

**AQUATIC RESOURCE DELINEATION REPORT
FOR THE HIGHLAND FARMS CULTIVATION PROJECT AT
7408, 7522, 7527, 7634, 7746 HIGHLAND SPRINGS ROAD AND 7257,
7357 AMBER RIDGE COURT, LAKEPORT, CALIFORNIA**

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1. INTRODUCTION

1.1. Purpose and Scope

Graening and Associates, LLC conducted a formal delineation of jurisdictional water bodies on the Highland Farms property located in Lakeport, in Lake County, California. This report presents the results of the field survey conducted in accordance with the USACE Wetlands Delineation Manual to determine which portions of this property may qualify as potentially jurisdictional waters of the United States (including wetlands). USACE is ultimately responsible for determining the limits of their jurisdiction, and this report has been prepared to assist the USACE with their determination. This report also identifies which portions of this property may qualify as potentially jurisdictional waters of the State of California (including isolated wetlands and riparian zones). The State of California is ultimately responsible for determining the limits of their jurisdiction, and this report has also been prepared to assist State agencies with their determination.

The purpose of this delineation was to confirm or modify the previously delineated wetlands and channels on the Property by Pinecrest Environmental Consulting (2020) and AES-Montrose, Inc. (2022).

1.2. Project Location and Description

The proposed Highland Farms cultivation project involves multiple parcels with addresses of 7408, 7522, 7527, 7634, and 7746 Highland Springs Road and 7257 and 7357 Amber Ridge Court, Lakeport (collectively, the "Property"). The parcels and their proposed uses are as follows:

- Cultivation on 3 parcels: APNs 007-006-34 (50 acres), 007-006-35 (30 acres), and 007-006-41 (39.20 acres)
- Contiguous parcels used to only to meet acreage requirements: APNs 007-006-27 (269.06 acres), 007-006-41 (40 acres), 007-057-02 (79.93 acres), and 007-057-01 (4.75 acres)
- An access road to Highland Springs Road on APNs 007-006-27, 007-006-40, and 007-006-41 (and a road easement on the following parcels owned by others: APNs 007-043-04 and 007-043-01)
- A secondary access road to Amber Ridge Court on APNs 007-057-01 and 007-057-02 (and a road easement on the following parcels owned by others: APNs 007-056-01, 007-059-02, and 007-055-03).

The Proposed Project consists of the following developments within three Project Areas (a cultivation facility and 2 access roads):

- Cultivation compound "A", "B", "C", "D1", and "D2"
- Product processing building "E", dimensions of 60 feet by 100 feet, two stories, with 6 parking stalls and 1 ADA parking stall
- Guard shack (10 feet by 12 feet) and traffic gate
- road improvements (grading and gravel armoring) to primary private access road (from Highland Springs Road to compound "C"), 1.2 miles in length and 12 feet in width, PRC 4290 compliant with turnouts and hammerhead, and including some pipe culvert upgrades
- road improvements (grading and gravel armoring) to a secondary private access road (from Amber Ridge Court on neighboring property to Compound "C"), 0.25 mile in length and 12 feet in width), PRC 4290 compliant with turnouts, and including some pipe culvert upgrades
- ATV paths (4 feet wide) between compounds 2 new wells and new water tanks: a fire-protection water tank (2,500 gallons), and 28 water storage tanks, each 5,000 gallons; also an abandonment of well adjacent to the intermittent stream
- Product waste disposal areas
- 3 stormwater retention basins

The aggregated cultivation area perimeter (including features A, B, C, D1, D2, and E) is about 33 acres.

A future phase, "Phase 2," involves the conversion of portions of outdoor cultivation compound "C" to a commercial building complex and associated parking (approx. 53 stalls and 3 ADA stalls). The proposed buildings are: a processing building "I" (280 feet by 100 feet); a nursery greenhouse building "J" (296 feet by 100 feet), with 20,748 sq. ft. of canopy; and a mixed light cultivation greenhouse building "H" (296 feet by 160 feet), with 34,404 sq. ft. of canopy.

1.3. REGULATORY SETTING

Real property in California that contains water resources is subject to various federal and state regulations, and activities occurring in these water resources may require permits, licenses, variances, or similar authorization from federal, state and local agencies. Following is a brief, but not exhaustive, summary of such regulations, as they apply particularly to field delineations of jurisdictional waterbodies.

1.3.1. Federal Regulations

At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 United States Code [USC] 1344), is the primary law regulating wetlands and surface waters. In Section 404 of the CWA, waters of the US are defined as: all waters used in interstate or foreign commerce; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent and ephemeral streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, where the use, degradation, or destruction of which could affect interstate commerce; impoundments of these waters; tributaries of these waters; or wetlands adjacent to these waters (33 CFR Part 328). With non-tidal waters, in the absence of adjacent wetlands, the extent of federal jurisdiction is defined by the ordinary high water mark - the line on the shore established by the fluctuations of water, and indicated by a clear, natural line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, or the presence of litter and debris. Wetlands are defined as: "...those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." (Federal Register 1980, 1982).

Any person, firm, or agency planning to alter or work in navigable waterbodies, including the discharge of dredged or fill material, must first obtain authorization from the United States Army Corps of Engineers (USACE). Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) prohibits the obstruction or alteration of navigable waters of the US without a permit from USACE. Section 301 of the Federal Water Pollution Control Act, as amended ("Clean Water Act") prohibits the discharge of pollutants, including dredged or fill material, into waters of the US without a Section 404 permit from USACE (33 USC 1344). If the proposed project involves species (or their habitat) listed under the federal Endangered Species Act of 1973, USACE must initiate consultation with USFWS or National Marine Fisheries Service pursuant to Section 7 (16 USC 1536; 40 CFR Part 402). Wetland features that exhibit vernal pool characteristics may be protected under the federal Endangered Species Act or California Endangered Species Act, because several crustaceans listed as threatened or endangered are dependent upon vernal pool habitat.

Under CWA Section 401, every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain certification that the proposed activity will comply with State water quality standards. The applicable Regional Water Quality Control Board must certify that a USACE Section 404 Permit action meets state water quality objectives by issuing a Water Quality Certification. California Department of Fish and Game provides comment on USACE permit actions under the Fish and Wildlife Coordination Act. Under CWA Section 402, any construction project that disturbs at least one acre of land requires enrollment in the State's construction general permitting program under the

National Pollutant Discharge Elimination System and implementation of a storm water pollution prevention plan.

The United States Environmental Protection Agency (USEPA) and USACE (2008) issued joint guidance regarding Clean Water Act jurisdiction following the decision in the consolidated cases of *Rapanos v. United States* and *Carabell v. United States*. USACE and USEPA will assert jurisdiction over traditional navigable waters, and non-navigable tributaries that have relatively permanent flow, and adjacent wetlands. The agencies will decide jurisdiction on a case-by-case basis for non-navigable tributaries that do not have relatively permanent flow, and adjacent wetlands, based upon significant nexus criteria (Kennedy Test, Scalia Test). The agencies generally will not assert jurisdiction over ditches, swales or other erosional features, or isolated wetlands.

1.3.2. State Regulations

Waters of the State are regulated primarily under the California Water Code and the California Code of Regulations Title 23: Water and Title 27: Environmental Protection. All water features in California, on public and private lands, in both natural and artificial channels, including isolated wetland features and impermanent drainages that are not claimed as waters of the US, are considered waters of the State. Waters of the State are protected under the Porter-Cologne Water Quality Control Act (California Water Code, Division 7: Water Quality) and are regulated by the State Water Resources Control Board (SWRCB) and its 9 Regional Water Quality Control Boards.

All parties proposing to discharge materials that could affect waters of the State must file a report of waste discharge with the appropriate regional board. The regional board will then respond to the report by issuing waste discharge requirements (WDRs) in a public hearing, or by waiving WDRs (with or without conditions) for that proposed discharge. Both of the terms “discharge of waste” and “waters of the State” are broadly defined in the Porter-Cologne Act, such that discharges of waste include fill, any material resulting from human activity (including construction), or any other “discharge” that may directly or indirectly impact waters of the State.

Additional statewide regulations that protect wetlands and riparian areas include the Wetlands Conservation Policy (Executive Order W-59-93), also known as the State’s “No Net Loss” Policy for Wetlands; and the Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program (State Water Board Resolution No. 2004-0030).

California Fish and Game Code (§1600-1607, 5650F) protects fishery resources by regulating “...*any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.*” California Department of Fish and Wildlife (CDFW) requires notification prior to project commencement, and issuance of a Lake or Streambed Alteration Agreement, if a proposed project will result in the alteration or degradation of waters of the State. The limit of CDFW jurisdiction is currently interpreted to be the “stream zone”, defined as “*that portion of the stream channel that restricts lateral movement of water*” and delineated at “*the top of the bank or the outer edge of any riparian vegetation, whichever is more landward*”. CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the CDFW and the applicant is the Streambed Alteration Agreement.

The California Coastal Act requires that most development avoid and buffer wetland resources (California Coastal Commission 2004, 2006). Policies include:

- Section 30231, which requires the maintenance and restoration (if feasible) of the biological productivity and quality of wetlands appropriate to maintain optimum populations of marine organisms and for the protection of human health.

- Section 30233, which limits the filling of wetlands to identified high priority uses, including certain boating facilities, public recreational piers, restoration, nature study, and incidental public services (such as burying cables or pipes). Any wetland fill must be avoided unless there is no feasible less environmentally damaging alternative, and authorized fill must be fully mitigated.

The California Coastal Commission (CCC)'s regulations establish a "one parameter definition" that only requires evidence of 1 of the 3 USACE parameters to establish wetland conditions:

"Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats." (14 CCR Section 13577).

1.4. ENVIRONMENTAL SETTING

The Study Area is located within Inner North Coast Range geographic subregion, which is contained within the Northwestern California geographic subdivision of the larger California Floristic Province (Baldwin et al. 2012). This region has a Mediterranean-type climate, characterized by distinct seasons of hot, dry summers and wet, moderately-cold winters. The Study Area and vicinity is in Climate Zone 14 “Northern California’s Inland Areas with Some Ocean Influence”, with maritime air moderating temperatures that would otherwise be hotter in summer and colder in the winter (Sunset, 2024). On the entire Property, the elevation ranges from approximately 1,700 feet to 2,230 feet above mean sea level. The topography of the Study Area is a portion of a valley floor in the coastal ranges. Water onsite mainly drains south and west through canyons with dense chaparral vegetation. After passing offsite water enters Highland Creek, which flows east for 1.5 miles before entering Highland Springs Reservoir. The Study Area contains several ephemeral watercourses and one intermittent watercourse. Land use of the Property was primarily cattle range, hay fields, and rural residential.

2. METHODOLOGY

2.1. PRELIMINARY DATA GATHERING AND RESEARCH

The delineation was conducted in accordance with the:

- 1987 Corps of Engineers Wetland Delineation Manual
- 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) and
- 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). U.S. Army Engineer Research and Development Center Environmental Laboratory, Vicksburg, MS. 153 pp.

Methodology followed USACE and USEPA guidelines, and consisted of preliminary data gathering and research, field surveys, digital mapping, and documentation of final boundary determinations.

2.2. Determination Procedures

The purpose of the field determination was to: 1) identify any and all water features that are subject to federal jurisdiction (*i.e.*, waters of the US) within the Study Area; and 2) if present, determine the boundary of each water feature. The entire study area was assessed in such a manner as to view all areas to the degree necessary to determine the vegetation community types and the presence or absence of jurisdictional water features. Wetland field determination procedures followed the USACE *Wetlands Delineation Manual* technical guidelines for a Level 2 Routine Field Determination (Environmental Laboratory 1987). Additionally, the appropriate USACE regional supplement was also consulted.

The diagnostic environmental characteristics of hydrophytic vegetation, hydric soils, and wetland hydrology (*i.e.*, 3-parameter approach) were used as the standard for determining if specific areas qualified as wetlands (Environmental Laboratory 1987). A subject area was determined to be a wetland if all 3 requisite characteristics were present; as a general rule, evidence of a minimum of one positive indicator for each parameter must be found in order to make a positive wetland determination.

Hydrophytic vegetation is defined as “...the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils sufficient in duration to exert a controlling influence on the plant species present.” (Environmental Laboratory 1987). Hydrophytic vegetation indicators included: prevalence of vegetation; majority of dominant plant species are obligate or facultative wetland plants (hydrophytes); morphological or physiological adaptations to saturated soil conditions; and species listed on the *National List of Plant Species that Occur in Wetlands* (USFWS 2006a) and the *Regional List* (Region 10) (USFWS 2006b). This National List divides plant species into categories based upon their frequency of occurrence in wetlands. These categories are: OBL = obligate wetland plants that occur almost always in wetlands under natural conditions (estimated probability greater than 99%); FACW = facultative wetland plants that usually occur in wetlands, but occasionally occur in non-wetlands (estimated probability 67 – 99%); FAC = facultative wetland plants that are equally likely to occur in wetlands or non-wetlands (estimated probability 34 – 66 %); FACU – facultative upland plants that usually occur in non-wetlands, but occasionally are found in wetlands (estimated probability 1 – 33 %); UPL = obligate upland plants that almost always occur in non-wetlands (estimated probability greater than 99%); NI and UNK = insufficient information to determine status; NL = not listed; NA = no agreement by Regional Panel on status; NO = species does not occur in specified region; * (asterisk) indicates tentative assignment; + (positive) or – (negative) sign indicates higher or lower frequency in its category, respectively. During field investigations, the percentage of hydrophytic plant coverage was determined based on the ratio of wetland indicator species coverage present to the total plant coverage present. More than 50 percent of the dominant plant species cover must be FAC, FACW, or OBL to meet the hydrophytic vegetation criterion.

Hydric soils are defined as soils that are “...formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.” (Environmental Laboratory 1987). A minimum of one week of inundation or 14 consecutive days of saturation during the growing season is a typical requirement. The criteria for establishing the presence of hydric soils vary among different soil types and drainage classes. Hydric soil indicators include evidence of reducing or redoximorphic conditions (including sulfidic odor, organic streaking), gleyed, mottled, or low-chroma soils, iron and manganese concretions, and low dissolved oxygen concentration (aquic moisture regime); organic soils (histosols); or mineral soils saturated and rich in organics (histic epipedon) (NRCS 2006a). Richardson and Vepraskas (2001) present a thorough discussion of wetland soil science. In the absence of visible field indicators, hydric soil conditions may be determined according to two criteria: 1) all dominant plant species have an indicator status of OBL and/or FACW (at least one dominant plant species must be OBL); and 2) areas below the level of ordinary high water are frequently flooded for long duration or very long duration during the growing season and possess an aquic (reducing) moisture regime. Soils are also classified as hydric or non-hydric by NRCS (2006b).

Wetland hydrology “...encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season” (Environmental Laboratory 1987). Many factors influence site-specific hydrology, including the precipitation, stratigraphy, topography, soil permeability, and plant cover of the site. In general, inundation or saturation must occur for at least 5 percent of the growing season to qualify as wetland hydrology. The degree of inundation or saturation at the subject site can vary widely from year to year depending on rainfall patterns within the watershed. Primary wetland hydrology indicators include visual observations of inundation or soil saturation, water marks and water-stained leaves, sediment deposits, drift lines, and drainage patterns in wetlands.

Sampling locations were established within potential wetland areas and within adjacent uplands, where present, to determine the boundary of wetlands. At each sampling point, the location was georeferenced using a GPS receiver and marked on an aerial photograph; a numbered pin flag or lathe was placed, where necessary, to assist other surveyors. Information on vegetation, soils, and hydrology was recorded on a USACE *Routine Wetland Determination Data Form*.

Dominant and subdominant plant species in each vegetative stratum (e.g., tree, shrub, forb) that occurred within approximately 5 to 10 feet of the sampling point were identified and recorded, and their wetland indicator status determined. All visible flora observed were recorded in a field notebook and identified to the lowest possible taxon; a hand lens was used where necessary. When a specimen could not be identified *in situ*, a photograph or voucher specimen (depending upon scientific permit requirements) was taken and identified later in the laboratory using a dissecting scope where necessary. Taxonomic determinations and nomenclature followed these references: plants—Pavlik (1991), Brenzel (2007), Stuart and Sawyer (2001), Lanner (2002), Baldwin et al. (2012), Calflora (2019), University of California at Berkeley (2019a,b).

Where necessary, a soil pit was dug with a spade to expose at least 16 inches of soil profile, and the sample evaluated for hydric soil indicators. Munsell Soil Color Charts (2000 edition, Gretagmacbeth, Inc.) were used to determine soil matrix and mottle color (hue, value, and chroma), and soil type and particle size was also noted. NRCS (1999) Soil Taxonomy handbook was referenced for soil classification where necessary. Based on the results of the 3-parameter test, the extent of each potential wetland was mapped in the field using a GPS receiver capable of submeter accuracy and/or demarcated on aerial photographs for later “heads-up” digitization. Wetlands and other aquatic habitats were classified using the USFWS “*Classification System for Wetland and Deepwater Habitats*”, or “Cowardin class” (Cowardin et al., 1979; USFWS 2014). A determination was made whether normal environmental conditions exist; atypical conditions followed a modified procedure described in the USACE Manual

(Environmental Laboratory 1987). Geographic analyses, including acreage calculations, were performed using geographical information system software (ArcGIS 10, ESRI, Inc.).

For identification of water features other than wetlands that are subject to federal or State jurisdiction, 2 principal field characteristics were evaluated: 1) the presence of a channel; and 2) the presence of an ordinary high water mark. The ordinary high water mark is defined in 33 CFR Part 329.11 as the line on the shore established by the fluctuations of water, and indicated by a clear, natural line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, or the presence of litter and debris. Other characteristics were noted, where possible: description of hydrologic feature type, length, approximate discharge volume, gradient, range between low and high water mark, width of riparian vegetation, etc. For determination of whether these water bodies constituted waters of the US, USACE regulations (33 CRF 328) were consulted. Data sheets for these non-wetland water bodies were completed at representative locations and were included in the Appendix.

A joint USEPA/USACE memorandum dated 2008 provided guidance to implementing the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (hereafter referred to simply as "Rapanos") which addressed the jurisdiction over waters of the United States under the Clean Water Act. In *Rapanos*, the Supreme Court restricted where the federal government can apply the Clean Water Act, specifically by determining whether a wetland or tributary is a "water of the United States." According to USEPA & USACE (2008), jurisdiction will continue to be asserted over "all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide." These waters are referred to as traditional navigable waters. The agencies will also continue to assert jurisdiction over wetlands adjacent to traditional navigable waters, where "adjacent" means "bordering, contiguous, or neighboring." Finding a continuous surface connection is not required to establish adjacency under this definition (USEPA & USACE 2008).

A non-navigable tributary of a traditional navigable water is a non-navigable water body whose waters flow into a traditional navigable water either directly or indirectly by means of other tributaries. Clean Water Act jurisdiction will continue to be held over non-navigable tributaries that are "relatively permanent" – waters that typically (e.g., except due to drought) flow year-round or waters that have a continuous flow at least seasonally (e.g., typically three months). Justice Scalia emphasizes that relatively permanent waters do not include tributaries "*whose flow is 'coming and going at intervals...broken, fitful.'*" Therefore, "relatively permanent" waters do not include ephemeral tributaries which flow only in response to precipitation and intermittent streams which do not typically flow year-round or have continuous flow at least seasonally (USEPA & USACE 2008). However, CWA jurisdiction over these waters will be evaluated under the significant nexus standard described next.

The agencies will assert jurisdiction over the following types of waters when they have a significant nexus with a traditional navigable water: (1) non-navigable tributaries that are not relatively permanent, (2) wetlands adjacent to non-navigable tributaries that are not relatively permanent, and (3) wetlands adjacent to, but not directly abutting, a relatively permanent tributary (e.g., separated from it by uplands, a berm, dike or similar feature). The agencies will assess the flow characteristics and functions of the tributary itself, together with the functions performed by any wetlands adjacent to that tributary, to determine whether collectively they have a significant nexus with traditional navigable waters. A waterbody possesses the requisite nexus, and thus becomes jurisdictional, if the waterbody, either alone or in combination with similarly situated lands in the region, significantly affects the chemical, physical, and biological integrity of other covered waters more readily understood as 'navigable' (USEPA & USACE 2008). To assist in the interpretation of the *Rapanos* criteria, the USACE Jurisdictional Determination Form Instructional Guidebook was consulted (USACE & USEPA 2007).

3. RESULTS

3.1. FIELD SURVEYS

Dr. G. O. Graening conducted the most recent field assessment on October 24, 2024. Kristen Ahrens, M.S. conducted a field assessment on August 4, 2024. Sampling points were established at key locations and analyzed for the presence or absence of wetland (or for channels, ordinary high water mark) indicators; these points are documented in the Data Sheets in the Appendix. The results of the analyses of Study Area vegetation, soils, and hydrology are presented in the following sections, followed by the recommended jurisdictional determination.

Two previous aquatic resource delineations were performed:

Pinecrest Environmental Consulting, 2020. Biological Resources Assessment for 7408 – 7746 Highland Springs Road (APN 007-006-27, 007-006-34, 007-006-35, 007-006-40, 007-006-41, 007-057-01 & 007-057-02), Lake County, California. Completed December 9, 2020. 80 pp.

The biological survey was performed by botanist/biologist Dr. Christopher T. DiVittorio on May 25, 2020. This assessment mapped wetlands and channels in the Study Area. Data from this assessment was incorporated into our report.

AES-Montrose, Inc. 2022. Biological Memorandum for Highland Farms Cannabis Cultivation Project. 65 pp.

This biological assessment surveyed APNs 007-006-34, -35, and -40, as well as a small portion of APN 007-006-27. Additionally, a portion of the access road (1,057 linear feet) that connects Highland Springs Road to the Property entrance (located across APNs 007-043-04 and 007-043-01) was surveyed. The biological survey was completed on May 26, 2021. This assessment mapped wetlands and channels in portions of the Study Area. Data from this assessment was incorporated into our report.

3.2. Vegetation

All plants detected during the field survey of the Study Area are listed in Table 1 below.

General vegetation communities occurring in the Project Area and surrounding Property were mapped (see Exhibits). More specifically, the following terrestrial natural communities occur on the Property (as categorized by CDFW 2019):

- 11.000.000 Disturbed
 - 11.300.00 Disturbed Habitat
- 12.000.00 Urban/Developed
- 18.000.000 Agriculture
 - 18.310.00 Field/Pasture
- 37.000.00 Chaparral
 - 37.100.00 Chamise Chaparral [*Adenostoma fasciculatum*]
 - 37.400.00 Chaparral with Oak [*Quercus* spp.] as principal indicator
- 42.000.00 Non-native Grassland
 - 42.040.000 California Annual Grassland
- 45.000.00 Meadow and seeps not dominated by grasses
 - 45.110.00 Carex marsh, meadow
- 71.000.00 Oak Woodlands and Forests

Wet Meadow Community

Vegetation associated with the seasonal wetlands and wet meadow portion of the Study Area are primarily herbaceous and include species such as dried green algal mats (*Cladophora* spp.), common horsetail (*Equisetum arvense*), bog rush (*Juncus patens*), Western rush (*Juncus occidentalis*), greensheathed sedge (*Carex feta*), nut sedge (*Cyperus eragrostis*), rabbitsfoot grass (*Polypogon monspeliensis*), Italian ryegrass (*Festuca perennis*), Western verbena (*Verbena lasiostachys*), pennyroyal (*Mentha pulegium*), mugwort (*Artemisia douglasiana*), curly dock (*Rumex crispus*), Klamathweed (*Hypericum perforatum*), threenerve goldenrod (*Solidago velutina*), common gumweed (*Grindelia camporum*), common monkeyflower (*Mimulus guttatus*), Hyssop loosestrife (*Lythrum hyssopifolia*), skunk navarretia (*Navarretia mellita*), and bulge hedgenettle (*Stachys ajugoides*).

Mixed Annual Grassland Community

The grassland portion of the Study Area contains: hairgrass (*Aira caryophyllaea*), wild oatgrass (*Avena barbata*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), cheatgrass (*Bromus tectorum*), dogtail grass (*Cynosurus echinatus*), annual hairgrass (*Deschampsia danthonioides*), blue wildrye (*Elymus glaucus*), medusahead (*Elymus caput-medusae*), Zorro fescue (*Festuca myuros*), foxtail barley (*Hordeum murinum*), harvest brodiaea (*Brodiaea elegans*), creamcups (*Platystemon californicus*), mountain dandelion (*Agoseris heterophylla*), smooth cat's ear (*Hypochaeris glabra*), narrow leaved mule ears (*Wyethia angustifolia*), common yarrow (*Achillea millefolium*), hayfield tarweed (*Hemizonia congesta*), common madia (*Madia elegans*), Fremont's calycadenia (*Calycadenia fremontii*), blow wives (*Achyrachaena mollis*), bristly ox-tongue (*Helminthotheca echioides*), yellow star thistle (*Centaurea solstitialis*), smooth cat's ear (*Hypochaeris glabra*), spiny sowthistle (*Sonchus asper*), Italian thistle (*Carduus pycnocephalus*), bull thistle (*Cirsium vulgare*), lowland cudweed (*Gnaphalium palustre*), annual lupine (*Lupinus bicolor*), spring vetch (*Vicia sativa*), bird's foot trefoil (*Acmispon americanus*), bur clover (*Medicago polymorpha*), rose clover (*Trifolium hirtum*), goosefoot viola (*Viola purpurea*), slender popcorn flower (*Plagiobothrys tenellus*), common fiddleneck (*Amsinckia intermedia*), purple navarretia (*Navarretia pubescens*), shining peppergrass (*Lepidium nitidum*), turkey-mullein (*Croton setiger*), field bindweed (*Convolvulus arvensis*), farewell-to-spring (*Clarkia amoena*), blue dicks (*Dichelostemma capitata*), California poppy (*Eschscholzia californica*), field buttercup (*Ranunculus arvensis*), woolly mullein (*Verbascum thapsus*), black mustard (*Brassica nigra*), English plantain (*Plantago lanceolata*), common geranium (*Geranium molle*), wild radish (*Raphanus sativa*), Queen Anne's lace (*Daucus carota*), chickweed (*Stellaria media*), field parsley (*Torilis nodosa*), sheep sorrel (*Rumex acetocella*), lamb's quarters (*Chenopodium album*), contorted sun cup (*Camissonia contorta*), and crane's bill filaree (*Erodium botrys*).

Table 1. List of All Plants Identified During the Field Surveys

Scientific Name	Common Name
<i>Acer macrophyllum</i>	big leaf maple
<i>Achillea millefolium</i>	yarrow
<i>Achyrachaena mollis</i>	Blow-wives
<i>Acmispon americanus</i>	American bird's-foot trefoil
<i>Acmispon parviflorus</i>	Hill lotus
<i>Acmispon wrangelianus</i>	Chilean trefoil
<i>Adenostoma fasciculatum</i>	Chamise
<i>Adiantum jordanii</i>	maidenhair fern
<i>Aesculus californica</i>	California buckeye
<i>Agoseris grandiflora</i>	Mountain dandelion
<i>Agoseris heterophylla</i> var. <i>heterophylla</i>	Annual agoseris
<i>Aira caryophylla</i>	silver hairgrass
<i>Allium</i> sp.	wild onion
<i>Amsinckia intermedia</i>	common fiddleneck
<i>Aphanes occidentalis</i>	Western lady's mantle
<i>Arbutus menziesii</i>	Madrone
<i>Arctostaphylos manzanita</i> ssp. <i>manzanita</i>	common manzanita
<i>Arctostaphylos stanfordiana</i> ssp. <i>stanfordiana</i>	Stanford manzanita
<i>Arctostaphylos viscida</i>	whiteleaf manzanita
<i>Artemisia douglasiana</i>	California mugwort
<i>Asclepias eriocarpa</i>	woollypod milkweed
<i>Asclepias eriophylla</i>	Indian milkweed
<i>Athysanus pusillus</i>	Common sandweed
<i>Avena barbata</i>	Slender wild oats
<i>Baccharis pilularis</i>	Coyote brush
<i>Barbarea orthoceras</i>	American wintercress
<i>Brassica nigra</i>	black mustard
<i>Brodiaea elegans</i>	elegant cluster-lily
<i>Bromus diandrus</i>	Ripgut brome
<i>Bromus hordeaceus</i>	Soft chess
<i>Bromus tectorum</i>	cheatgrass
<i>Calandrinia menziesii</i>	Red maids
<i>Calochortus amabilis</i>	Golden fairy lantern
<i>Calycadenia fremontii</i>	Fremont's western rosinweed
<i>Calystegia subacaulis</i>	Hillside morning glory
<i>Camissonia contorta</i>	vening primrose
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Carex densa</i>	Dense sedge
<i>Carex feta</i>	green-sheathed sedge
<i>Castilleja attenuata</i>	Valley tassels
<i>Ceanothus cuneatus</i> var. <i>cuneatus</i>	Buckbrush
<i>Ceanothus foliosus</i> var. <i>foliosus</i>	Wavyleaf ceanothus

Scientific Name	Common Name
<i>Ceanothus integerrimus</i>	deer brush
<i>Centaurea melitensis</i>	Tocalote
<i>Centaurea solstitialis</i>	Yellow star thistle
<i>Cerastium glomeratum</i>	Sticky mouse-ear chickweed
<i>Cercis occidentalis</i>	western red bud
<i>Cercocarpus betuloides</i>	Mountain mahogany
<i>Chenopodium album</i>	goosefoot
<i>Chlorogalum pomeridianum</i>	Soap plant
<i>Cirsium vulgare</i>	bull thistle
<i>Cladophora spp.</i>	filamentous green algae
<i>Clarkia amoena</i>	Farewell-to-spring
<i>Clarkia purpurea var. quadrivulnera</i>	Purple clarkia
<i>Convolvulus arvensis</i>	Bind weed
<i>Crassula sp.</i>	Crassula
<i>Croton setiger</i>	Turkey mullein
<i>Cynoglossum grande</i>	Western houndstongue
<i>Cynosurus echinatus</i>	Dog tail
<i>Cyperus eragrostis</i>	nutsedge
<i>Daucus carota</i>	wild carrot
<i>Daucus pusillus</i>	American carrot
<i>Deschampsia danthonioides</i>	annual hairgrass
<i>Dichelostemma capitatum</i>	Blue dicks
<i>Draba verna</i>	Spring Draba
<i>Elymus caput-medusae</i>	Medusa head
<i>Elymus elymoides</i>	squirreltail grass
<i>Elymus glaucus</i>	Blue wildrye
<i>Equisetum arvense</i>	field horsetail
<i>Eriodictyon californicum</i>	Yerba Santa
<i>Eriogonum nudum</i>	naked buckwheat
<i>Eriophyllum lanatum</i>	Common woolly sunflower
<i>Erodium botrys</i>	Big heron bill
<i>Erodium cicutarium</i>	Coastal heron's bill
<i>Erythronium californicum</i>	California fawn lily
<i>Eschscholzia californica</i>	California poppy
<i>Festuca myuros</i>	rat tail fescue
<i>Festuca perennis</i>	Italian ryegrass
<i>Fraxinus latifolia</i>	Oregon ash
<i>Galium californicum</i>	California bedstraw
<i>Galium parisiense</i>	Wall bedstraw
<i>Galium porrigens</i>	Climbing bedstraw
<i>Geranium dissectum</i>	Cutleaf geranium
<i>Geranium molle</i>	dove's-foot crane's-bill
<i>Gnaphalium palustre</i>	Western marsh cudweed

Scientific Name	Common Name
<i>Grindelia camporum</i>	Great Valley gumplant
<i>Helminthotheca echioides</i>	bristly oxtongue
<i>Hemizonia congesta</i>	hayfield tarweed
<i>Hesperolinon spergulinum</i>	Slender dwarf flax
<i>Heteromeles arbutifolia</i>	Toyon
<i>Hordeum brachyantherum</i>	Meadow barley
<i>Hordeum marinum ssp. gussoneanum</i>	Mediterranean barley
<i>Hypericum concinnum</i>	Gold wire
<i>Hypericum perforatum</i>	St John's wort
<i>Hypochaeris glabra</i>	cat's ears
<i>Hypochaeris radicata</i>	Rough cat's ears
<i>Juncus bufonius</i>	Toad rush
<i>Juncus effusus</i>	Bog rush
<i>Juncus occidentalis</i>	western rush
<i>Juncus patens</i>	Common rush
<i>Juncus tenuis</i>	Slender rush
<i>Lactuca serriola</i>	Prickly lettuce
<i>Lasthenia gracilis</i>	Needle goldfields
<i>Lathyrus angulatus</i>	Angled pea vine
<i>Leontodon saxatilis ssp. saxatilis</i>	Hawkbit
<i>Lepidium nitidum</i>	Shining peppergrass
<i>Leptosiphon bicolor</i>	True baby stars
<i>Limnanthes douglasii ssp. nivea</i>	Meadow foam
<i>Logfia gallica</i>	Narrowleaf cottonrose
<i>Lomatium dasycarpum</i>	Hog fennel
<i>Lonicera interrupta</i>	Chaparral honeysuckle
<i>Lupinus bicolor</i>	Miniature lupine
<i>Lythrum hyssopifolia</i>	hyssop loosestrife
<i>Madia elegans</i>	tarweed
<i>Madia exigua</i>	Little tarweed
<i>Medicago polymorpha</i>	burr medic
<i>Mentha pulegium</i>	Pennyroyal
<i>Micropus californicus</i>	Q-tips
<i>Microseris douglasii ssp. douglasii</i>	Douglas' microseris
<i>Mimulus guttatus</i>	seep monkeyflower
<i>Monardella odoratissima</i>	Mountain pennyroyal
<i>Navarretia intertexta</i>	Needleleaf navarretia
<i>Navarretia mellita</i>	honeyscented pincushionplant
<i>Navarretia pubescens</i>	downy pincushionplant
<i>Nemophila pedunculata</i>	Meadow nemophila
<i>Notholithocarpus densiflorus</i>	tanoak
<i>Penstemon heterophyllus</i>	Foothill penstemon
<i>Pentagramma triangularis</i>	Goldenback fern

Scientific Name	Common Name
<i>Phacelia imbricata</i>	imbricate phacelia
<i>Phoradendron leucarpum</i> ssp. <i>tomentosum</i>	Mistletoe
<i>Pickeringia montana</i>	Montana chaparral pea
<i>Pinus attenuata</i>	Knobcone pine
<i>Pinus ponderosa</i>	ponderosa pine
<i>Pinus sabiniana</i>	gray pine
<i>Plagiobothrys bracteatus</i>	Bracted allocarya
<i>Plagiobothrys nothofulvus</i>	Popcorn flower
<i>Plagiobothrys tenellus</i>	Popcorn flower
<i>Plantago erecta</i>	Hill plantain
<i>Plantago lanceolata</i>	narrow leaf plantain
<i>Platystemon californicus</i>	cream cups
<i>Polypogon monspeliensis</i>	rabbitsfoot grass
<i>Primula hendersonii</i>	Shooting star
<i>Psilocarphus tenellus</i>	Slender woolly heads
<i>Pteridium aquilinum</i>	sword fern
<i>Quercus berberidifolia</i>	Inland scrub oak
<i>Quercus chrysolepis</i>	Canyon live oak
<i>Quercus dumosa</i>	Nuttall's scrub oak
<i>Quercus durata</i>	leather oak
<i>Quercus kelloggii</i>	blue oak
<i>Quercus wislizeni</i>	interior live oak
<i>Ranunculus arvensis</i>	field buttercup
<i>Raphanus sativa</i>	wild radish
<i>Rhamnus ilicifolia</i>	hollyleaf redberry
<i>Rhus aromatica</i>	Fragrant sumac
<i>Rigiopappus leptocladus</i>	Gold wire
<i>Rumex acetocella</i>	red sorrel
<i>Rumex crispus</i>	Curly dock
<i>Salix babylonica</i>	Weeping willow
<i>Sanicula bipinnatifida</i>	Purple sanicle
<i>Sanicula crassicaulis</i>	Pacific sanicle
<i>Sidalcea diploscypha</i>	Fringed checkerbloom
<i>Sidalcea</i> sp.	Checkerbloom
<i>Solidago velutina</i>	threenerve goldenrod
<i>Sonchus asper</i>	spiniy sowthistle
<i>Stachys ajugoides</i>	Hedge nettle
<i>Stellaria media</i>	chickweed
<i>Symphyotrichum</i> sp.	Aster
<i>Thysanocarpus curvipes</i>	Fringe pod
<i>Torilis nodosa</i>	knotted hedgeparsley
<i>Toxicodendron diversilobium</i>	poison oak
<i>Trichostema laxum</i>	turpentine weed

Scientific Name	Common Name
<i>Trifolium albopurpureum</i>	Indian clover
<i>Trifolium depauperatum</i> var. <i>depauperatum</i>	Dwarf sack clover
<i>Trifolium dichotomum</i>	Branched Indian clover
<i>Trifolium hirtum</i>	rose clover
<i>Trifolium willdenovii</i>	Tomcat clover
<i>Tropidocarpum gracile</i>	Slender tropidocarpum
<i>Umbellularia californica</i>	Bay tree
<i>Uropappus lindleyi</i>	Silver puffs
<i>Verbascum thapsus</i>	common mullein
<i>Verbena lasiostachys</i>	Common verbena
<i>Veronica peregrina</i>	Speedwell
<i>Vicia sativa</i>	vetch
<i>Viola purpurea</i>	Goosefoot violet
<i>Wyethia angustifolia</i>	narrowleaf mule's ears
<i>Wyethia glabra</i>	Smooth mule's ears

3.3. Soil Types

Digital soil survey maps from NRCS' SSURGO 2.2 Database were consulted for this study (NRCS 2017), and mapped soil units occurring within the Study Area are as follows and mapped in the Exhibits:

- 168: Maymen-Etsel-Snook complex, 15 to 30 percent slopes, not hydric
- 169: Maymen-Etsel-Snook complex, 30 to 75 percent slopes, not hydric
- 173: Maymen-Hopland-Mayacama association, 20 to 60 percent slopes, not hydric
- 171: Maymen-Hopland-Etsel association, 15 to 50 percent slopes, not hydric

No mapped soil units within the Study Area were found to be designated "hydric" by NRCS. NRCS provides this disclaimer: "*Lists of hydric soils along with soil survey maps are good off-site ancillary tools to assist in wetland determinations, but they are not a substitute for observations made during on-site investigations.*" (<http://soils.usda.gov/use/hydric/overview.html>).

3.4. Hydrology

The general direction of surface runoff in the Study Area is to the south via unnamed ephemeral and intermittent channels that are tributary to Highland Creek (see Exhibits). Drainage from this region flows to Highland Springs reservoir. According to the FEMA Flood Hazard Boundary Map of the region, the property is not located within a flood zone (see Exhibits). Because wetlands often occur within floodplains, these FEMA Flood Hazard Boundary Maps may assist the delineator in determining if wetland hydrology exists within the Study Area.

There is one intermittent channel (Class II watercourse) within the Study Area that is tributary to Highland Creek; this channel contains some hydrophytic (wetland) vegetation. Upstream, the channel transitions to multiple ephemeral channels (Class III watercourses). Upstream of the ephemeral channels, they transition to vegetated swales that originates in dense chaparral that prevents significant sediment transport and channel formation. Several of the ephemeral channels that flow across the grassland portion of the Study Area are discontinuous with patches of potential wetlands. Potential wetlands form where the slope of the terrain is not steep enough to facilitate downslope sediment transport and initiate channel formation. In some places wetland vegetation and channels capable of sediment transport exist together.

3.5. National Wetlands Inventory

The USFWS National Wetland Inventory (NWI) digital maps of the Study Area were also consulted. Regional mapped wetland features are shown in the Exhibits, where illustrative. Some NWI riverine features were mapped within the Study Area; these features correspond to intermittent channels mapped as blue line streams on USGS topographic maps (see Exhibits). The USFWS National Wetland Inventory did not map any wetlands in the Study Area. Note, however, that this database was not used to conclude that a wetland was present or absent in the Study Area.

3.6. DELINEATION RESULTS AND JURISDICTIONAL RECOMMENDATIONS

All hydrologic features were identified and mapped within the Study Area and subjected to the delineation criteria set forth by each regulatory agency. These features are summarized in the following tables and mapped in the Exhibits. This map has not been verified by USACE or SWRCB, and thus represents an unofficial demarcation of the potential limits of jurisdiction. Various survey points were established for the delineation of this Study Area, and corresponding data sheets can be found in the Appendix.

The purpose of this delineation was to confirm or modify the previously delineated wetlands and channels on the Property by Pinecrest Environmental Consulting (2020) and AES-Montrose, Inc. (2022). This delineation confirms that the previously delineated wetlands and channels are correctly delineated. However, federal jurisdiction and State jurisdiction differ, as explained in the following sections.

3.6.1. Water Resources Potentially Subject to Federal Jurisdiction

All identified hydrologic features were subjected to the 3-parameter test, the Hydrology Criterion (Scalia Test), and the Significant Nexus (Kennedy) Test. Based upon these criteria, one feature within the Study Area was determined to be potentially subject to USACE jurisdiction:

- An unnamed intermittent channel (Int1)

This channel Int1 flows seasonally and meets the criterion of “relatively permanent flow.” Channel Int1 exhibits the following channel indicators: bedrock or cobble bottom; destruction of vegetation; drift lines. Channel Int1 has an OHWM that varies in width from 6 to 8 feet, with an average width of 8 feet. Within the Study Area, there is 969 linear feet of this channel.

No other channels in the Study Area meet the criterion of “relatively permanent flow;” all of the other channels are ephemeral and some of them lack channel indicators and have discontinuous sections that dissipate into upland grasslands or isolated wetlands. There are no wetlands adjacent to channels with relatively permanent flow. All wetlands are either isolated or associated with ephemeral channels. There are no vernal pools in the Study Area.

POTENTIALLY-JURISDICTIONAL WATERS OF THE UNITED STATES						
Aquatic Resources Classification			Aquatic Resource Size			
Resource Label	Cowardin	Location (Lat/Long)	sq. ft.	acre	linear feet	width
Channels						
Int1	R4SB1	38.9408, -122.9285	7752	0.178	969	8
		Total Channels	7752	0.178		
Wetlands						
n/a	n/a		0	0.000		
		Total Wetlands	0	0.000		

3.6.2. Upland Features Not Expected To Be Subject to Federal Regulation

All other drainage features present are understood not to be jurisdictional (see Exhibits). They all fail the Scalia Test for relatively permanent flow and most fail the connectivity criterion. They all fall under the category described by USEPA & USACE (2008) as:

“Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow) are generally not waters of the United States because they are not

tributaries or they do not have a significant nexus to downstream traditional navigable waters. In addition, ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water are generally not waters of the United States because they are not tributaries or they do not have a significant nexus to downstream traditional navigable waters."

3.6.3. Water Resources Potentially Subject to State Jurisdiction

All identified hydrologic features were subjected to the 3-parameter test, the broad (and vague) definition of waters of the State as currently enforced by SWRCB, and the "stream zone" as currently enforced by CDFW. Based upon these criteria, the following features within the Study Area were determined to be potentially subject to State jurisdiction:

- 12 unnamed ephemeral channels (Eph1 through Eph12)
- 1 unnamed intermittent channel (Int1)
- 7 seasonal wetlands (wet meadows) (SW1 through SW7)
- 1 emergent wetland (reed marsh) SW8

There are no riparian habitats within the Study Area. Riparian habitats do occur downstream of the Study Area in Highland Creek.

POTENTIALLY-JURISDICTIONAL WATERS OF THE STATE						
Aquatic Resources Classification			Aquatic Resource Size			
Resource Label	Cowardin	Location (Lat/Long)	sq. ft.	acre	linear feet	width
Channels						
Eph1	R5SB	38.9434, -122.9327	318	0.007	159	2
Eph2	R5SB	38.9443, -122.9308	2040	0.047	510	4
Eph3	R5SB	38.9418, -122.9268	1700	0.039	425	4
Eph4	R5SB	38.9419, -122.9315	258	0.006	129	2
Eph5	R5SB	38.9424, -122.9300	5424	0.125	904	6
Eph6	R5SB	38.9431, -122.9293	174	0.004	87	2
Eph7	R5SB	38.9436, -122.9277	238	0.005	119	2
Eph8	R5SB	38.9432, -122.9272	568	0.013	284	2
Eph9	R5SB	38.9421, -122.9288	1836	0.042	306	6
Eph10	R5SB	38.9416, -122.9278	1124	0.026	562	2
Eph11	R5SB	38.9403, -122.9287	566	0.013	283	2
Eph12	R5SB	38.9400, -122.9259	2040	0.047	510	4
Int1	R4SB1	38.9408, -122.9285	7752	0.178	969	8
Total Channels			24038	0.552		
Wetlands						
SW1	PEM2	38.9437, -122.9317	37432	0.859		
SW2	PEM2	38.9451, -122.9312	6303	0.145		
SW3	PEM2	38.9435, -122.9310	8371	0.192		
SW4	PEM2	38.9435, -122.9292	3924	0.090		
SW5	PEM2	38.9424, -122.9291	9134	0.210		
SW6	PEM2	38.9435, -122.9280	1649	0.038		
SW7	PEM2	38.9427, -122.9281	8029	0.184		
SW8	PEM2	38.9418, -122.9268	1864	0.043		
Total Wetlands			76706	1.761		

4. IMPACT ANALYSIS

Direct impacts to jurisdictional water resources could occur during construction by modification or destruction of stream banks or riparian vegetation or the filling of wetlands or channels. However, there are no water resources within the Project Areas. This is because these resources (wetlands and channels) were delineated and the Project Areas were redesigned to avoid them with setbacks. The setbacks conformed to the State Water Resources Control Board's Cannabis General Order: 50 feet from ephemeral channels (Class III watercourses), 100 feet from wetlands, and 100 feet from intermittent channels (Class II watercourses). Thus, no direct impacts to jurisdictional water resources will occur from project implementation.

Potential indirect impacts to water resources could occur during construction. During construction, surface water quality has the potential to be degraded from storm water transport of sediment from disturbed soils or by accidental release of hazardous materials or petroleum products from sources such as heavy equipment servicing or refueling. This is a potentially significant impact. However, the landowner and its designated general contractor must enroll under the State Water Quality Control Board's Construction General Permit prior to the initiation of construction. In conjunction with enrollment under this Permit, a Storm Water Pollution Prevention Plan, Erosion Control Plan, and a Hazardous Materials Management/Spill Response Plan must be created and implemented during construction to avoid or minimize the potential for erosion, sedimentation, or accidental release of hazardous materials. Implementation of these measures mandated by law would reduce potential construction-related impacts to water quality to a less-than-significant level.

Potential adverse impacts to water resources could occur during operation of cannabis cultivation facilities by discharge of sediment or other pollutants (fertilizers, pesticides, human waste, etc.) into receiving waterbodies. However, the project proponent has filed a Notice of Intent and enrolled in the Cannabis General Order. Compliance with this Order will ensure that cultivation operations will not significantly impact water resources by using a combination of Best Management Practices (BMPs), buffer zones, sediment and erosion controls, site management plans, inspections and reporting, and regulatory oversight.

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6. QUALIFICATIONS OF SURVEYORS AND REPORT PREPARERS

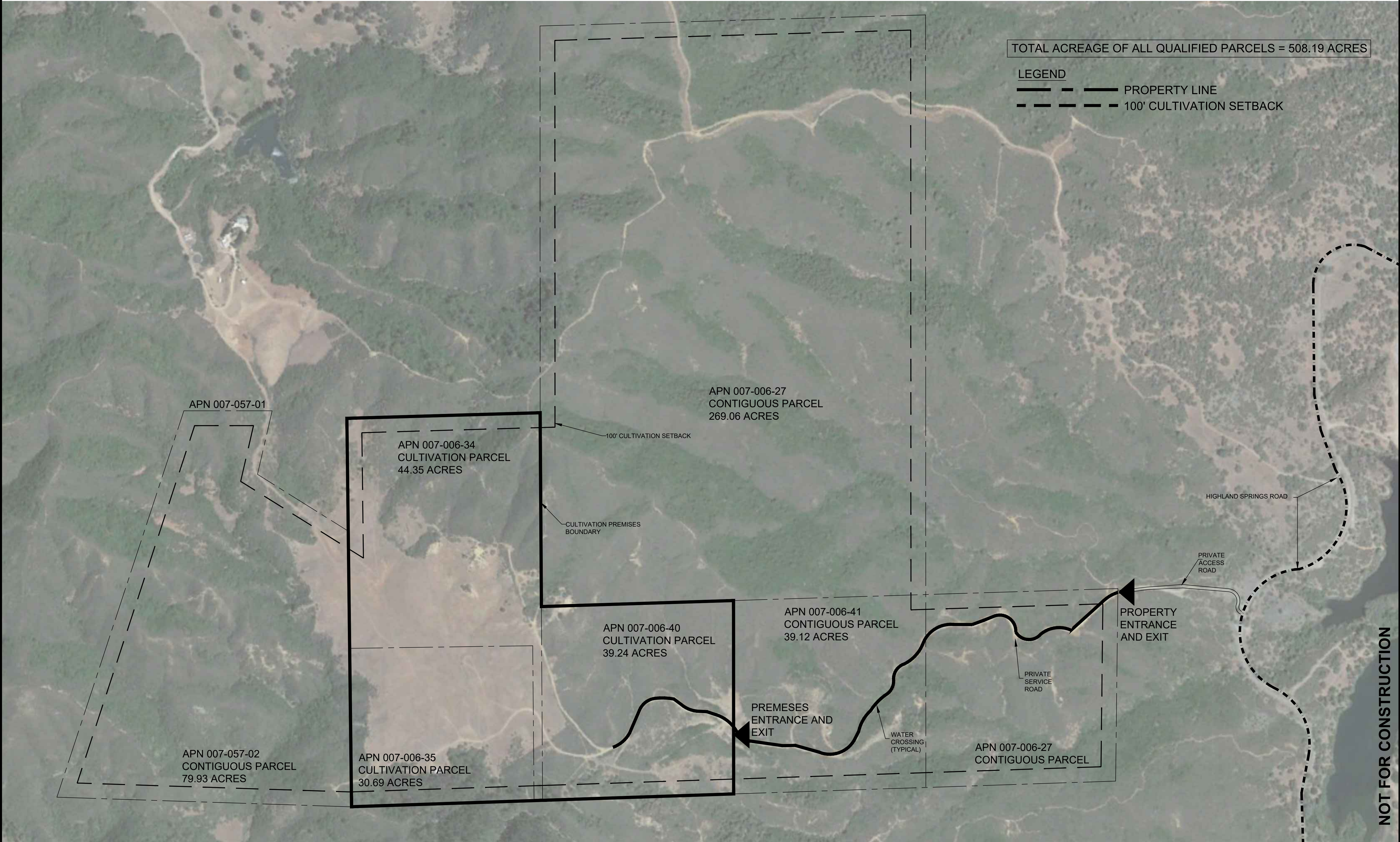
G.O. GRAENING, Ph.D., M.S.E.

G. O. Graening holds a Ph.D. in Biological Sciences and a Master of Science in Biological Engineering, and is a certified professional in storm water quality (EnviroCert Int'l). Dr. Graening has 30 years of experience in environmental assessment and research, including the performance of numerous wetland delineations and aquatic restoration projects. Dr. Graening also serves as an adjunct professor of biology at California State University Sacramento and is an active researcher in the area of conservation biology and groundwater ecology.

KRISTEN AHRENS, M.S.

Kristen Ahrens holds a B.S. and M.S. in Biological Sciences. Ms. Ahrens has experience performing delineations and sensitive plant and animal surveys with expertise in mammalian studies and is currently a part-time instructor at California State University at Sacramento in the Department of Biological Sciences. Ms. Ahrens has over 15 years of experience in environmental assessment, research, and biology teaching with employers that include Brusca Associates, Inc., California Department of Fish and Wildlife, and U.S. Fish and Wildlife.

EXHIBITS



TOTAL ACREAGE OF ALL QUALIFIED PARCELS = 508.19 ACRES

LEGEND
——— PROPERTY LINE
- - - 100' CULTIVATION SETBACK

APN 007-057-01

APN 007-006-34
CULTIVATION PARCEL
44.35 ACRES

APN 007-006-27
CONTIGUOUS PARCEL
269.06 ACRES

CULTIVATION PREMISES
BOUNDARY

APN 007-006-40
CULTIVATION PARCEL
39.24 ACRES

APN 007-006-41
CONTIGUOUS PARCEL
39.12 ACRES

HIGHLAND SPRINGS ROAD

PRIVATE
ACCESS
ROAD

PROPERTY
ENTRANCE
AND EXIT

PRIVATE
SERVICE
ROAD

PREMESES
ENTRANCE AND
EXIT

WATER
CROSSING
(TYPICAL)

APN 007-006-27
CONTIGUOUS PARCEL

APN 007-057-02
CONTIGUOUS PARCEL
79.93 ACRES

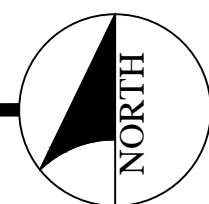
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CULTIVATION PARCEL
30.69 ACRES

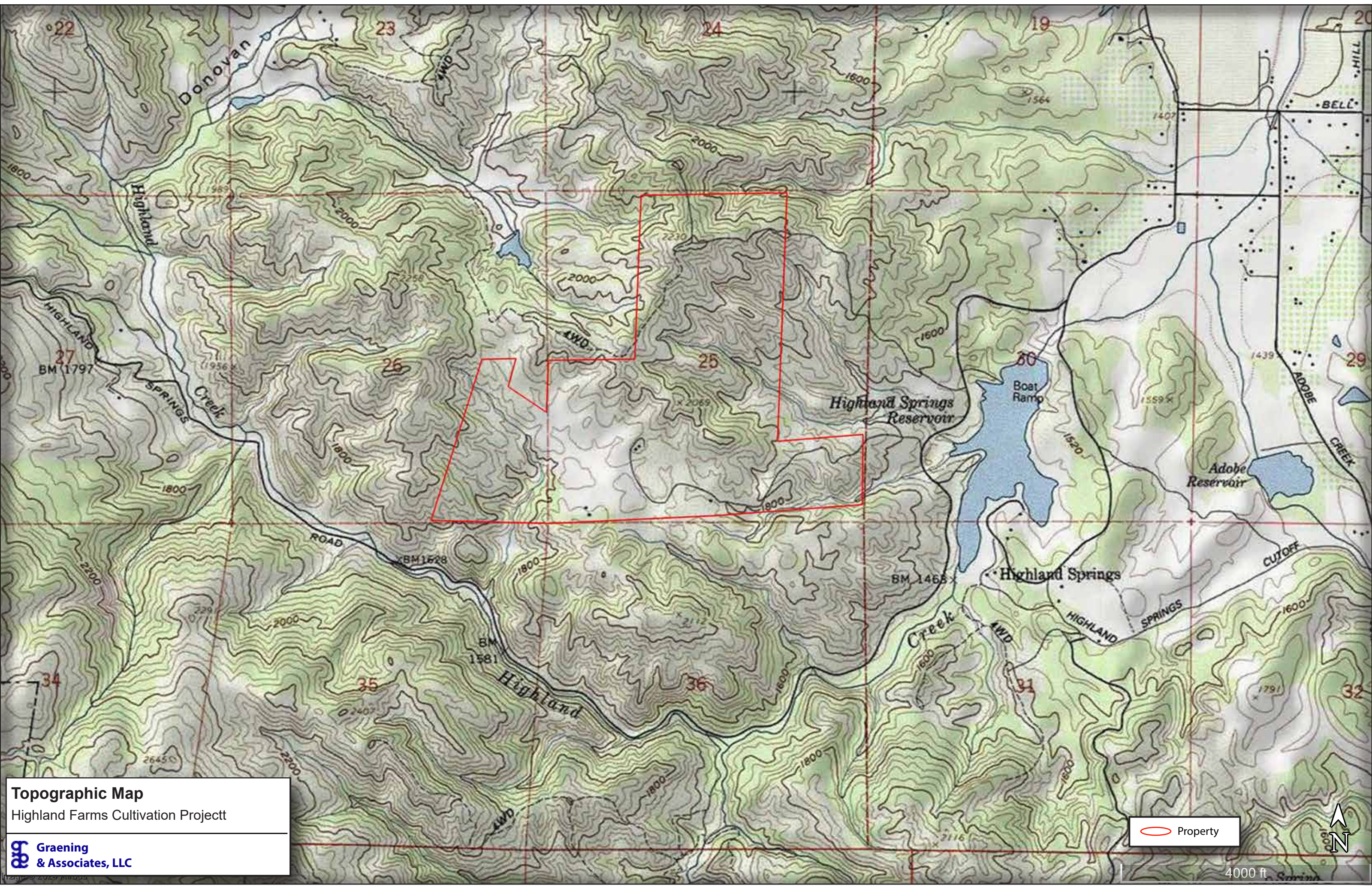
NOT FOR CONSTRUCTION

1 EXISTING AREA SITE PLAN

1" = 300'

0 300' 600'





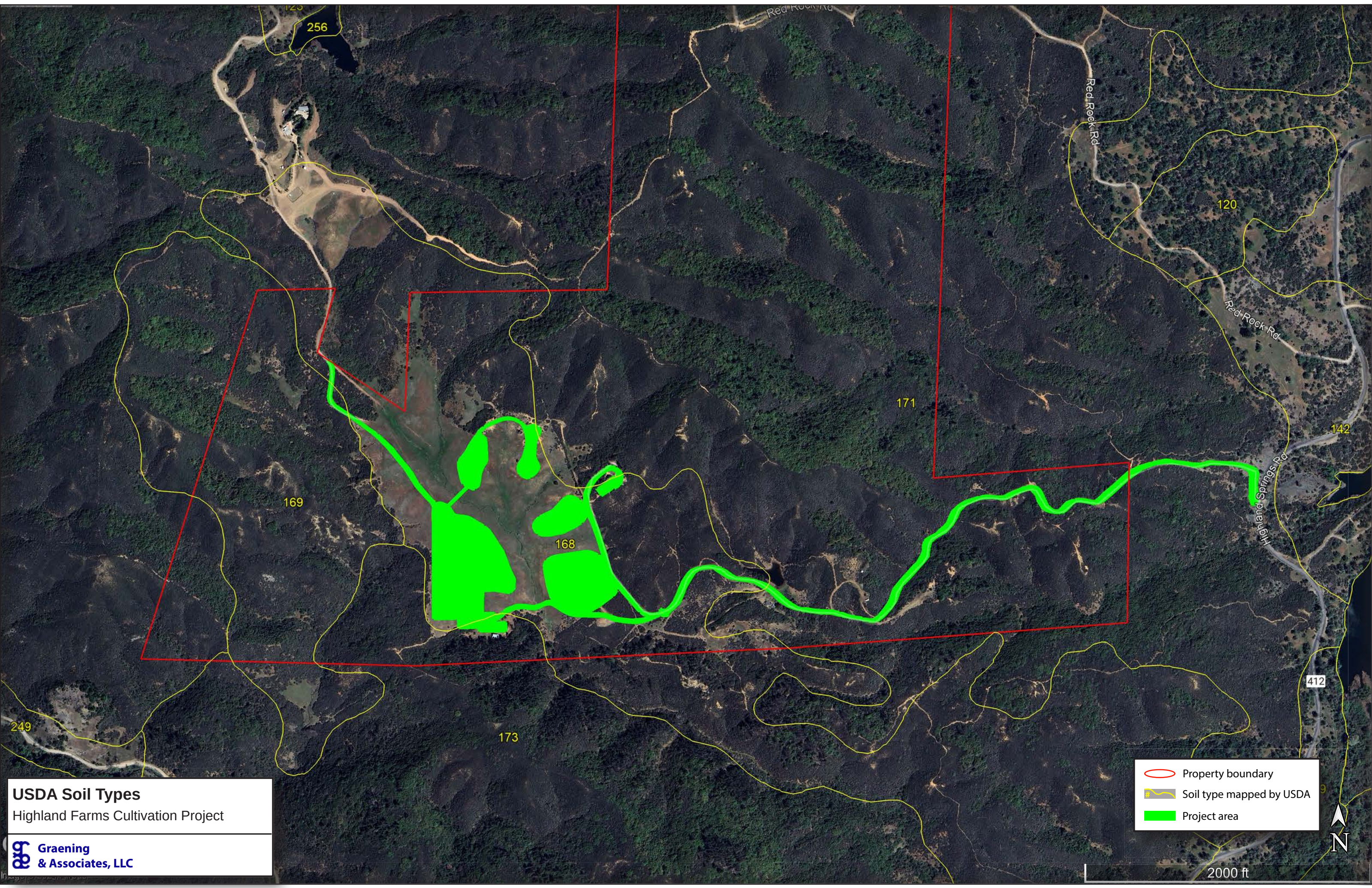
Topographic Map
Highland Farms Cultivation Projectt

 **Graening
& Associates, LLC**

 Property



4000 ft



USDA Soil Types

Highland Farms Cultivation Project

 **Graening
& Associates, LLC**

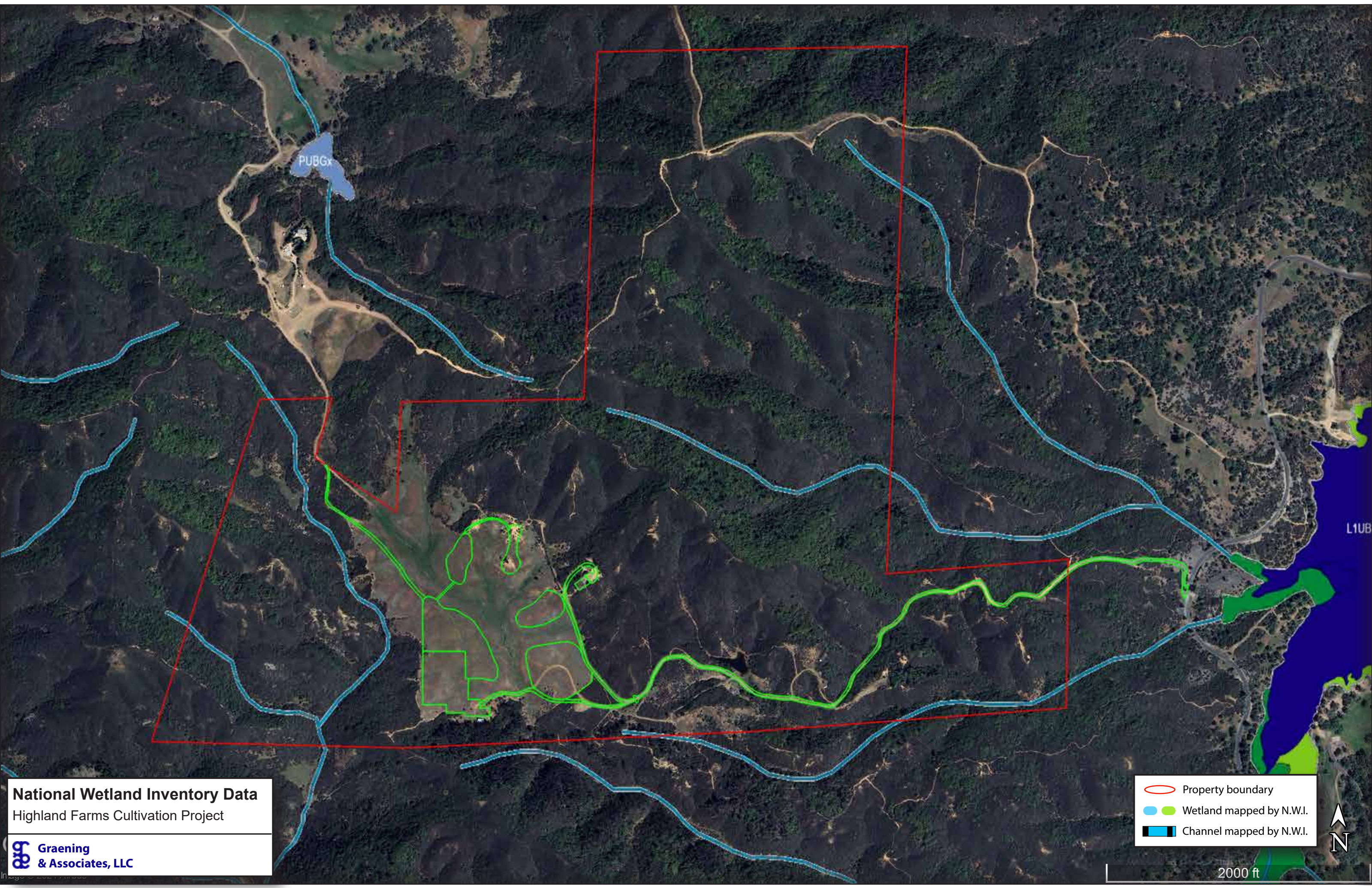
 Property boundary

 Soil type mapped by USDA

 Project area



2000 ft



National Wetland Inventory Data
Highland Farms Cultivation Project

 **Graening & Associates, LLC**

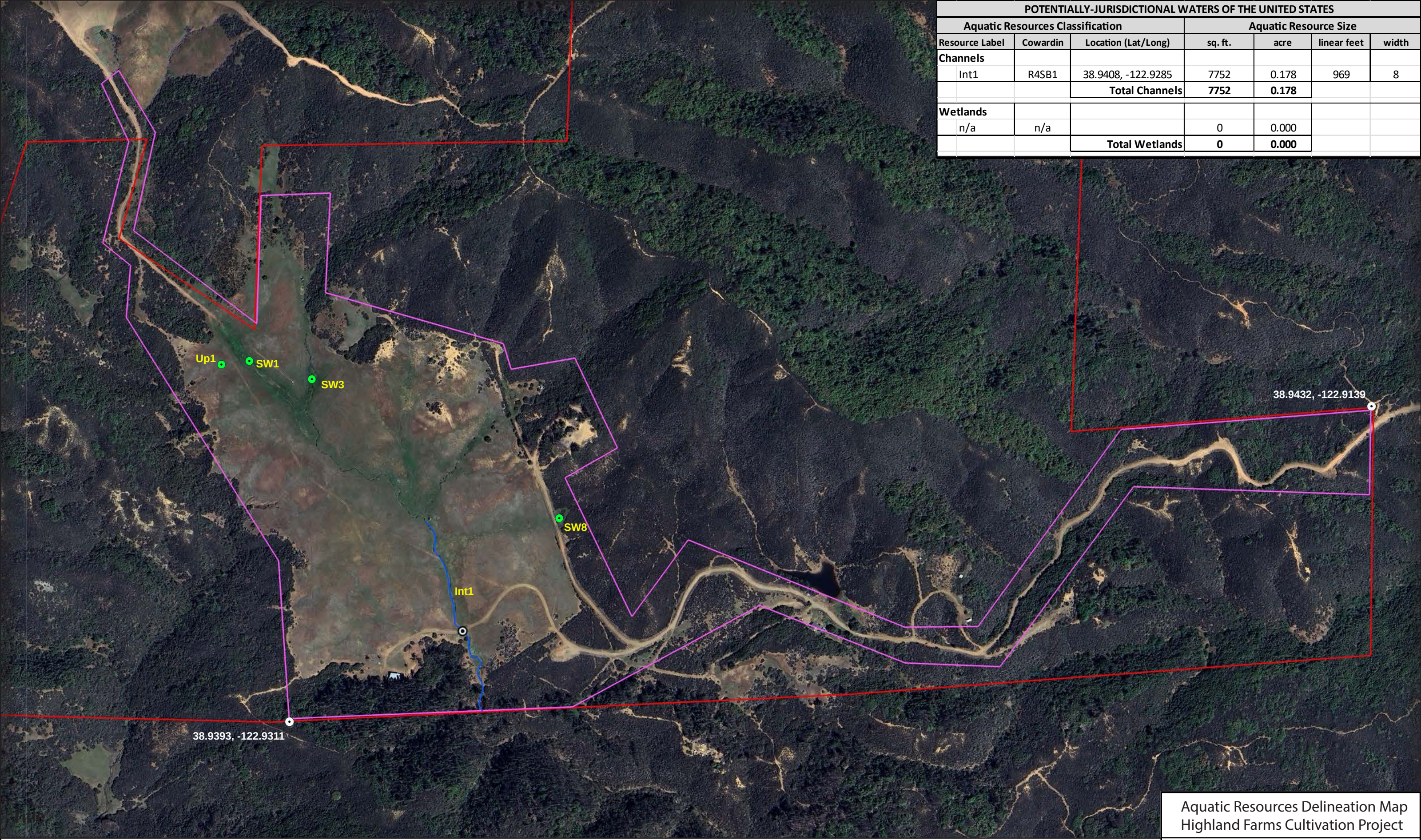
 Property boundary

  Wetland mapped by N.W.I.

  Channel mapped by N.W.I.



2000 ft



POTENTIALLY-JURISDICTIONAL WATERS OF THE UNITED STATES						
Aquatic Resources Classification			Aquatic Resource Size			
Resource Label	Cowardin	Location (Lat/Long)	sq. ft.	acre	linear feet	width
Channels						
Int1	R4SB1	38.9408, -122.9285	7752	0.178	969	8
		Total Channels	7752	0.178		
Wetlands						
n/a	n/a		0	0.000		
		Total Wetlands	0	0.000		

Study Area

Parcel boundaries

Pipe culvert

Intermittent (Class II) Watercourse

Text1

Feature label

Data point

N

0

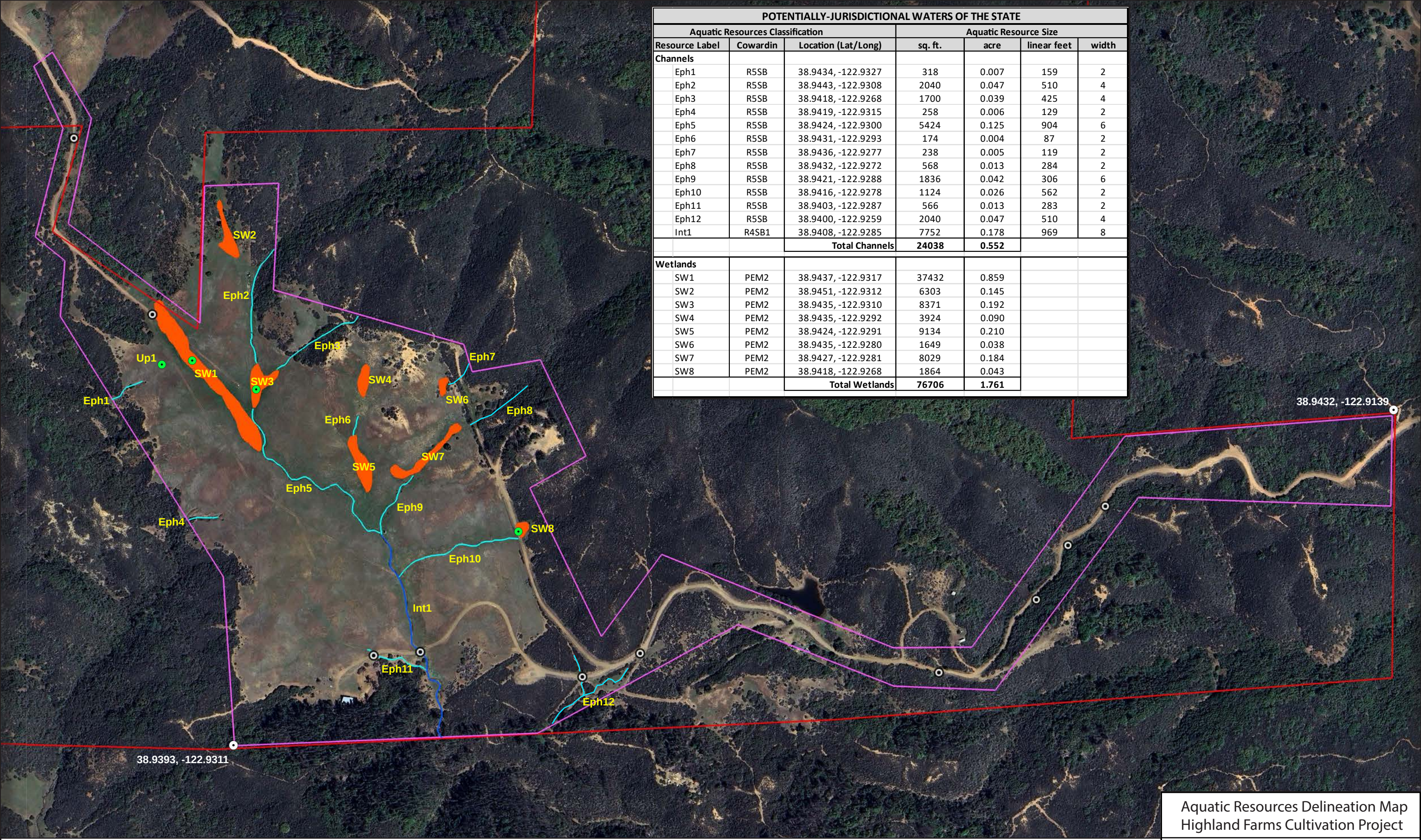
250

500 Feet

Aquatic Resources Delineation Map
Highland Farms Cultivation Project

Delineator: Dr. G.O. Graening, Oct. 31, 2024

Graening
& Associates



POTENTIALLY-JURISDICTIONAL WATERS OF THE STATE						
Aquatic Resources Classification			Aquatic Resource Size			
Resource Label	Cowardin	Location (Lat/Long)	sq. ft.	acre	linear feet	width
Channels						
Eph1	R5SB	38.9434, -122.9327	318	0.007	159	2
Eph2	R5SB	38.9443, -122.9308	2040	0.047	510	4
Eph3	R5SB	38.9418, -122.9268	1700	0.039	425	4
Eph4	R5SB	38.9419, -122.9315	258	0.006	129	2
Eph5	R5SB	38.9424, -122.9300	5424	0.125	904	6
Eph6	R5SB	38.9431, -122.9293	174	0.004	87	2
Eph7	R5SB	38.9436, -122.9277	238	0.005	119	2
Eph8	R5SB	38.9432, -122.9272	568	0.013	284	2
Eph9	R5SB	38.9421, -122.9288	1836	0.042	306	6
Eph10	R5SB	38.9416, -122.9278	1124	0.026	562	2
Eph11	R5SB	38.9403, -122.9287	566	0.013	283	2
Eph12	R5SB	38.9400, -122.9259	2040	0.047	510	4
Int1	R4SB1	38.9408, -122.9285	7752	0.178	969	8
Total Channels			24038	0.552		
Wetlands						
SW1	PEM2	38.9437, -122.9317	37432	0.859		
SW2	PEM2	38.9451, -122.9312	6303	0.145		
SW3	PEM2	38.9435, -122.9310	8371	0.192		
SW4	PEM2	38.9435, -122.9292	3924	0.090		
SW5	PEM2	38.9424, -122.9291	9134	0.210		
SW6	PEM2	38.9435, -122.9280	1649	0.038		
SW7	PEM2	38.9427, -122.9281	8029	0.184		
SW8	PEM2	38.9418, -122.9268	1864	0.043		
Total Wetlands			76706	1.761		

Study Area

Parcel boundaries

Ephemeral (Class III) Watercourse

Intermittent (Class II) Watercourse

Wetland

Pipe culvert

Text1

Feature Label

Data point

N

0

250

500 Feet

Aquatic Resources Delineation Map

Highland Farms Cultivation Project

Delineator: Dr. G.O. Graening, Oct. 31, 2024

Graening & Associates

APPENDIX – WETLAND DELINEATION FIELD DATA SHEETS

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

Project/Site: Highland Farm Cultivation Project Areas City/County: Lake Sampling Date: Oct. 24, 2024
Applicant/Owner: Autumn Karcey State: CA Sampling Point: UP1
Investigator(s): Dr. Geo Graening Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): Coastal Range Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: 168: Maymen-Etsel-Snook complex, 15 to 30 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. <u>n/a</u>				
2. _____				
3. _____				
4. _____				
				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>n/a</u>				
2. _____				
3. _____				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is $\leq 3.0^1$ ___ 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.
4. _____				
5. _____				
= Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Avena barbata</u>	<u>30</u>	<u>Yes</u>	<u>UPL</u>	Hydrophytic Vegetation Present? Yes _____ No ☒
2. <u>Bromus hordeaceus</u>	<u>30</u>	<u>Yes</u>	<u>UPL</u>	
3. <u>Centaurea solstitialis</u>	<u>5</u>	<u>No</u>	<u>NI</u>	
4. <u>Aira caryophyllea</u>	<u>5</u>		<u>FACU</u>	
5. <u>Croton setiger</u>	<u>5</u>		<u>UPL</u>	
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
90 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. <u>n/a</u>				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

SOIL

Sampling Point: UP1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	7.5YR 5/4							sandy loam
6+								hardpan

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): 6

Hydric Soil Present? Yes _____ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- | |
|---|
| ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| ☐ Drainage Patterns (B10) |
| ☐ Dry-Season Water Table (C2) |
| ☐ Saturation Visible on Aerial Imagery (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? Yes _____ No _____ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

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

Remarks:

poorly drained area

Project/Site: Highland Farm Cultivation Project Areas City/County: Lake Sampling Date: Oct. 24, 2024

Applicant/Owner: Autumn Karcey State: CA Sampling Point: SW1

Investigator(s): Dr. Geo Graening Section, Township, Range: _____

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

Subregion (LRR): Coastal Range Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: 168: Maymen-Etsel-Snook complex, 15 to 30 percent slopes NWI classification: _____

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

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

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

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:					

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1. n/a	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
		_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)				
1. n/a	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
		_____ = Total Cover		
Herb Stratum (Plot size: _____)				
1. Polypogon monspeliensis	_____	40	Yes	FACW+
2. Rumex crispus	_____	20		FACW-
3. Lolium perenne	_____	20		FAC*
4. Bromus tectorum	_____	10		FACU
5. other grasses	_____	10		_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____
11. _____	_____	_____	_____	_____
		100 = Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. n/a	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
		_____ = Total Cover		
% Bare Ground in Herb Stratum _____				
Remarks: wet meadow				

Prevalence Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants¹

___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL

Sampling Point: SW1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	7.5YR 4/3							loamy clay
6+								hardpan

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): 6

Hydric Soil Present? Yes ☒ No ☐

Remarks:

weak indicators

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- | |
|---|
| ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| ☐ Drainage Patterns (B10) |
| ☐ Dry-Season Water Table (C2) |
| ☐ Saturation Visible on Aerial Imagery (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? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

poorly drained area

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

Project/Site: Highland Farm Cultivation Project Areas City/County: Lake Sampling Date: Oct. 24, 2024
Applicant/Owner: Autumn Karcey State: CA Sampling Point: SW3
Investigator(s): Dr. Geo Graening Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): Coastal Range Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: 168: Maymen-Etsel-Snook complex, 15 to 30 percent slopes NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. <u>n/a</u>				
2. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
3. _____				
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				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.
1. <u>n/a</u>				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Polypogon monspeliensis</u>	<u>30</u>	<u>Yes</u>	<u>FACW+</u>	
2. <u>Rumex crispus</u>	<u>20</u>		<u>FACW-</u>	
3. <u>Lolium perenne</u>	<u>30</u>	<u>Yes</u>	<u>FAC*</u>	
4. <u>Bromus spp.</u>	<u>20</u>		<u>FAC</u>	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover	<u>100</u>			
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes ☒ No _____
1. <u>n/a</u>				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks: <u>wet meadow</u>				

SOIL

Sampling Point: SW3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	7.5YR 4/3							loamy clay
7+								hardpan

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): 6

Hydric Soil Present? Yes ☒ No ☐

Remarks:

weak indicators

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- | |
|---|
| ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| ☐ Drainage Patterns (B10) |
| ☐ Dry-Season Water Table (C2) |
| ☐ Saturation Visible on Aerial Imagery (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? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

poorly drained area

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

Project/Site: Highland Farm Cultivation Project Areas City/County: Lake Sampling Date: Oct. 24, 2024
 Applicant/Owner: Autumn Karcey State: CA Sampling Point: SW8
 Investigator(s): Dr. Geo Graening Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): Coastal Range Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: 168: Maymen-Etsel-Snook complex, 15 to 30 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. <u>n/a</u>				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>n/a</u>				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Juncus bufonius</u>	<u>80</u>	<u>Yes</u>	<u>OBL</u>	
2. <u>Carex sp.</u>	<u>10</u>	<u>No</u>	<u>OBL</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
<u>90</u> = Total Cover				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.
Woody Vine Stratum (Plot size: _____)				
1. <u>n/a</u>				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				Hydrophytic Vegetation Present? Yes ☒ No _____
Remarks: <u>emergent marsh</u>				

SOIL

Sampling Point: SW8

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	7.5YR 3/2							clay
7+								hardpan

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): 6

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- | |
|---|
| ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| ☐ Drainage Patterns (B10) |
| ☐ Dry-Season Water Table (C2) |
| ☐ Saturation Visible on Aerial Imagery (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? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

poorly drained area

APPENDIX B – PHOTOS FROM FIELD DELINEATION



