SE/NW
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR): LRRA Lat: 40.544050 Long: -124.115400 Datum: WGS84
Soil Map Unit Name: 127 – Sallyjaint, 0-2% Slopes NWI classification: Hydric
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ✓, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. NA			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. NA			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 1 M²)			
1. Festuca perennis	97	Y	FAC
2. Mentha pulegium	3	N	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
FACW species		x 2 =	
FAC species	97	x 3 =	291
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	100 (A)		294 (B)

Prevalence Index = B/A = 2.94

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: Location marks edge of irrigated pasture.

SOIL

Sampling Point: 061 U

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	2.5Y 2.5/1		100%	No Redox			fine Sandy loam	
5-20	2.5Y 2.5/1	97	5YR 4/2	3+	D	M	fine Sandy loam	

[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: None

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

Live roots beyond 17", no oxidized rhizospheres.

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:

Atypical Situations - Data Form 3

Applicant Name: Borrego Solar

Project Name: Northcoast Solar

Location: Seasonal wetland **Plot Number:** 001W **Date:** 06/18/2023

A. Vegetation:

1. Type of Alteration: Vegetation is atypical of the surrounding vegetation due to a frequent disturbance regime (access road between agricultural fields) and due to this area being situated above a historic railway (ca. 1907). Adjacent irrigated cropland may also be contributing to more saturated conditions for longer periods of time. Based on aerial photos this area has been in agricultural use since 1940.

2. Effect on Vegetation: Annual, low lying hydrophytic species.

3. Previous Vegetation: Unknown. Historic aerial imagery from 1940 shows all of the surrounding area as cultivated agricultural fields and the presence of the historic railway. Historically it is very unlikely this area supported seasonal wetland species.

4. Hydrophytic Vegetation? Yes ☐ No ☒

B. Soils:

1. Type of Alteration: Site is situated above a historic railway. Soils are shallow to 8" before reaching an indurate but likely permeable gravel layer that was once the railway ballast. Post railway operation, this site has been used as an access road between two pasture areas. Adjacent cropland to the south are regularly irrigated.

2. Effect on Soils: Soils are shallow and dark but lack hydric indicators.

3. Previous Soils: Surrounding soils are classified as hydric (127 - Jollygiant, 0-2% slopes) but the soil survey (NRCS 2023) states in the soil description, "This soil dos not meet hydric conditions."

4. Hydric Soils? Yes ☐ No ☒

C. Hydrology:

1. Type of Alteration: The historic railway formed a concave basin that has been bisected by access roads which in themselves are still concave but slightly higher than the adjacent railway beds.

2. Effect on Hydrology: Increased ponding/saturation during wet season.

3. Previous Hydrology: Flat terrace, 0-2% slopes without any significant hydrogeomorphological features except for Wolverton Gulch, approx.. 925 linear feet to the east.

4. Wetland Hydrology? Yes ☐ No ☒

Characterized by:
Kristiaan Stuart

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

Project/Site: Northcoast Solar City/County: Alton, Humboldt Sampling Date: 6/18/2023
Applicant/Owner: Borrego Solar State: CA Sampling Point: 002 W
Investigator(s): K. Studnek Section, Township, Range: Hydesville, T2 R1, Sec 19 SE/NW
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 2-3%
Subregion (LRR): LRR A Lat: 40.544237 Long: -124.115843 Datum: WGS 84
Soil Map Unit Name: 127 – Sollyglaunt 0-2% Slopes NWI classification: Hydric
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

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: 1M²)			
1. Conium maculatum	97	Y	FAC
2. Equisetum arvense	2	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	99% = Total Cover		
Woody Vine Stratum (Plot size: 1M²)			
1. Rubus ursinus	1	✓	FACU
2.			
	1% = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 98	x 3 =	291
FACU species 2	x 4 =	8
UPL species	x 5 =	
Column Totals: 100 (A)		299 (B)

Prevalence Index = B/A = 2.99

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:
Algal mats present

SOIL

Sampling Point: 002W

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"	5YR 2.5/1	100	None				Sandy loam	
10-12"	Coarse gravels 1"-4.5"							

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: Gravel

Depth (inches): 10"

Hydric Soil Present? Yes ____ No ✓

Remarks: Soil loose and friable at surface. Well drained. Living roots to 10+", No redox.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ____ No ✓ 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: Northcoast Solar City/County: Alton, Humboldt Sampling Date: 6/18/25
Applicant/Owner: Borrego Solar State: CA Sampling Point: 002U
Investigator(s): K. Stuadt Section, Township, Range: Hydesville, T2R1, Sec 19SE/NW
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR): LRR H Lat: 40.544142 Long: -124.115951 Datum: WGS84
Soil Map Unit Name: 127 - Sollyglant 0-2% NWI classification: Hydric
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ✓, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

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 M²)			
1. Festuca perennis	90	Y	FAC
2. Tr. folium repens	10	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

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 100	x 3 = 300
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: 100 (A)	300 (B)

Prevalence Index = B/A = 3.0

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: Cultivated, Irrigated pasture

SOIL

Sampling Point: 602 u

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
0-15	5YR 25/1	100	— None				Sandy loam	
15-20	5YR 3/1	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:

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:

Atypical Situations - Data Form 3

Applicant Name: Borrego Solar

Project Name: Northcoast Solar

Location: Seasonal wetland **Plot Number: 002W** **Date: 06/18/2023**

A. Vegetation:

1. Type of Alteration: Vegetation is atypical of the surrounding vegetation due to a frequent disturbance regime (access road between agricultural fields) and due to this area being situated above and immediately adjacent to a historic railway (ca. 1907). Adjacent irrigated cropland may also be contributing to more saturated conditions for longer periods of time. Based on aerial photos this area has been in agricultural use since at least 1940.

2. Effect on Vegetation: Presence of stands of poison hemlock (FAC, dominant), field horsetail (FAC) and California blackberry (FACU).

3. Previous Vegetation: Unknown. Historic aerial imagery from 1940 shows all of the surrounding area as cultivated agricultural fields and the presence of the historic railway. Historically, prior to ground disturbance, it is very unlikely this area supported facultative wetland species.

4. Hydrophytic Vegetation? Yes ☐ No ☒

B. Soils:

1. Type of Alteration: Site is situated above and adjacent to a historic railway. Soils are shallow to 10" before reaching an indurate but likely permeable gravel layer that was once the railway ballast. Soils are shallow and dark but are not situated above bedrock per TF12 hydric requirements. Soils do appear well drained based on fine sandy loam texture but algal mats at surface show a per aquic moisture regime.

2. Effect on Soils: Soils are shallow and dark but lack hydric indicators. Track ballast gravel layer at 10 inches may slow water percolation leading to seasonally perched conditions.

3. Previous Soils: Surrounding soils are classified as hydric (127 - Jollygiant, 0-2% slopes) but the soil survey (NRCS 2023) states in the soil description, "This soil dos not meet hydric conditions." Surrounding soils (Field data form 002U) are also a fine sandy loam to 20 inches and also appear to be well drained.

4. Hydric Soils? Yes ☐ No ☒

C. Hydrology:

1. Type of Alteration: The historic railway formed a concave basin that has been bisected by access roads on either side which in themselves are still concave but

slightly higher than the adjacent railway bed.

2. Effect on Hydrology: Increased ponding/saturation during wet season.

3. Previous Hydrology: Flat terrace, 0-2% slopes without any significant hydrogeomorphological features except for Wolverton Gulch, approx.. 925 linear feet to the east.

4. Wetland Hydrology? Yes ☐ No ☒

Characterized by:
Kristiaan Stuart

Project: Northcoast Solar **Date:** 06/18/2023

Location: Alton, CA **n estigator s :** K. Stuart

Project Description:
Photovoltaic solar installation located approximately 1.35 miles east of Alton, Humboldt County, CA on state Highway 36. Center GPS coordinates for the project s study area are: -124.116516, 40.542966 (WGS 84).

Describe the ri er or stream s condition disturbances in-stream structures etc. :
Wolverton Gulch is a small perennial stream that enters the project s study area as a 12.5 x 14 (WxH) concrete box culvert, where it intersects with Highway 36, with concrete wing walls extending to approximately 18.5 lateral feet (outside dimensions). Canopy closer is approx.. 50% for the northern section of Wolverton Gulch in the study area and decreases to approx.. 25% in the southernmost reach in the southern segment. There is nearly no observable disturbance to the stream and associated riparian up to adjacent access roads in the northern section whereas the southern section has adjacent and encroaching agricultural practices and an access road through the stream at the southernmost extent of the property/stream intersection.

-site n ormation

emotely sensed image s ac uired ☒ **es** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, HW , and any other features of interest on the image(s) describe below escription:

Images attached shows northernmost section of Wolverton Gulch near intersection of Highway 36.

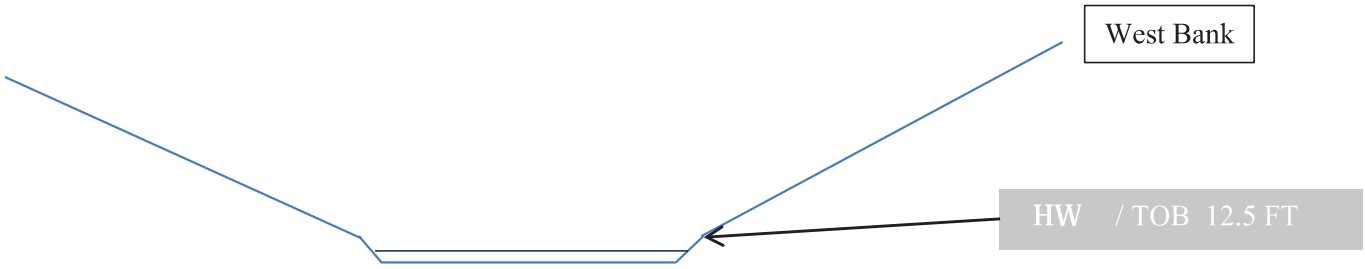
Hydrologic hydraulic in ormation ac uired ☐ **es** ☒ **No** [If yes, attach information to datasheet(s) and describe below. escription:

No hydraulic data available for this stream.

List and describe any other supporting in ormation recei ed ac uired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the HW along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in HW indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

ransect cross-section dra ing: (choose a location that is representative of the dominant stream characteristics over some distance label the HW and other features of interest along the transect include an estimate of transect length).



Brea in Slope at H : ☐ Sharp (60) | ☒ oderate (30-60) | ☐ Gentle (30) | ☐None
Notes/ escription:
East bank slope is not as steep as west bank.

Sediment e ture: Estimate percentages to describe the general sediment texture above and below the HW .

	Clay/Silt 0.05mm	Sand 0.05-2mm	Gravel 2mm- 1cm	Cobbles 1 - 10cm	Boulders 10cm	eveloped Soil Hori ons (Y/N)
Above HW						
Below HW	0	10	20	70	0	N

Notes/ escription:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the HW .

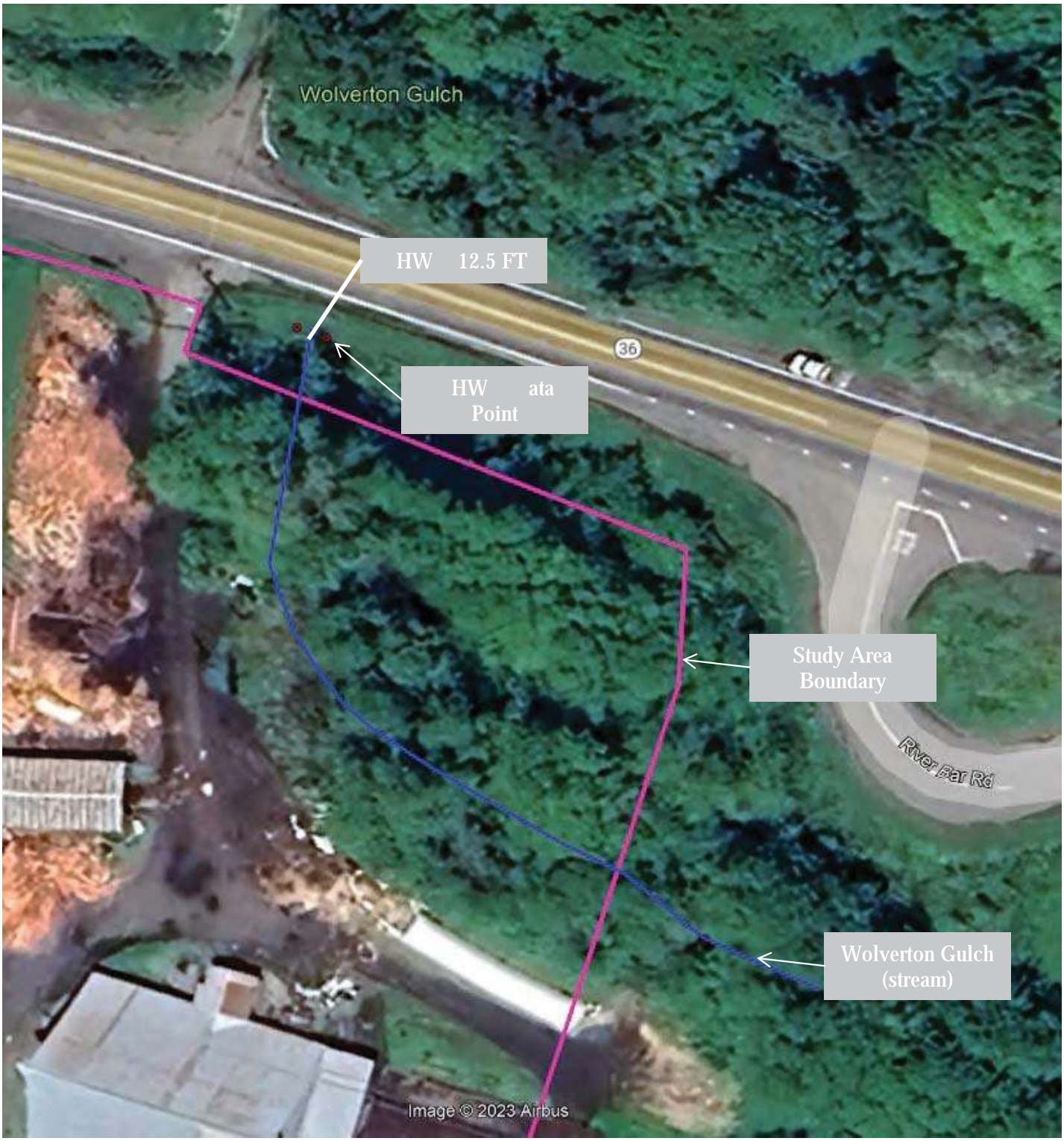
	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above HW	50	70	30	0
Below HW	50	30	5	40

Notes/ escription:

ther idence: ist/describe any additional field evidence and/or lines of reasoning used to support your delineation.

Northernmost e tent o ol erton ulch in the study area.

Aerial image o ol erton ulch at northernmost e tent o study area.



OHWM Delineation Cover Sheet Page 1 of 8

Project: Borrego Solar **Date:** 3/22/2020

Location: Fortuna, CA **Investigator(s):** K. Stuart

Project Description:
Photo Voltaic array installation.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):
Incised stream with narrow bed. Bed substrate is predominantly gravel Depth 5"-18". Low gradient/slow velocity. Narrow to no riparian vegetation in some places.

Off-site Information

Remotely sensed image(s) acquired? ☑ Yes ☐ No [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

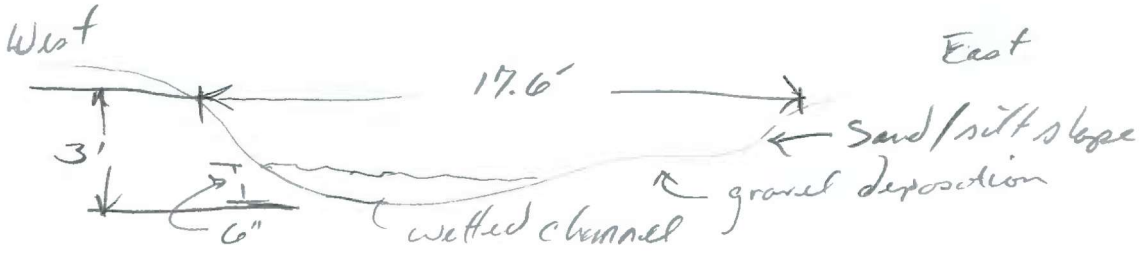
Hydrologic/hydraulic information acquired? ☐ Yes ☑ No [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

Transect #1



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☐ Moderate (30–60°) | ☑ Gentle (< 30°) | ☐ None
Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	15	85				N
Below OHWM	10	30	60			N

Notes/Description: Shallow, low gradient (energy) stream.

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	10		20	70
Below OHWM				

Notes/Description: Alnus rubra, Cyperus sp. Ranunculus gmelinii, Polygonum sp./Ludwigia sp. Salix lasiolepis, Salix exigua

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

Project: Borrego Solar **Date:** 3/22/2023

Location: Fortuna, CA **Investigator(s):** K Stanfield

Project Description:

See sheet #1

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Off-site Information

Remotely sensed image(s) acquired? ☑ Yes ☐ No [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

Hydrologic/hydraulic information acquired? ☐ Yes ☑ No [If yes, attach information to datasheet(s) and describe below.] Description:

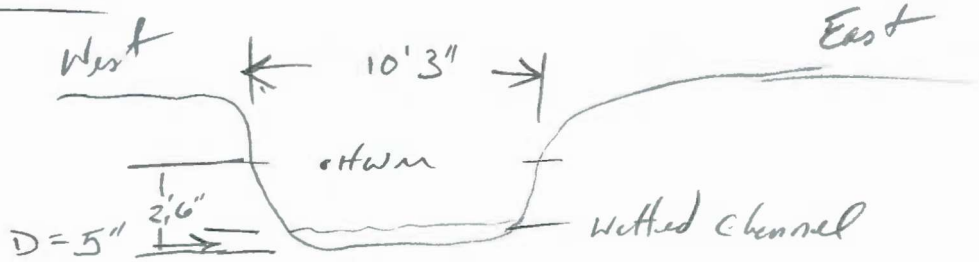
List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Datasheet # OHWM - 3/4 **OHWM Delineation Datasheet** Page 4 of 8

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

Transect #2



Break in Slope at OHWM: ☑ Sharp (> 60°) | ☐ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	40	50	10			✓
Below OHWM	65	5	30			✓

Notes/Description: Incised, narrow channel. Dom. plants Alnus rubra, Polygonum sp. Cyperus sp

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	30	–	70	–
Below OHWM	–	–	30	70

Notes/Description: See above.

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM Delineation Cover Sheet

Project: Borrego Solar **Date:** 3/22/2020

Location: Fortuna, OH **Investigator(s):** K. Stuart

Project Description:

See sheet #1

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Off-site Information

Remotely sensed image(s) acquired? ☐ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

Hydrologic/hydraulic information acquired? ☐ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

Transect #3

Break in Slope at OHWM: ☑ Sharp (> 60°) | ☐ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	50	30	20	—	—	N
Below OHWM	60	10	30	—	—	N

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	15	—	85	—
Below OHWM	—	—	15	85

Notes/Description: Cyperus sp. Alnus rubra (down)

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM Delineation Cover Sheet Page 7 of 8

Project: Borrego Solar **Date:** 3/22/2020

Location: Fortuna, CA **Investigator(s):** K Stuart

Project Description:

See sheet #1

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Off-site Information

Remotely sensed image(s) acquired? ☑ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

Hydrologic/hydraulic information acquired? ☐ **Yes** ☑ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Datasheet # OHWM 7/8 **OHWM Delineation Datasheet** Page 8 of 8

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

Transect #4

Break in Slope at OHWM: ☐ Sharp (> 60°) | ☑ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	40	60	—	—	—	✓
Below OHWM	60	20	10	-	—	✓

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	30	—	76	—
Below OHWM	—	—	20	80

Notes/Description: Cyperus sp. Acnus rubra (dom)

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation