AQUATIC RESOURCES DELINEATION REPORT
FOR THE PROPERTY AT
10967 STOUT LANE, COULTERVILLE, CALIFORNIA

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1.0 EXECUTIVE SUMMARY

Natural Investigations Co. conducted a formal delineation of waters of the United States and waters of the State of the 170.78-acre property located at 10967 Stout Lane in Coulterville, Mariposa County, California. The field assessment was performed on October 15 and 16, 2019. Delineation methods followed procedures developed by the United States Army Corps of Engineers (USACE) and USEPA. Various survey points were established for the delineation of this Study Area. All hydrologic features were identified and mapped within the Study Area, and subjected to the 3-parameter test, the Kennedy and Scalia tests, and State of California agency criteria. This report provides the rational for preliminary jurisdictional determinations.

Based upon federal criteria, 9 features (five wetlands and four channels) totaling 280,789 square feet (6.446 acres) were determined to be potentially subject to federal and state jurisdiction. In addition, the riparian vegetation alongside of Bean Creek meets the criteria of the "stream zone" as regulated by CDFW. The remaining portions of the Study Area have upland features and contain no water features.

The Project would establish a memorial forest facility that will serve as an alternative to a traditional cemetery. The proposed project consists of improvements to an existing access road, the creation a visitors center and parking lot, pedestrian trails, and rest areas (gazebo and picnic tables). Although there are water features in the vicinity, none are located within the Project Area itself. Project construction is not expected to directly impact any jurisdictional water bodies. Therefore, no Clean Water Act permits (or state permits) are expected to be necessary.

This delineation of waters of the United States is subject to verification by USACE and the State Water Resources Control Board. Natural Investigations Company advises all parties to treat the information contained herein as preliminary until the appropriate agency provides a written determination of the boundaries of its jurisdiction and verifies the delineation map. This verification is normally considered valid for 5 years before re-verification is necessary.

2.0 INTRODUCTION

2.1 PURPOSE AND SCOPE OF REPORT

On behalf of Better Place Forests Company, Natural Investigations Company conducted a formal delineation of jurisdictional water bodies on the 170.78-acre property located at 10967 Stout Lane in Coulterville, in Mariposa 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 scope of services does not include other services that are not described in this Section, such as formal consultation with governmental agencies, or preparation of permit applications.

2.2 STUDY AREA LOCATION

The Study Area was defined as the property boundary of the two contiguous parcels, APN 003-010-035 (130.78 acres) and APN 003-010-034 (40 acres), located at 10967 Stout Lane, Coulterville (see Exhibits). Access is from an existing entrance at Dexter Road, which is paved with asphalt and owned and maintained by Mariposa County. For further reference, a detailed project description is provided in Section 5.

2.3 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.

2.3.1 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 of 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.

2.3.2 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).

2.4 ENVIRONMENTAL SETTING

The Study Area is located near the boundary of the Central Sierra Nevada Foothills and Central High Sierra Nevada geographic subregions of the larger California Floristic Province (Baldwin et al. 2012). The foothills region has a Mediterranean-type climate, characterized by distinct seasons of hot, dry summers with more pronounced winters at higher elevations. The Study Area and vicinity is in the upper limit of climate Zone 7, California's Foothill Pine Belt (Brenzel 2012). The topography of the Study Area is rolling with small streams incising undulating meadows and hilltops. The elevation ranges from approximately 3,244 feet to 3,400 feet above mean sea level. The Study Area is located within the Merced River watershed. The surrounding land uses are as follows: to the south, open space owned by Bureau of Land Management to the south, and to the west, north, and east, rural residential estates, cattle range, and timberland. Stanislaus National Forest is nearby to the northeast.

The Study Area is currently used as a tree farm and open space. There is evidence of a former cabin (which has been torn down) and there are remnant fruit trees (apple and pear) from an orchard. Timber

has been harvested within the Study Area within the last two years after some trees were affected by pine beetle.

3.0 METHODOLOGY

The delineation was conducted in accordance with the:

- 1987 Corps of Engineers Wetland Delineation Manual
- 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.

3.1 PRELIMINARY DATA GATHERING AND SYNTHESIS

Prior to conducting the field delineation the following information sources were reviewed:

- Client's engineering or design drawings (where available);
- United States Geologic Survey (USGS) 7.5-degree minute topographic quadrangle maps and aerial photography;
- United States Department of Agriculture Natural Resources Conservation Service (NRCS) soil survey maps;
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate (Flood Hazard Boundary) Maps;
- United States Fish and Wildlife Service (USFWS) National Wetland Inventory Maps; and
- Any readily-available studies performed previously.

3.2 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 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 and aquic (reducing) moisture regime. Soils are also classified as hydric on 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. Dr. Graening holds an endangered plant scientific collection permit: CDFW Plant Voucher Specimen Permit Number 09004. 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).

4.0 RESULTS

4.1 FIELD SURVEY AND CONDITIONS

Dr. G. O. Graening, Tim Nosal, M.S., and Ted Hermansen, M.S. conducted the field assessment on October 15 and 16, 2019. The weather conditions were warm, calm, and sunny, with a low of 46 degrees Fahrenheit and high of 86 degrees Fahrenheit. The biologists walked the perimeter of the Study Area as well as the boundaries of each potential aquatic resource within the Study Area that was identified through aerial imagery during preliminary review. 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.

4.2 VEGETATION

All plants sighted during the reconnaissance-level field survey of the Study Area are listed in the Appendix. The Study Area contains the following terrestrial vegetation communities: ruderal/developed; annual grassland, orchard, chaparral, pine-oak forest, and riparian. These vegetation communities are described below and are delineated in the Exhibits.

Ruderal/Disturbed. These areas consist of disturbed or converted natural habitat that is now either in ruderal state, graded, or urbanized with gravel roads, or structure and utility placement. Vegetation within this habitat type consists primarily of nonnative weedy or invasive species or ornamental plants lacking a consistent community structure. This habitat is classified as Holland vegetation type – "Urban – 11100," and "Urban" and "Barren" wildlife habitat types by CDFW's Wildlife Habitat Relationship System (WHR). This habitat type provides limited resources for wildlife and is utilized primarily by species tolerant of human activities. The disturbed and altered condition of these lands greatly reduces their habitat value and ability to sustain rare plants or diverse wildlife assemblages.

Annual grassland: The central portions of the Study Area are dominated by annual grassland habitat. This vegetation type is comprised largely of native and non-native grasses and herbs. Plants common in annual grassland include various species of wild rye (Elymus *caput-medusae*, *E. elymoides, E. glaucus, E. multisetus*, and *E. triticoides*) and other grasses and herbs such as Great valley gumweed (*Grindelia camporum*), hayfield tarplant (*Hemizonia congesta*), purple clarkia (*Clarkia purpurea*), yarrow (*Achillea millefolium*), spreading hedgeparsley (*Torilis arvensis*) narrowleaf mule's ears (*Wyethia angustifolia*) and others. Native grasses and wildflowers are common within this plant community. This vegetation can be classified as the Holland Type "Native Grassland" or as "Blue wild rye montane meadows" (Sawyer et al. 2009)".

Orchard: An historic apple and pear orchard occurs near the center of the project. Several trees were producing fruit during the biological surveys. Although formerly agricultural in nature, the orchard has largely reverted to annual grassland and should be considered as such. It is mentioned here as a separate vegetation community predominantly for descriptive purposes. The habitat value within the orchard is slightly altered from grassland conditions, however, the fruit trees attract and support wildlife. For example, bear scat with evidence of digested apple was observed in and around this area. The Project proponent may want to consider bear activity in their operations, such as the use of wildlife-proof trash bins, to avoid encounters. Although, as bears are not a special-status species, they are not addressed any further in this document.

Chaparral (Manzanita): Habitats dominated by shrubs are limited to the eastern edge of the parcel, south of Dexter Road. The majority of the chaparral is dominated by a single manzanita species, Mariposa manzanita (*Arctostaphylos viscida* ssp. *mariposa*). Other plants observed within the chaparral include sugar pine (*Pinus lambertiana*), ponderosa pine (*Pinus ponderosa*) and canyon live oak (*Quercus chrysolepis*). Piles of decaying manzanita within the parcel indicate that this habitat extended further west into the parcel. The manzanita may have been removed as a timber improvement project. This vegetation type can be classified as the Holland Type "37B00 – Manzanita Chaparral" or as "37.305.00 White Leaf Manzanita Alliance (Sawyer et al. 2009)".

Pine-Oak Forest: Tree-dominated forest habitats are found across the Study Area. Vegetation in the pine-oak forest consists of a canopy of ponderosa pine (*Pinus ponderosa*) and California black oak (*Quercus kelloggii*) and with incense-cedar (*Calocedrus decurrens*), interior live oak (*Quercus wislizeni*) and sugar pine (*Pinus lamberiana*). The understory is populated with a variety of annual and perennial grasses and herbs. The mixed forest can be classified as the Holland Type "Westside Ponderosa Pine Forest" or as "*Quercus kelloggii-Pinus ponderosa* Association" (Sawyer et al. 2009). Within the Study Area, this vegetation community has been disturbed by timber harvest operations. Dying trees observed in aerial imagery starting in 2017 were likely damaged by pine beetles and then consequently removed. Evidence of former logging roads and clearings used to collect trees were observed. The majority of the forest canopy was not dense due to this recent land use history. However, several large specimens of black oak were present.

Riparian: Riparian habitat can be found in the eastern portion of the Study Area in uplands along the channels of Bean Creek and an associated tributary. The riparian zone consists of dense patches of arroyo willow (*Salix lasiolepis*) with ninebark (*Physocarpus capitatus*), berries (*Rubus* spp.), California rose (*Rosa californica*) and a variety of herbs. This vegetation can be classified as "*Salix lasiolepis* Shrubland Alliance (Sawyer et al. 2009)" or as the Holland Type "Great Valley willow scrub".

4.3 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 listed and described in the following table and mapped in the Exhibits, as needed. Some 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).

Mapped Soil Units Within The Study Area

Unit #	Unit Name	Drainage Class	Hydric?
8171	Nedsgulch-Wallyhill complex, 3 to 15 percent slopes	well-drained	no
8173	Nedsgulch-Wallyhill-Arpatutu complex, 30 to 60 percent slopes	well-drained	no
JbD2	Josephine gravelly loam, 15 to 30 percent slopes, eroded	well-drained	no
JcD2	Josephine gravelly loam, 2 to 15 percent slopes, eroded	well-drained	no
JcE2	Josephine gravelly loam, 15 to 30 percent slopes, eroded	well-drained	no
LdC	Loamy alluvial land	well-drained	yes

4.4 HYDROLOGY

The general direction of surface runoff in the Study Area is from the west to the east (see Exhibits). Drainage from this region flows east and south to the Merced River, which is tributary to the San Joaquin River. Annual precipitation averages approximately 30 inches (Western Regional Climate Center 2019). The Property is not located within a floodplain, as defined by the Federal Emergency Management Agency Flood Insurance Rate Maps. However, directly adjacent to the east is a Special Flood Hazard Area. 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.

4.5 NATIONAL WETLANDS INVENTORY / PREVIOUS DELINEATIONS

No previously published wetland delineation reports were identified by or made known to the author. The USFWS National Wetland Inventory (NWI) digital maps of the Study Area were consulted. Regional mapped wetland features are shown in the Exhibits, where illustrative. Some NWI wetlands were mapped within the Study Area: freshwater emergent wetland, freshwater pond, riverine, and freshwater forested/shrub wetland. Note, however, that this database was not used to conclude that a wetland was present or absent in the Study Area.

4.6 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.

4.6.1 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, 9 features (five wetlands and four channels) totaling 280,789 square feet (6.446 acres) within the Study Area were determined to be potentially subject to USACE jurisdiction.

WETLANDS

Feature Codes W1, W2, W3, W4, and W5: Freshwater Emergent Wetland (wet meadow):
Cowardin Class: PEM1A
Within the center of the Study Area, a large wet meadow is found in the poorly-drained valley of an unnamed channel (C-2a and C-2b). The private access road bisects this wet meadow and forces flow through a pipe culvert. Vegetation in this area is dominated by herbaceous species typical of wetlands, including western mountain aster (*Symphyotrichum spathulatum var. spathulatum*), velvet grass (*Holcus lanatus*), Parish's yampah (*Perideridia parishii*), sedges (*Carex* spp.), rushes (*Juncus* spp.), creeping leather root (*Hoita orbicularis*) and other herbs and grasses. Seeps are common in this wet meadow, and one seep has been excavated to create a small stockpond.

In the southeast corner of the Study Area, a small localized wetland with emergent vegetation is found along either side parcel boundary. Plants found in this wetland include sedges (*Carex* spp.), rushes (*Juncus* spp.), western mountain aster (*Symphyotrichum spathulatum var. spathulatum*), California horkelia (*Horkelia elata* ssp*. californica*), velvet grass (*Holcus lanatus*), Parish's yampah (*Perideridia parishii*), sedges (*Carex* spp.), rushes (*Juncus* spp.), creeping leather root (*Hoita orbicularis*) and other herbs and grasses.

CHANNELS

C-1: Bean Creek (Intermittent)
Cowardin Class: R4SB1
Bean Creek flows southeast, exiting near the southeast corner of the Study Area. The bottom of the channel is typically exposed bedrock. Although water was not flowing on the date of survey, several areas of ponded water were observed. The bedrock channel averages 12 feet wide with an ordinary high water mark (OHWM) of 18inches. Pockets of soil and lower portions of the bank support scarlet monkeyflower (*Erythranthe cardinalis*), tall flatsedge (*Cyperus eragrostis*), mugwort (*Artemisia douglasiana*) and other forbs and shrubs. Along the lower reaches, a riparian vegetation community is also present.

C-2a, C-2b: Unnamed Ephemeral Channel
Cowardin Class: R4SBC
This unnamed feature flows southeastward, joining Bean Creek in the eastern half of the Study Area. A weakly defined channel in the western half of the Study Area is dammed by a road and flows through a culvert and becomes a distinct channel continuing through the meadow. The gravel and cobble channel averages 2-feet wide with an OHWM of 6 inches, although it can be deeply incised. The channel and adjacent meadow support abundant vegetation including sedges (*Carex* spp.), rushes (*Juncus* spp.), creeping leather root (*Hoita orbicularis*), and yellow monkeyflower (*Erythranthe guttata).*

C-3: Unnamed Ephemeral Channel
Cowardin Class: R4SBC
Several unnamed ephemeral channels were mapped in the northwestern portion of Study Area. These features flow south and east before merging into a single channel. This channel then flows into Bean Creek near the north-central portion of the Study Area. The main portion of the channel is deeply incised with steep banks. The channel bed is variously gravel and cobble or bedrock, and averages 3 feet wide with an OHWM of 12 inches. The channel and adjacent bank support abundant vegetation including blackberries (*Rubus* spp.), monkeyflower (*Erythranthe* spp.), Californa hemp (*Hoita macrostachya*), willowherb (*Epilobium* sp.) and bugle hedgenettle (*Stachys ajugoides).*

C-4: Unnamed Ephemeral Channel
Cowardin Class: R4SB1
This unnamed feature begins near the center of the northeastern portion of Study Area and flows south into Bean Creek. Beginning as a weakly defined swale, this feature becomes more distinct, eventually developing into a well-defined channel. The channel bed of gravel and cobble averages 4 feet wide with an OHWM of 10 inches. The channel and adjacent bank support abundant vegetation including arroyo willow (*Salix lasiolepis*), grasses (Poaceae), sedges (*Carex spp.*), willowherb (*Epilobium* sp.) and bugle hedgenettle (*Stachys ajugoides).*

No other wetlands were detected within the Study Area. No vernal pools or other isolated wetlands were detected within the Study Area. No other data points and their test pits gave indications of hydric soils, and hydrophytes were generally lacking.

Aquatic Resources Classification			Aquatic Resource Size		
Aquatic Resource Name	Cowardin	Location (Lat/Long)	(sq. ft.)	(acre)	(linear feet)
Channels					
C1 (Bean Creek)	R4SB1	37.775764°, -120.170096°	49,272	1.131	4,106
C2a	R4SBC	37.772088°, -120.174219°	2,266	0.052	1,133
C2b	R4SBC	37.773204°, -120.172123°	6,364	0.146	3,182
C3	R4SBC	37.777220°, -120.173855°	9,408	0.216	3,136
C4	R4SB1	37.774626°, -120.164416°	5,704	0.131	1,426
		Total Channels	73,014	1.676	12,983
Wetlands					
W1	PEM1A	37.772056°, -120.174102°	90,272	2.072	
W2	PEM1A	37.773183°, -120.171876°	33,928	0.779	
W3	PEM1A	37.774316°, -120.168927°	80,690	1.852	
W4	PEM1A	37.772684°, -120.171673°	1,443	0.033	
W5	PEM1A	37.773228°, -120.161764°	1,442	0.033	
		Total Wetlands	207,775	4.770	

4.6.2 Upland Features Not Expected To Be Subject to Federal Regulation

There are some upland features (localized depressions and linear swales and roadside ditches) that are understood not to be jurisdictional (see Exhibits). They do not have hydric soils or vegetation. They all fail the Scalia Test for relatively permanent flow. They also 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*."

4.6.3 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 same 9 features within the Study Area identified in the federal section were determined to be potentially subject to State jurisdiction.

In addition, the riparian vegetation alongside of Bean Creek meets the criteria of the "stream zone" as regulated by CDFW (see Exhibits). The riparian zone is 57,233 square feet (1.314 acres) within the Study Area.

The Study area is not located within a Coastal Zone.

5.0 IMPACT ANALYSES, MITIGATIONS MEASURES, AND RECOMMENDATIONS

5.1 PROJECT DESCRIPTION

The Project would establish a memorial forest facility that will serve as an alternative to a traditional cemetery. Ashes of deceased individuals will be naturalized and rebalanced, then incorporated into the soil under protected trees. Better Place Forests (BPF) will landscape and maintain the land in perpetuity. BPF plans to manage the forest to mitigate fire risk and promote a healthy ecosystem. This management might include selective thinning to restore and enhance the existing trees, reduce ground fuel to mitigate fire risk, and manage the eradication of non-native species. Through proper forest management, BPF intends to protect the forest and provide a buffer for the surrounding forests from harmful pine-beetle infestation and reduce the risk of wildfire. All forest management will be directed by an accredited arborist or forester in accordance with a forest management plan that is to be developed in the future.

All Project improvements that were assessed will occur north of Dexter Road, on the larger western parcel (see Site Plan). Tree removal will be avoided to the extent feasible and the majority of proposed developments occur within previously disturbed areas. The proposed development plan for this property includes the construction of an approximately 1,500 square foot visitor center, improving and extending the entry and driveway, developing a gravel parking area for approximately 20 cars (including accessible spaces), and creating a trail system within the property. The visitor center will function as an office for BPF forest stewards, a gathering place for families, contain sitting rooms, equipment and storage areas,

and a restroom. No overnight accommodations are contemplated, as the property will be open for day use only. The visitor center and parking area are proposed in pre-existing clearings, minimizing potential biological disturbance to the forest. BPF intends to install a septic system and leachfield under County permit.

Additional Project components include: clearing vegetation on north side of Dexter Road in the vicinity of the existing entry gate to increase driver visibility; minor grading of the existing gravel road to ensure a minimum 12 foot width; two approximately 100 square foot sheds; a minimum 2500 gallon water tank; a new, approximately 200-foot dirt pathway; a memorial area with gazebo and benches; and picnic benches. These components may be altered in future planning cycles if Mariposa County requires modification or to avoid resource impacts as necessary. For example, existing site plans describe one turnout near a potentially jurisdictional wetland. The location of this turnout will need to be adjusted to avoid potential impacts to the feature. The property has onsite well water and will be serviced by PG&E power lines that run across the property.

5.2 POTENTIAL PROJECT IMPACTS TO WATERS OF THE US

The following discussion evaluates the potential for Project-related activities to adversely affect water resources according to the criteria set forth in Section 2.3. The significance of impacts to water resources and aquatic habitats depends upon the condition of the existing water resources and their proximity to Project-related impacts, whether impacts are temporary or permanent, and the effectiveness of measures implemented to protect these resources from impacts.

The Project's architectural design was overlaid upon the mapped habitats and water resources to assist in the analysis of Project-related impacts (see Exhibits). Although there are potential water features within the greater Study Area, none are located within the Project Area itself. Project construction is not expected to directly impact any jurisdictional water bodies. Therefore, no Clean Water Act permits (or state permits) are expected to be necessary.

5.2.1 Recommended Mitigation Measures

If it is determined at a later date that construction of the project would require the placement of fill or structures in a wetland or channel (such as a culvert extension), a CWA Section 404 permit must be obtained and mitigation performed before these water features are disturbed or altered. CWA 401 water quality certification from RWQCB will also be necessary if a Section 404 permit is issued. If the sum of affected water resources is less than 0.5 acre, a Section 404 Nationwide Permit may be obtained from USACE. If the sum of affected water resources is greater than 0.5 acre, a Section 404 Individual Permit must be obtained from USACE. Compliance with all the terms and conditions of the appropriate USACE permit and implementation of compensatory, minimization, and avoidance mitigation would minimize impacts to waters of the US to a less than significant level.

5.3 POTENTIAL PROJECT IMPACTS TO WATERS OF THE STATE

No direct impacts to water resources are expected.

Construction of roads, trails, and buildings and other structures may involve grading, excavation, and stockpiling. Such soil disturbances can increase erosion by both water and wind, creating a potentially significant impact upon receiving waterbodies. If the construction footprint is larger than one acre in area, such construction is regulated by the Clean Water Act under the SWRCB's California General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ). 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. Construction Best Management Practices are also required. Implementation of these measures would reduce potential construction-related impacts to water quality to a less than significant level. Because these actions are required by law, no mitigation is necessary.

5.3.1 Recommended Mitigation Measures

If project implementation requires construction in, or disturbance to, a wetland, stream channel, or a "stream zone" (i.e., riparian habitat), a California Fish and Game Code Section 1600 Streambed Alteration Agreement with CDFW will be needed before ground disturbance is initiated. CWA 401 water quality certification from the RWQCB may also be necessary if a Streambed Alteration Agreement is formed. This Streambed Alteration Agreement and Water Quality Certification typically require compensatory mitigation for loss of jurisdictional waters. Compliance with all the terms and conditions of the appropriate State permit(s) and implementation of compensatory, minimization, and avoidance mitigation would minimize impacts to waters of the State to a less than significant level.

County permits may be required for vegetation clearing in riparian areas and any loss of sensitive habitats such as wetlands or channels.

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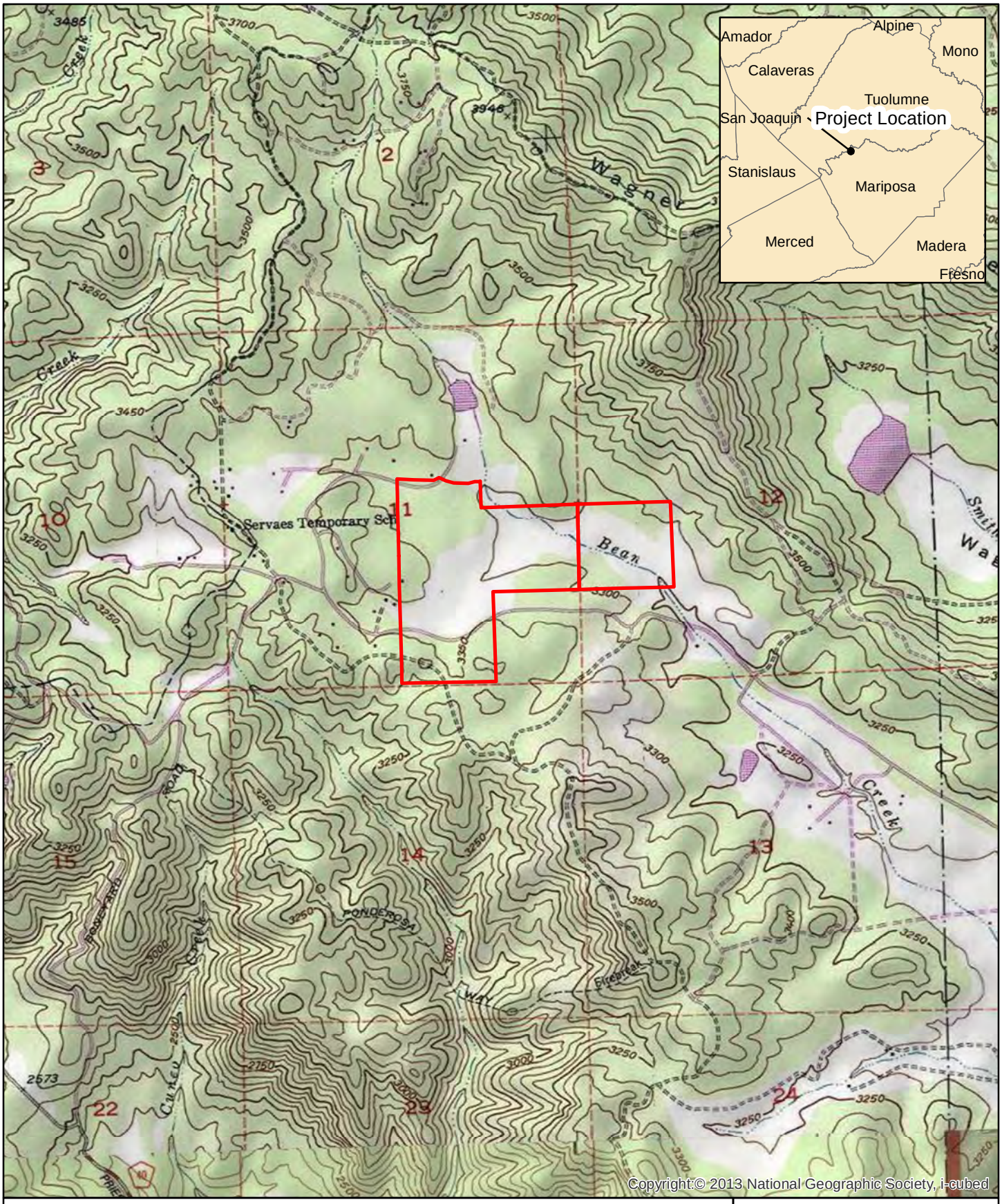
7.0 QUALIFICATIONS OF SURVEYORS AND REPORT PREPARERS

G.O. GRAENING, Ph.D.
G. O. Graening holds a Ph.D. in Biological Sciences and a Master of Science in Biological Engineering, and is a certified arborist (International Society of Arboriculture) and certified professional in storm water quality (EnviroCert Int'l). Dr. Graening has 13 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.

TED HERMANSEN, M.S.
Mr. Hermansen holds a Master of Science Degree in Education and a Bachelor of Arts Degree with a double major in Biology and Environmental Studies. Mr. Hermansen has 18 years of experience in environmental consulting, including regulatory, biological studies (including wetland delineations), and project implementation. Mr. Hermansen is an active member of the Wildlife Society and organized a vernal pool symposium in 2017, including presentations from 13 vernal pool/wetland experts.

TIMOTHY R. NOSAL, M.S.
Timothy R. Nosal holds a B.S. and M.S. in Biological Sciences. Mr. Nosal has statewide experience performing sensitive plant and animal surveys in addition to terrestrial vegetation investigations. Mr. Nosal has over 25 years of experience in environmental assessment and teaching with employers that include California Department of Fish and Wildlife, State Water Resources Control Board, American River College, MTI College and Pacific Municipal Consultants.

8.0 EXHIBITS



Parcel Location

0 0.5 1 Kilometers

0 0.5 1 Miles

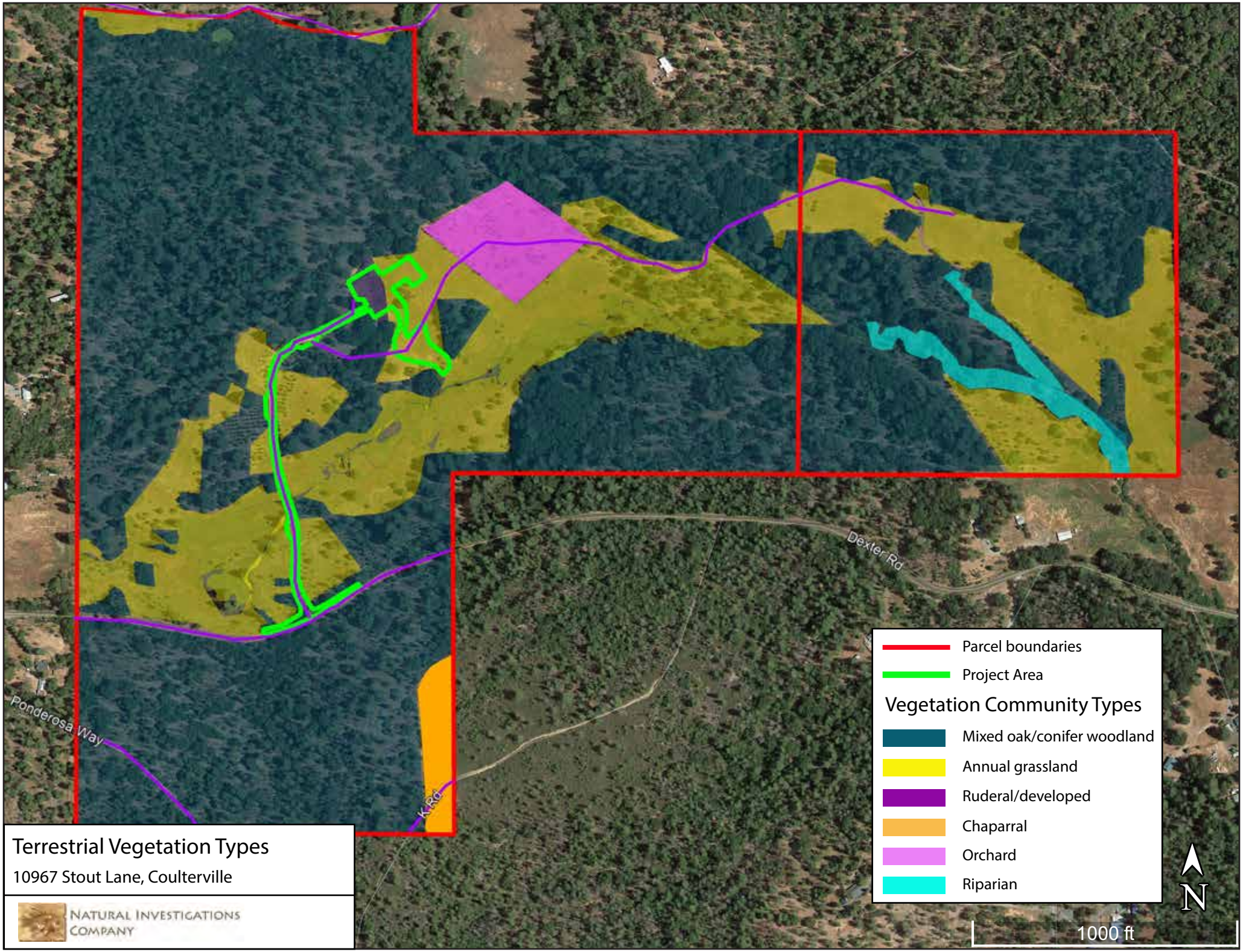
1:24,000

10967 Stout Lane
Parcel Location Map

Natural Investigations Company

Map Date 10/1/2019

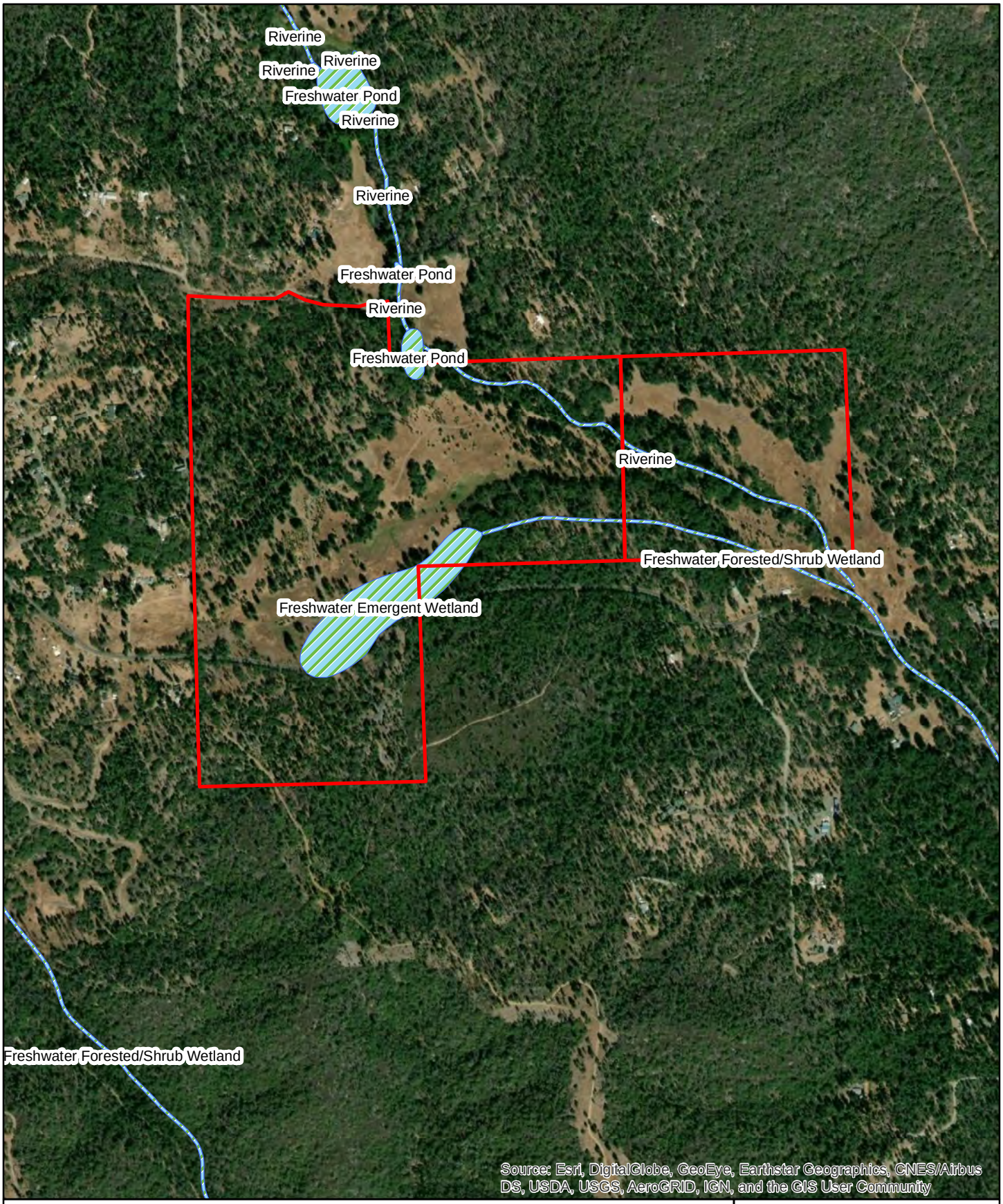
Groveland 2001 Quadrangle:Township 2S, Range 16E, Section 11, 12



Terrestrial Vegetation Types

10967 Stout Lane, Coulterville

Natural Investigations Company



Parcel Location

Wetlands and Channels

0 250 500 Meters

0 1,000 2,000 Feet

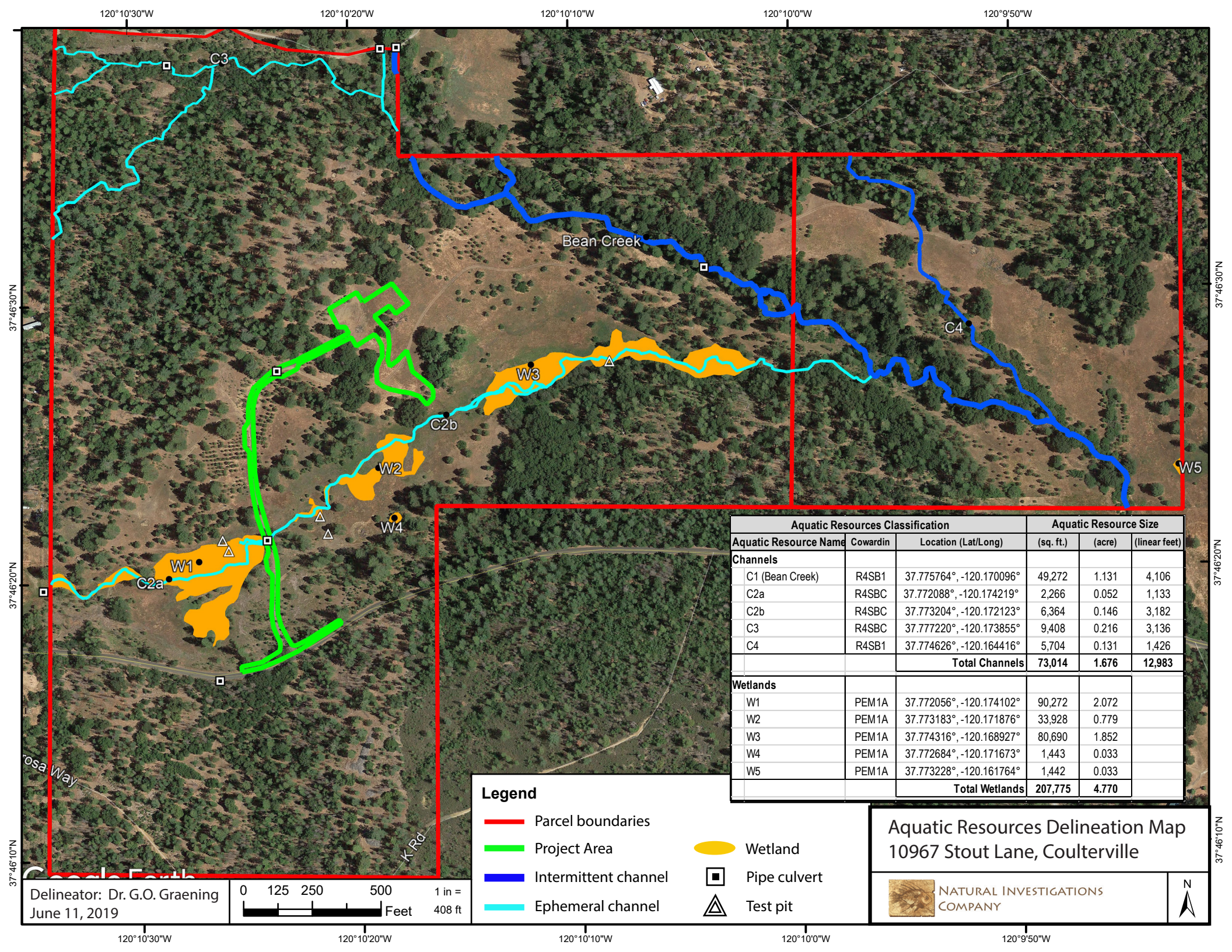
1:10,000

10967 Stout Lane
National Wetlands Inventory
Features Map

Natural Investigations Company

Map Date 10/1/2019

Groveland 2001 Quadrangle:Township 2S, Range 16E, Section 11, 12



Aquatic Resources Classification			Aquatic Resource Size		
Aquatic Resource Name	Cowardin	Location (Lat/Long)	(sq. ft.)	(acre)	(linear feet)
Channels					
C1 (Bean Creek)	R4SB1	37.775764°, -120.170096°	49,272	1.131	4,106
C2a	R4SBC	37.772088°, -120.174219°	2,266	0.052	1,133
C2b	R4SBC	37.773204°, -120.172123°	6,364	0.146	3,182
C3	R4SBC	37.777220°, -120.173855°	9,408	0.216	3,136
C4	R4SB1	37.774626°, -120.164416°	5,704	0.131	1,426
		Total Channels	**73,014**	**1.676**	**12,983**
Wetlands					
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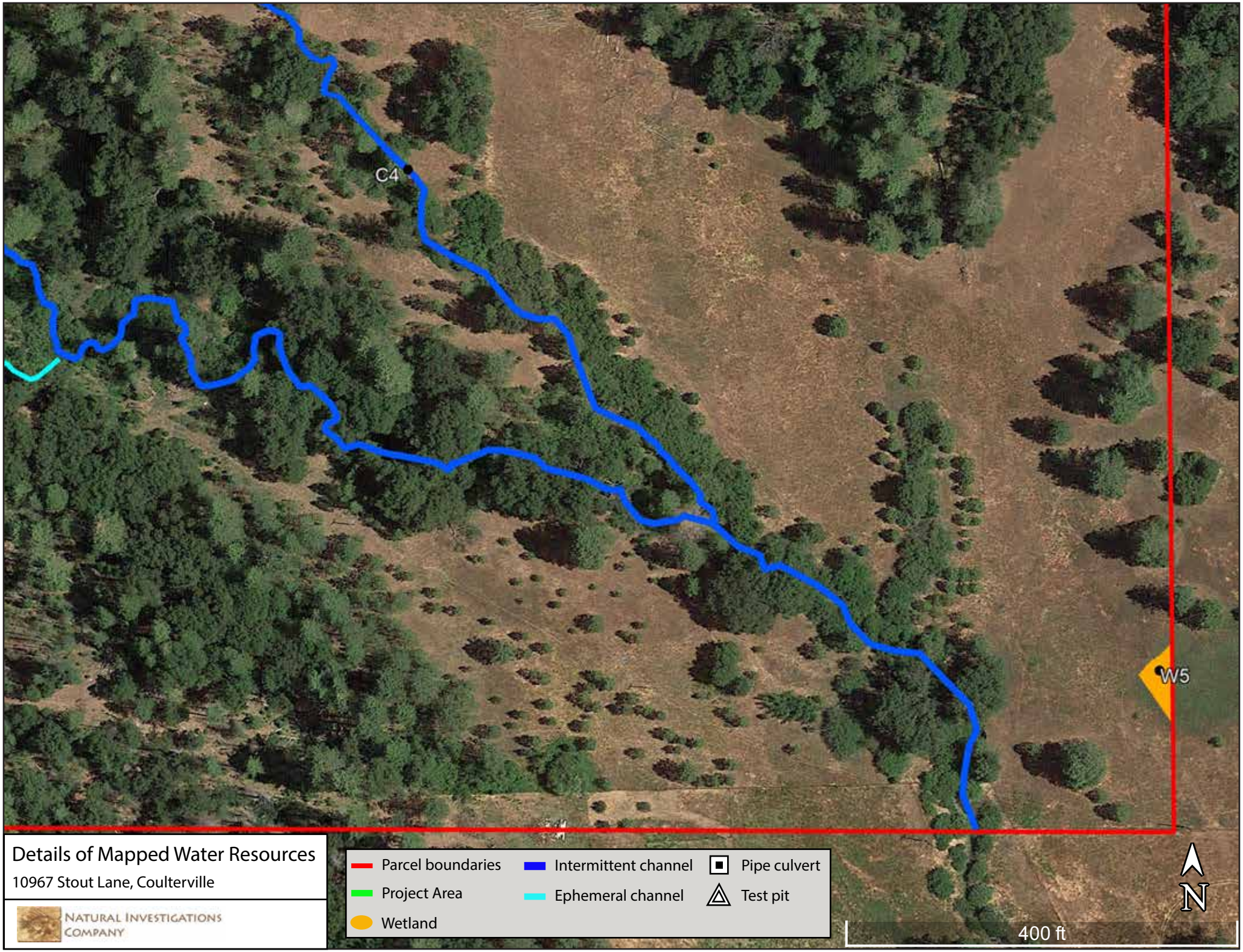
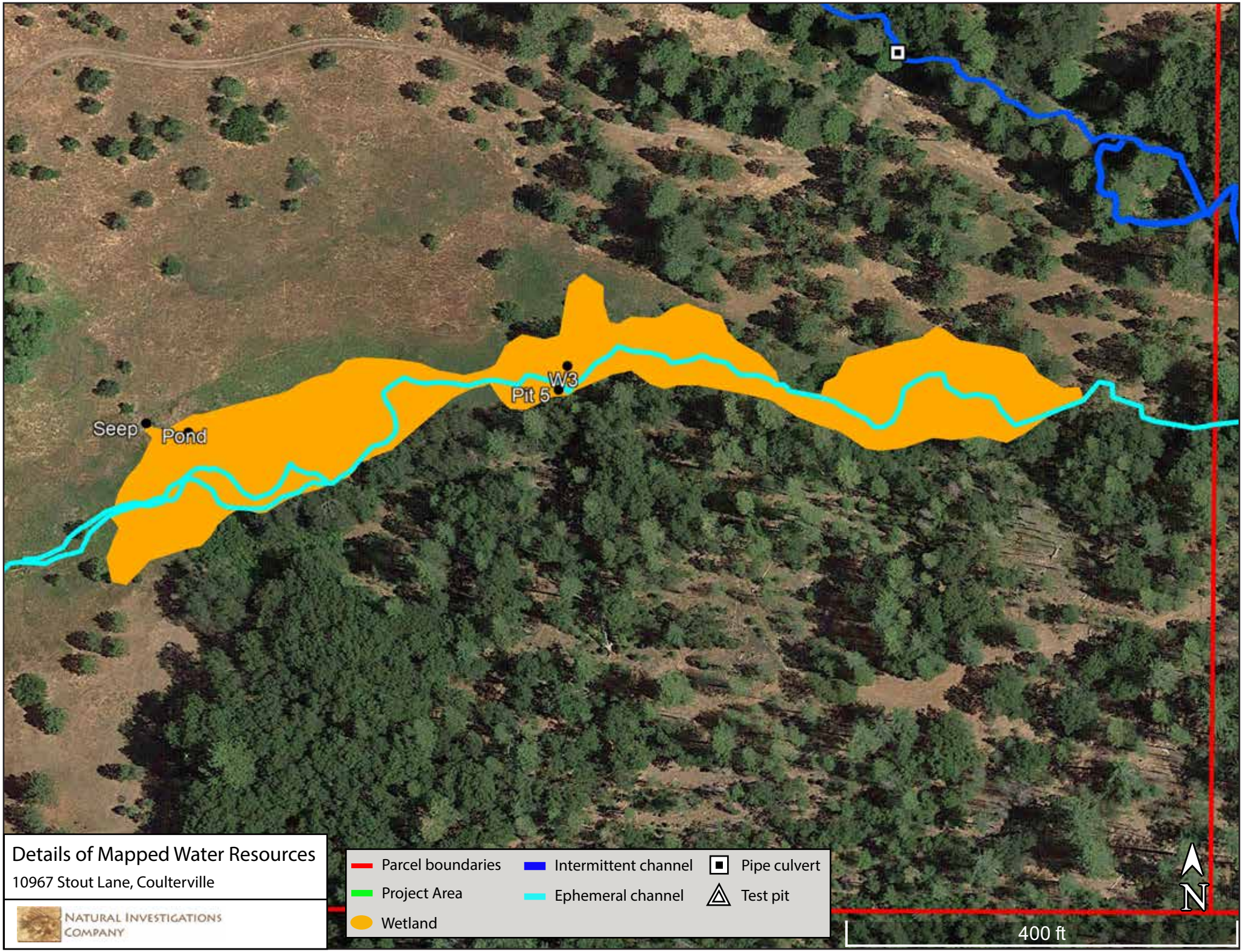
W2	PEM1A	37.773183°, -120.171876°	33,928	0.779	
W3	PEM1A	37.774316°, -120.168927°	80,690	1.852	
W4	PEM1A	37.772684°, -120.171673°	1,443	0.033	
W5	PEM1A	37.773228°, -120.161764°	1,442	0.033	
		Total Wetlands	**207,775**	**4.770**	

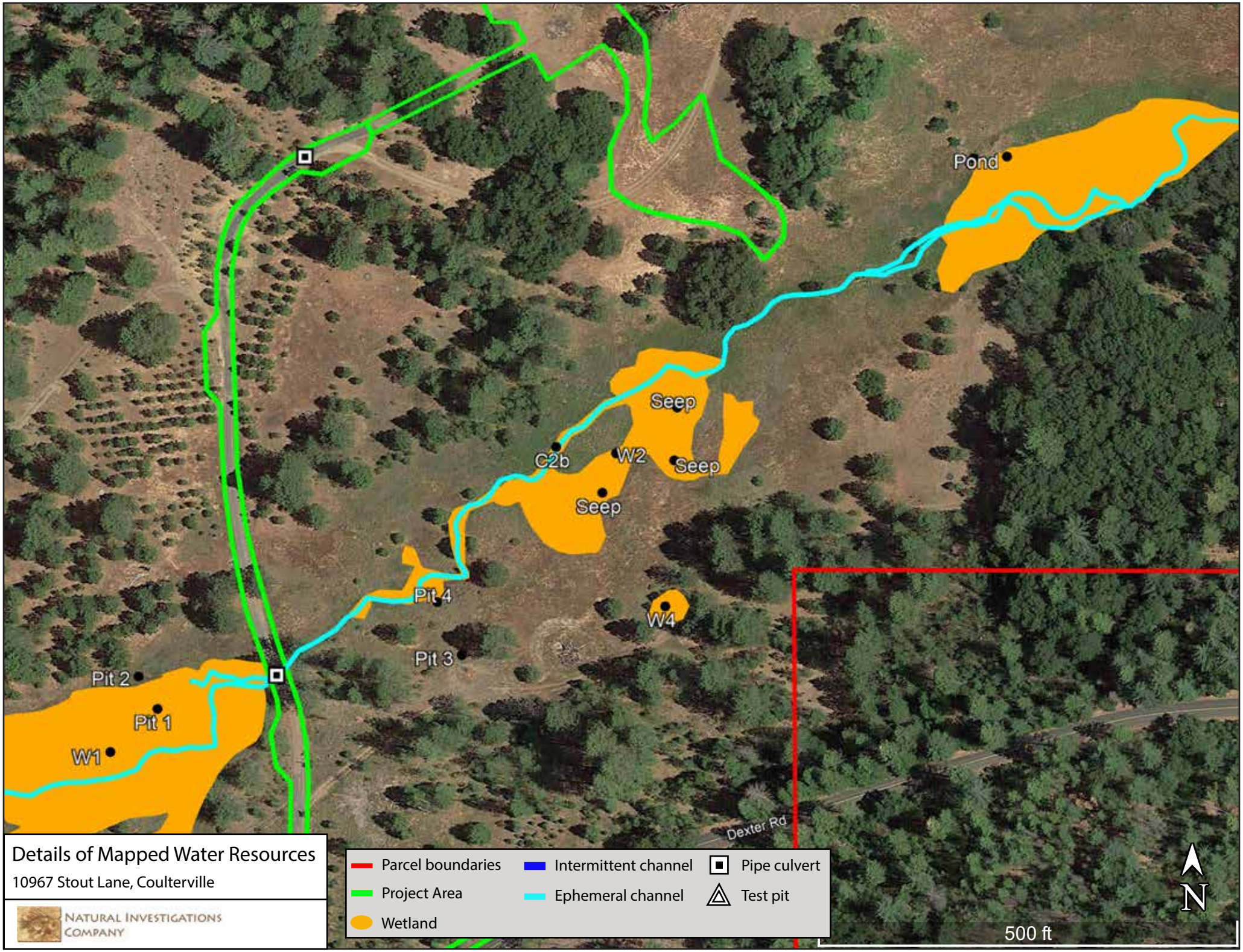
Delineator: Dr. G.O. Graening
June 11, 2019

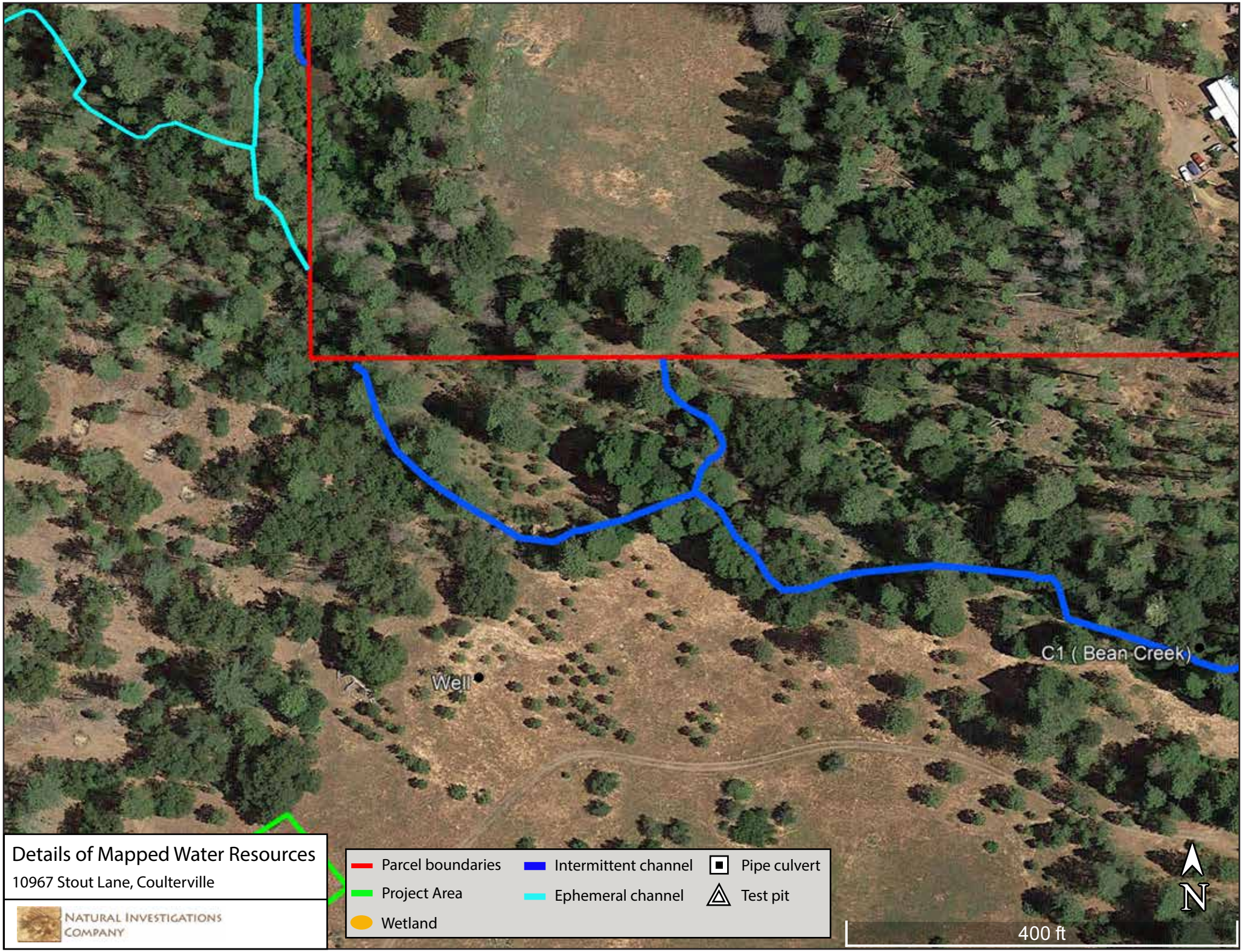
Aquatic Resources Delineation Map
10967 Stout Lane, Coulterville

Natural Investigations Company


C4
W5
Details of Mapped Water Resources
10967 Stout Lane, Coulterville
Natural Investigations Company
Parcel boundaries
Project Area
Wetland
Intermittent channel
Ephemeral channel
Pipe culvert
Test pit
N
400 ft


Seep
Pond
Pit 5
W3
Details of Mapped Water Resources
10967 Stout Lane, Coulterville
Natural Investigations Company
Parcel boundaries
Project Area
Wetland
Intermittent channel
Ephemeral channel
Pipe culvert
Test pit
N
400 ft

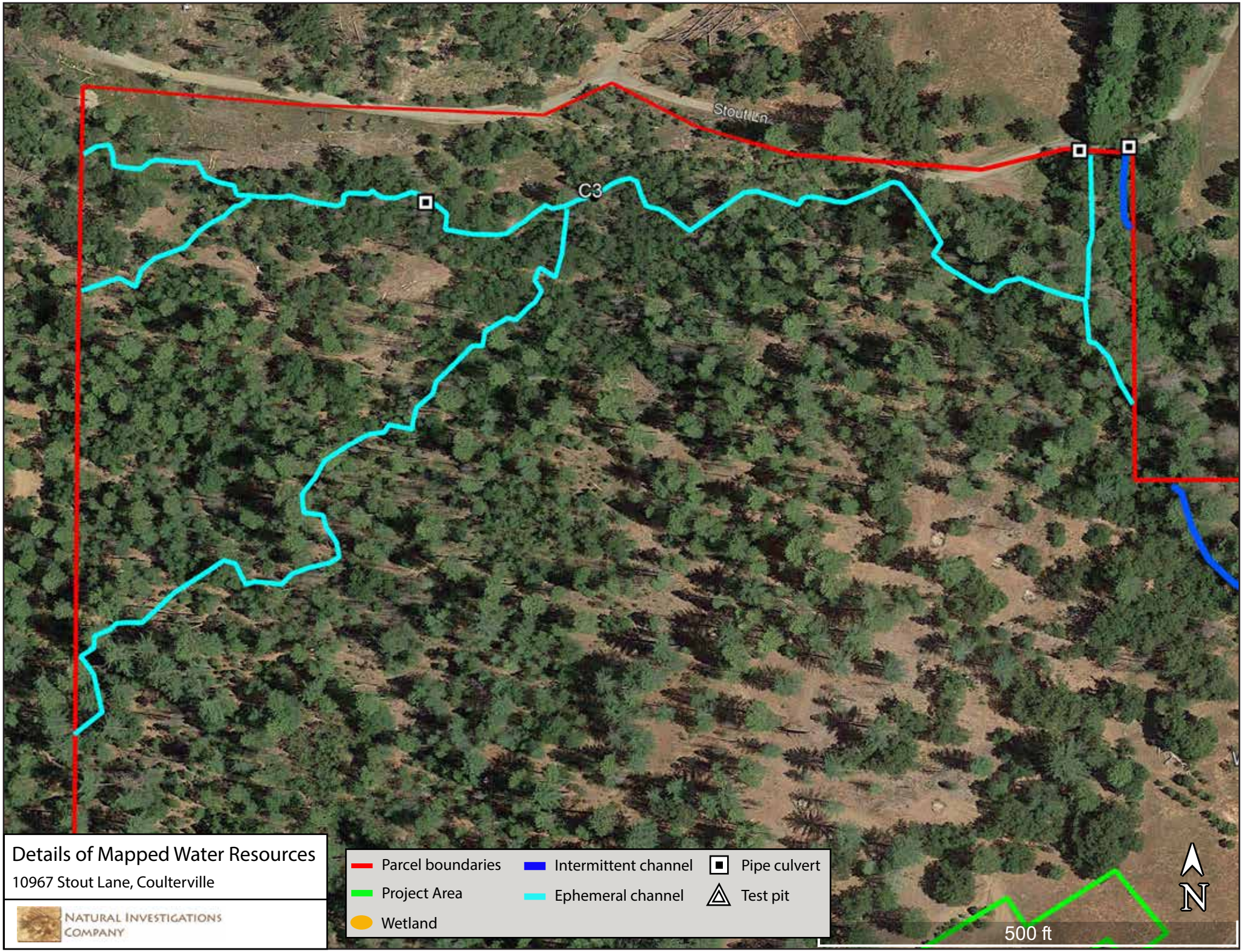

Pond
Seep
C2b
W2
Seep
Seep
Pit 4
W4
Pit 3
Pit 2
Pit 1
W1
Dexter Rd
Details of Mapped Water Resources
10967 Stout Lane, Coulterville
Natural Investigations Company
Parcel boundaries
Project Area
Wetland
Intermittent channel
Ephemeral channel
Pipe culvert
Test pit
N
500 ft



Details of Mapped Water Resources

10967 Stout Lane, Coulterville

Natural Investigations Company



Details of Mapped Water Resources

10967 Stout Lane, Coulterville

Natural Investigations Company

9.0 APPENDIX A – INVENTORY OF PLANTS

Plants observed at 10967 Stout Lane, Coulterville, on October 15-16 2019

Common name	Scientific name
Yarrow	*Achillea millefolium*
Spanish lotus	*Acmispon americanus*
Annual agoseris	*Agoseris heterophylla*
Colonial bentgrass	*Agrostis capillaris*
Idaho bentgrass	*Agrostis idahoensis*
Silver hairgrass	*Aira cayophyllea*
Water plantain	*Alisma plantago-aquatica*
Utah serviceberry	*Amelanchier utahensis*
Western pearly everlasting	*Anaphalis margaritacea*
Silvery everlasting	*Antennaria argentea*
Spreading dogbane	*Apocynum androsaemifolium*
Western columbine	*Aquilegia formosa*
Mariposa manzanita	*Arctostaphylos viscida ssp. mariposa*
Prairie threeawn	*Aristida oligantha*
Arnica	*Arnica sp.*
California mugwort	*Artemisia douglasiana*
Hartweg's wild ginger	*Asarum hartwegii*
Purple milkweed	*Asclepias cordifolia*
Purple false brome	*Brachypodium distachyon*
Brodiaea	*Brodiaea sp.*
Australian chess	*Bromus arenarius*
California brome	*Bromus carinatus*
Ripgut brome	*Bromus diandrus*
Softchess	*Bromus hordeaceous*
Cheatgrass	*Bromus tectorum*
Incense cedar	*Calocedrus decurrens*
Mariposa lily	*Calochortus sp.*
Western morning glory	*Calystegia occidentalis*
Cress	*Cardimine sp.*
Sedge	*Carex spp.*
Wedgeleaf ceanothus	*Ceanothus cuneatus*
Deer brush	*Ceanothus integerrimus*
Yellow starthistle	*Centaurea solstitialis*
Fitch's spikeweed	*Centromadia fitchii*
Birchleaf mountain mahogany	*Cercocarpus betuloides*
Wavy leaf soap root	*Chlorogalum pomeridianum*
Western thistle	*Cirsium occidentale*
Bull thistle	*Cirsium vulgare*
Purple clarkia	*Clarkia purpurea ssp. quadrivulnera*
Creek clematis	*Clematis ligusticifolia*
Chinese houses	*Collinsia heterophylla*
Dove weed	*Croton setiger*
Swamp grass	*Crypsis schoenoides*
Dogtail grass	*Cynosurus echinatus*
Tall flatsedge	*Cyperus eragrostis*
Orchard grass	*Dactylis glomerata*
Durango root	*Datisca glomerata*
Larkspur	*Delphinium sp.*
Dichelostemma	*Dichelostemma sp.*

Common name	Scientific name
Sticky cinquefoil	*Drymocallis glandulosa*
Needle spikerush	*Eleocharis acicularis*
Pale spikerush	*Eleocharis macrostachya*
Medusahead	*Elymus caput-medusae*
Squirreltail grass	*Elymus elymoides var. californicus*
Blue wildrye	*Elymus glaucus*
Big squirreltail grass	*Elymus multisetus*
Creeping wild rye	*Elymus triticoides*
Tall willowherb	*Epilobium brachycarpum*
Denseflower willowherb	*Epilobium densiflorum*
Glaucous willowherb	*Epilobium glaberrimum*
Naked buckwheat	*Eriogonum nudum*
Wooly sunflower	*Eriophyllum lanatum*
Common stork's-bill	*Erodium cicutarium*
Scarlet monkeyflower	*Erythranthe cardinalis*
Yellow monkey flower	*Erythranthe guttata*
California poppy	*Eschscholzia californica*
Pacific fescue	*Festuca macrostachya*
Rattail sixweeks fescue	*Festuca myuros*
Italian rye grass	*Festuca perennis*
Fescue	*Festuca sp.*
California coffeeberry	*Frangula californica*
Hoary coffeeberry	*Frangula tomentosa*
Checker lily	*Fritillaria affinis*
Bolander's bedstraw	*Galium bolanderi*
Great Valley gumweed	*Grindelia camporum*
Hayfield tarplant	*Hemizonia congesta*
Toyon	*Heteromeles arbutifolia*
Shortpod mustard	*Hirschfeldia incana*
California hemp	*Hoita macrostachya*
Creeping leather root	*Hoita orbicularis*
Velvet grass	*Holcus lanatus*
Meadow barley	*Hordeum brachycarpum*
California horkelia	*Horkelia californica ssp. elata*
Gold wire	*Hypericum concinnum*
Klamath weed	*Hypericum perfoliatum*
Toad rush	*Juncus bufonius*
Parry's rush	*Juncus parryi*
Iris-leaved rush	*Juncus xiphioides*
Prickly lettuce	*Lactuca serriola*
Sierra pea	*Lathyrus nevadensis*
Lesser hawkbit	*Leontodon saxatilis*
Field pepper grass	*Lepidium campestre*
Whiskerbush	*Leptosiphon ciliatus*
Lupine	*Lupinus sp.*
Hyssop loosestrife	*Lythrum hyssopifolia*
Slender tarweed	*Madia gracilis*
Apple	*Malus domestica*
Spearmint	*Mentha spicata*
Q tips	*Micropus californicus var. californicus*
Watercress	*Nasturtium officinale*

Common name	Scientific name
Downy pincushion plant	*Navarretia pubescens*
Sweet cicely	*Osmorhiza berteroi*
Parish's yampah	*Perideridia parishii*
Common smartweed	*Persicaria hydropiper*
Common timothy	*Phleum pratense*
Oak mistletoe	*Phoradendron leucarpum ssp. tomentosum*
Ninebark	*Physocarpus capitatus*
Sugar pine	*Pinus lambertiana*
Ponderosa pine	*Pinus ponderosa*
Gray pine	*Pinus sabiniana*
English plantain	*Plantago lanceolata*
Kentucky bluegrass	*Poa pratensis*
Sierra milkwort	*Polygala cornuta*
Common knotgrass	*Polygonum aviculare*
Rabbitsfoot grass	*Polypogon monspeliensis*
Water beard grass	*Polypogon viridis*
Lombardy poplar	*Populus nigra*
Bracken	*Pteridium aquilinum*
Pear	*Pyrus communis*
Canyon live oak	*Quercus chrysolepis*
California black oak	*Quercus kelloggii*
Interior live oak	*Quercus wislizeni*
Hollyleaf redberry	*Rhamnus ilicifolia*
Sierra gooseberry	*Ribes roezlii var. roezlii*
Black locust	*Robinia pseudoacacia*
California rose	*Rosa californica*
Himalayan blackberry	*Rubus armeniacus*
Cutleaf blackberry	*Rubus laciniatus*
Whitebark raspberry	*Rubus leucodermis*
Western thimbleberry	*Rubus parviflorus*
Sheep sorrel	*Rumex acetocella*
Clustered dock	*Rumex conglomeratus*
Curly dock	*Rumex crispus*
Goodding's black willow	*Salix gooddingii*
Red willow	*Salix lasiandra*
Arroyo willow	*Salix lasiolepis*
Blue elderberry	*Sambucus caerula ssp. nigra*
Valley checkerbloom	*Sidalcea hartwegii*
Blue-eyed grass	*Sisyrinchium bellum*
Canada goldenrod	*Solidago altissima*
California goldenrod	*Solidago velutina ssp. californica*
Bugle hedgenettle	*Stachys ajugoides*
Sonoma hedgenettle	*Stachys stricta*
Santa Barbara stephanomeria	*Stephanomeria elata*
Western mountain aster	*Symphyotrichum spathulatum var. spathulatum*
Spreading hedgeparsley	*Torilis arvensis*
Knotted hedgeparsley	*Torilis nodosa*
Poison-oak	*Toxicodendron diversilobum*
Meadow death camas	*Toxiscordion venenosum var. venenosum*
Goat's beard	*Tragopogon dubius*
Rose clover	*Trifolium hirtum*

Common name	Scientific name
Clover	*Trifolium spp.*
Triplet lily	*Triteleia sp.*
Common mullein	*Verbascum thapsis*
Marsh speedwell	*Veronica scutellata*
Spring vetch	*Vicia sativa*
Vetch	*Vicia sp.*
Narrowleaf mule's ears	*Wyethia angustifolia*

10.0 APPENDIX B – WETLAND DELINEATION FIELD DATA SHEETS

DATA FORM - ROUTINE WETLAND DETERMINATION

Project ID: Stout
Client:
Investigator:
Do normal circumstances exist on the site?
Is it an atypical situation?
Is the area a potential problem area?

Date: 10/15
State: California
County:
Township, Range, Section:
Plant Community: WI
Sample Plot: PIT 1 (WETLAND)

VEGETATION

Tree stratum	% Cover	Dominant?	Indicator status
Shrub stratum	% Cover	Dominant?	Indicator status

Hebaceous stratum	% Cover	Dominant?	Indicator status
Juncus xiph	90	Y	OBL
Hordeum brachyanth	10		

Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 1 of 1 = 100 %

Comments:

HYDROLOGY

Depth of surface water:
Depth to free water in pit:
Depth to saturated soil:

	Primary Indicators:		Secondary Indicators:
	Inundated		Oxidized rhizosphere in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
	Sediment deposits		FAC neutral test
	Drainage patterns in wetlands		Other

Comments:

SOILS

Mapped Soil Unit:
Taxonomy:
Matches Profile?
Drainage Class:

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-3	10Y 3/2	2.5Y 5/6		SILTY CLAY
3-7	10Y 3/2	—	NA	SILTY LOAM
7-8				HARD PAN

Histol	Reducing conditions (test)	Gleyed
Histic epipedon	High organic content surface layer	✓ Organic streaking
Sulfidic odor	✓ Redox concentrations (w/in 10")	Organic pan
Probable aquic moisture regime	Concretions (w/in 3", >2mm)	On hydric soils list

Comments:

WETLAND DETERMINATION

Hydrophytic Vegetation? ✓
Hydric Soils? ✓
Wetland Hydrology? ✓ (CONFINING LAYER, LOCALIZED DEPRESSION)

Is this sample plot within a wetland? Yes

Comments:

DATA FORM - ROUTINE WETLAND DETERMINATION

Project ID: Stout
Client:
Investigator: GEO, TED, TIM
Do normal circumstances exist on the site?
Is it an atypical situation?
Is the area a potential problem area?

Date: 10/15
State: California
County:
Township, Range, Section:
Plant Community:
Sample Plot: PIT 2 (UPLAND)

VEGETATION

Tree stratum	% Cover	Dominant?	Indicator status
NA			
Shrub stratum	% Cover	Dominant?	Indicator status
NA			

Hebaceous stratum	% Cover	Dominant?	Indicator status
MEDUSA HEAD	90	✓	UPL
Plantago lanceolata	5		
Holcus lanatus	5		

Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 0 of 1 = 0 %

Comments:

HYDROLOGY

Depth of surface water: NA
Depth to free water in pit: 78"
Depth to saturated soil: 78"

	Primary Indicators:		Secondary Indicators:
	Inundated		Oxidized rhizosphere in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
	Sediment deposits		FAC neutral test
	Drainage patterns in wetlands		Other

Comments:

SOILS

Mapped Soil Unit:
Taxonomy:
Matches Profile?
Drainage Class:

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-3	10YR 4/4	NA	NA	LOAMY SILT
3-8	"			

	Histol		Reducing conditions (test)		Gleyed
	Histic epipedon		High organic content surface layer		Organic streaking
	Sulfidic odor		Redox concentrations (w/in 10")		Organic pan
	Probable aquic moisture regime		Concretions (w/in 3", >2mm)		On hydric soils list

Comments:

WETLAND DETERMINATION

Hydrophytic Vegetation? N
Hydric Soils? N
Wetland Hydrology? N

Is this sample plot within a wetland? N

Comments:

DATA FORM - ROUTINE WETLAND DETERMINATION

Project ID: STOUT LANE
Client:
Investigator:
Do normal circumstances exist on the site?
Is it an atypical situation?
Is the area a potential problem area?

Date: 10/15/2019
State: California
County:
Township, Range, Section:
Plant Community:
Sample Plot: Pit 3 UPLAND

VEGETATION

Tree stratum	% Cover	Dominant?	Indicator status
Shrub stratum	% Cover	Dominant?	Indicator status

Hebaceous stratum	% Cover	Dominant?	Indicator status
Juncus upland 3	340	Y	FAC
Elymus caput-medusae	40	Y	UPL
Sisyrchinechium bellum	10		
Nassella	5		
Bromus sp.	5		

Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 1 of 2 = 50 %

Comments:

HYDROLOGY

Depth of surface water: n/a
Depth to free water in pit: >5"
Depth to saturated soil: >5"

Primary Indicators:		Secondary Indicators:	
	Inundated		Oxidized rhizosphere in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
	Sediment deposits		FAC neutral test
	Drainage patterns in wetlands		Other

Comments: no indicators

SOILS

Mapped Soil Unit:
Taxonomy:
Matches Profile?
Drainage Class:

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-5	10YR 3/2	NA	NA	CLAY LOAM
5	HARDPAN			

	Histol		Reducing conditions (test)		Gleyed
	Histic epipedon		High organic content surface layer		Organic streaking
	Sulfidic odor		Redox concentrations (w/in 10")		Organic pan
	Probable aquic moisture regime		Concretions (w/in 3", >2mm)		On hydric soils list

Comments: no indicators

WETLAND DETERMINATION

Hydrophytic Vegetation? NO
Hydric Soils? NO
Wetland Hydrology? NO

Is this sample plot within a wetland? NO

Comments:

DATA FORM - ROUTINE WETLAND DETERMINATION

Project ID: _____
Client: _____
Investigator: _____
Do normal circumstances exist on the site? _____
Is it an atypical situation? _____
Is the area a potential problem area? _____

Date: _____
State: California
County: _____
Township, Range, Section: _____
Plant Community: _____
Sample Plot: Pt 4 W2

VEGETATION

Tree stratum	% Cover	Dominant?	Indicator status		Hebaceous stratum	% Cover	Dominant?	Indicator status
none					Juncus	20%	Y	OBL

Shrub stratum	% Cover	Dominant?	Indicator status
none			

Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 1 of 1 = 100 %

Comments:

HYDROLOGY

Depth of surface water: _____
Depth to free water in pit: _____
Depth to saturated soil: _____

Primary Indicators:		Secondary Indicators:	
	Inundated		Oxidized rhizosphere in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
✓	Sediment deposits		FAC neutral test
	Drainage patterns in wetlands		Other

Comments:

SOILS

Mapped Soil Unit: _____
Taxonomy: _____
Matches Profile?
Drainage Class: _____

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-5"	10YR/2/1	none	none	clayey silt

_____ Histol
_____ Histic epipedon
_____ Sulfidic odor
_____ Probable aquic moisture regime

_____ Reducing conditions (test)
_____ High organic content surface layer
_____ Redox concentrations (w/in 10")
_____ Concretions (w/in 3", >2mm)

_____ Gleyed
_____ ✓ Organic streaking
_____ Y Organic pan
_____ On hydric soils list

Comments:

WETLAND DETERMINATION

Hydrophytic Vegetation? Yes
Hydric Soils? No
Wetland Hydrology? Yes

Is this sample plot within a wetland? Y

Comments:

DATA FORM - ROUTINE WETLAND DETERMINATION

Project ID: STOUT LANE
Client:
Investigator:
Do normal circumstances exist on the site?
Is it an atypical situation?
Is the area a potential problem area?

Date: 10/15/2019
State: California
County:
Township, Range, Section:
Plant Community:
Sample Plot: Pit 5 W3

VEGETATION

Tree stratum	% Cover	Dominant?	Indicator status

Shrub stratum	% Cover	Dominant?	Indicator status

Hebaceous stratum	% Cover	Dominant?	Indicator status
Juncus	90	Y	OBL

Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 1 of 1 = 100 %

Comments:

HYDROLOGY

Depth of surface water: 0
Depth to free water in pit: 0
Depth to saturated soil: 10 inches

Primary Indicators:		Secondary Indicators:	
	Inundated		Oxidized rhizosphere in upper 12 in.
✓	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
✓	Drift lines		Local soil survey data
✓	Sediment deposits		FAC neutral test
✓	Drainage patterns in wetlands		Other

Comments:

SOILS

Mapped Soil Unit:
Taxonomy:
Matches Profile?
Drainage Class:

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
1-13"	Gley1 2.5/N	None	N/A	loamy Sand

✓ Histol
Histic epipedon
Sulfidic odor
Probable aquic moisture regime

✓ Reducing conditions (test)
High organic content surface layer
Redox concentrations (w/in 10")
Concretions (w/in 3", >2mm)

✓ Gleyed
Organic streaking
Organic pan
On hydric soils list

Comments:

WETLAND DETERMINATION

Hydrophytic Vegetation? ✓
Hydric Soils? ✓
Wetland Hydrology? ✓

Is this sample plot within a wetland? Yes

Comments:

DATA FORM - ROUTINE WETLAND DETERMINATION

Project ID: Stout
Client:
Investigator:
Do normal circumstances exist on the site?
Is it an atypical situation?
Is the area a potential problem area?

Date: 10-16-19
State: California
County:
Township, Range, Section:
Plant Community: W4
Sample Plot: SE corner

VEGETATION

Tree stratum	% Cover	Dominant?	Indicator status

Shrub stratum	% Cover	Dominant?	Indicator status

Hebaceous stratum	% Cover	Dominant?	Indicator status
Carex	20	Y	OBL
Juncus	20	Y	FAC
Holcus	15	Y	FAC
Eriogonum	10		
Hordeum	5		
Peridendia	3		
Hoita	5		

Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 3 of 3 = 100 %

Comments:

HYDROLOGY

Depth of surface water:
Depth to free water in pit:
Depth to saturated soil:

Primary Indicators:		Secondary Indicators:	
	Inundated		Oxidized rhizosphere in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
	Sediment deposits		FAC neutral test
	Drainage patterns in wetlands		Other

Comments:

SOILS

Mapped Soil Unit:
Taxonomy:
Matches Profile?
Drainage Class:

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture

Histol	Reducing conditions (test)	Gleyed
Histic epipedon	High organic content surface layer	Organic streaking
Sulfidic odor	Redox concentrations (w/in 10")	Organic pan
Probable aquic moisture regime	Concretions (w/in 3", >2mm)	On hydric soils list

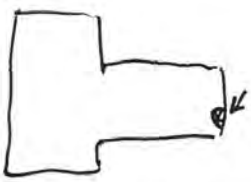
Comments: Confining layer - Localized depression

WETLAND DETERMINATION

Hydrophytic Vegetation? Yes
Hydric Soils? unk
Wetland Hydrology? unk

Is this sample plot within a wetland? Yes

Comments:



DATA SHEET - ROUTINE DETERMINATION: NON-WETLAND WATERS OF US

Project ID: Start
Client:
Investigator:
Do normal circumstances exist on the site?
Is it an atypical situation?
Is the area a potential problem area?

Date: 10-16-19
State: California
County:
Township, Range, Section:
Plant Community:
Sample Plot: Bear Creek C-1

VEGETATION

Species	% Cover	Dominant?	Indicator Status		Species	% Cover	Dominant?	Indicator Status
Scarlet Monkeyflower	5							
Cypress	3							
Artemisia dowy	3							

Width of Riparian Vegetation: –

Comments/Notes:

SOILS

Mapped Soil Unit:
Taxonomy:
Drainage Class:
Matches Profile? On hydric soils list?

Comments/Notes:

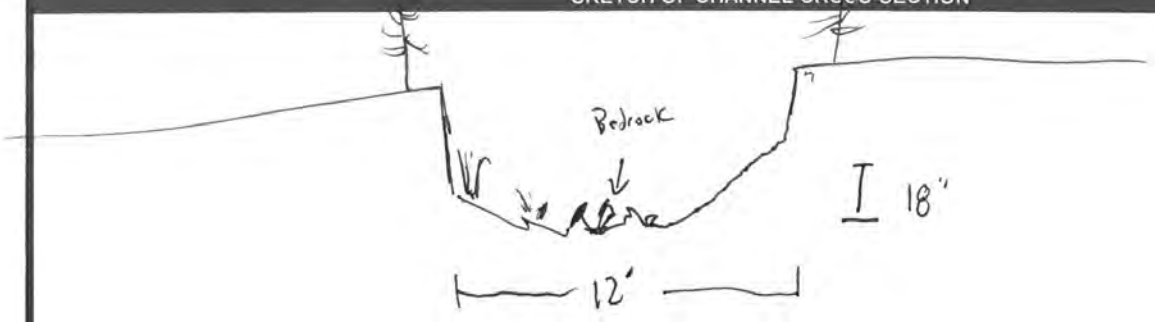
HYDROLOGY

Is water present? No
Depth of surface water: –
Flow rate: n/a
Or depth to saturated soil: –
Is a channel present? Yes
Channel width: 12'

	Ordinary High Water Mark Indicators Present:		
	Inundated		
✓	Shelving	✓	Destruction of vegetation
✓	Water marks / stained leaves	✓	Exposed cobble / bedrock
✓	Drift lines	✓	Litter/debris present
✓	Sediment deposits		Recent bank erosion

Comments/Notes:

SKETCH OF CHANNEL CROSS-SECTION



WATERS OF THE US DETERMINATION

OHWM Present?
Hydrophytic Vegetation?
Wetland Hydrology?

Is this feature a potential Waters of the US?

Comments/Notes:

DATA SHEET - ROUTINE DETERMINATION: NON-WETLAND WATERS OF US

Project ID: STOUT LANE
Client:
Investigator:
Do normal circumstances exist on the site?
Is it an atypical situation?
Is the area a potential problem area?

Date: 10/15/2019
State: California
County:
Township, Range, Section:
Plant Community: C2a
Sample Plot: ISOLATED CHANNEL

VEGETATION

Species	% Cover	Dominant?	Indicator Status		Species	% Cover	Dominant?	Indicator Status
					ELEOCHARIS	5		

Width of Riparian Vegetation:
Comments/Notes: LARGELY DENUDED, [illegible]

SOILS

Mapped Soil Unit:
Taxonomy:
Drainage Class:
Matches Profile? On hydric soils list?
Comments/Notes:

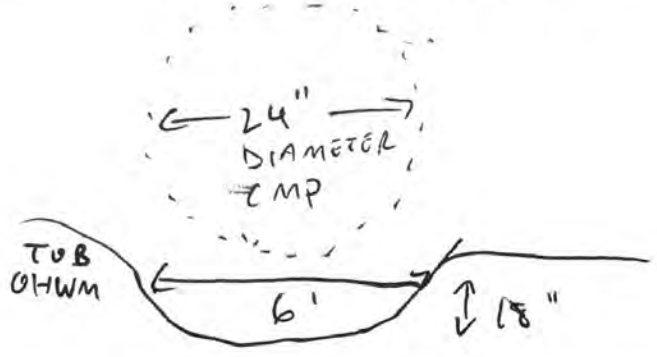
HYDROLOGY

Is water present? N
Depth of surface water:
Flow rate:
Or depth to saturated soil:
Is a channel present? Y
Channel width: 6'

Ordinary High Water Mark Indicators Present:			
✓	Inundated		
	Shelving	✓	Destruction of vegetation
	Water marks / stained leaves		Exposed cobble / bedrock
	Drift lines		Litter/debris present
	Sediment deposits	✓	Recent bank erosion

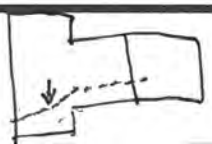
Comments/Notes: ROAD IS A DAM

SKETCH OF CHANNEL CROSS-SECTION



WATERS OF THE US DETERMINATION

OHWM Present? ✓
Hydrophytic Vegetation? NO
Wetland Hydrology? ✓
Is this feature a potential Waters of the US? Y
ISOLATED CHANNEL
Comments/Notes: 24" CMP



DATA SHEET - ROUTINE DETERMINATION: NON-WETLAND WATERS OF US

Project ID: STOUT LANE
Client:
Investigator:
Do normal circumstances exist on the site?
Is it an atypical situation?
Is the area a potential problem area?

Date: 10/15/2019
State: California
County:
Township, Range, Section:
Plant Community:
Sample Plot: wet Meadow Channel C2b

VEGETATION

Species	% Cover	Dominant?	Indicator Status		Species	% Cover	Dominant?	Indicator Status
Carex								
Hordeum								
Perideridia								
Juncus								
Marking Flower								

Width of Riparian Vegetation: —

Comments/Notes: Seasonal Creek flowing through wet meadow

SOILS

Mapped Soil Unit:
Taxonomy:
Drainage Class:
Matches Profile? On hydric soils list?

Comments/Notes:

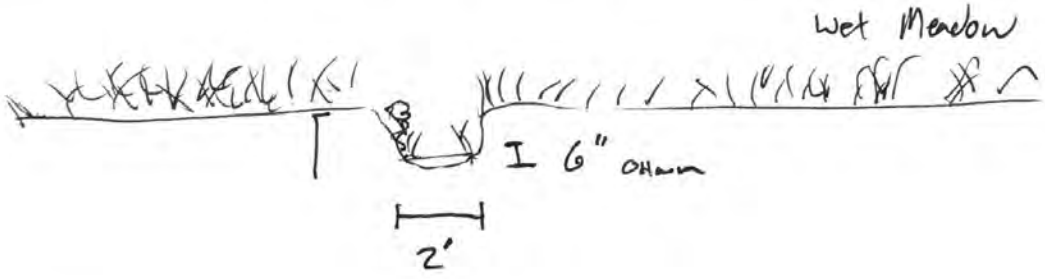
HYDROLOGY

Is water present? No
Depth of surface water: —
Flow rate: n/a
Or depth to saturated soil: —
Is a channel present? Y
Channel width: 2'

	Ordinary High Water Mark Indicators Present:		
	Inundated		
—	Shelving	—	Destruction of vegetation
—	Water marks / stained leaves	—	Exposed cobble / bedrock
—	Drift lines	—	Litter/debris present
—	Sediment deposits		Recent bank erosion

Comments/Notes: Channel occasionally flattens, then continues downstream to Bean Creek

SKETCH OF CHANNEL CROSS-SECTION

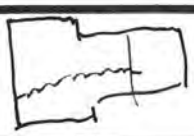


WATERS OF THE US DETERMINATION

OHWM Present? Y
Hydrophytic Vegetation? Y
Wetland Hydrology? Y

Is this feature a potential Waters of the US? Yes

Comments/Notes:



DATA SHEET - ROUTINE DETERMINATION: NON-WETLAND WATERS OF US

Project ID: Stout Lane
Client:
Investigator:
Do normal circumstances exist on the site?
Is it an atypical situation?
Is the area a potential problem area?

Date: 10/15/2019
State: California
County:
Township, Range, Section:
Plant Community:
Sample Plot: Class II NW C3

VEGETATION

Species	% Cover	Dominant?	Indicator Status		Species	% Cover	Dominant?	Indicator Status
Rubus	20	Y	FAC					
Mimulus	10	Y	OBL					
Epilobium	5	Y	OBL					
Stachys	15	Y	FAC					

Width of Riparian Vegetation: –

Comments/Notes: Several Ephemeral Channels in NW portion

SOILS

Mapped Soil Unit:
Taxonomy:
Drainage Class:
Matches Profile? On hydric soils list?

Comments/Notes:

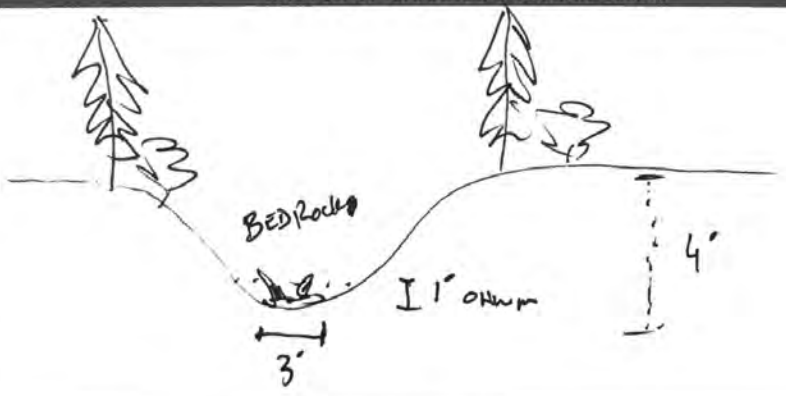
HYDROLOGY

Is water present? N
Depth of surface water: –
Flow rate: –
Or depth to saturated soil: –
Is a channel present? Y
Channel width: 3'

Ordinary High Water Mark Indicators Present:			
	Inundated		
	Shelving	~	Destruction of vegetation
~	Water marks / stained leaves	~	Exposed cobble / bedrock
~	Drift lines	~	Litter/debris present
~	Sediment deposits		Recent bank erosion

Comments/Notes:

SKETCH OF CHANNEL CROSS-SECTION

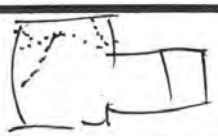


WATERS OF THE US DETERMINATION

OHWM Present? Y
Hydrophytic Vegetation? Y
Wetland Hydrology? Y

Is this feature a potential Waters of the US? Yes

Comments/Notes:



DATA SHEET - ROUTINE DETERMINATION: NON-WETLAND WATERS OF US

Project ID: Stout
Client:
Investigator:
Do normal circumstances exist on the site?
Is it an atypical situation?
Is the area a potential problem area?

Date: 10-16-19
State: California
County:
Township, Range, Section:
Plant Community:
Sample Plot: S- trib to Class II C4

VEGETATION

Species	% Cover	Dominant?	Indicator Status		Species	% Cover	Dominant?	Indicator Status
Salix	75	Y	Obl					
Clematis	5							
Artemisia	10							
Holcus	5							
Mixs	5							

Width of Riparian Vegetation: 30'

Comments/Notes:

SOILS

Mapped Soil Unit:
Taxonomy:
Drainage Class:
Matches Profile? On hydric soils list?

Comments/Notes:

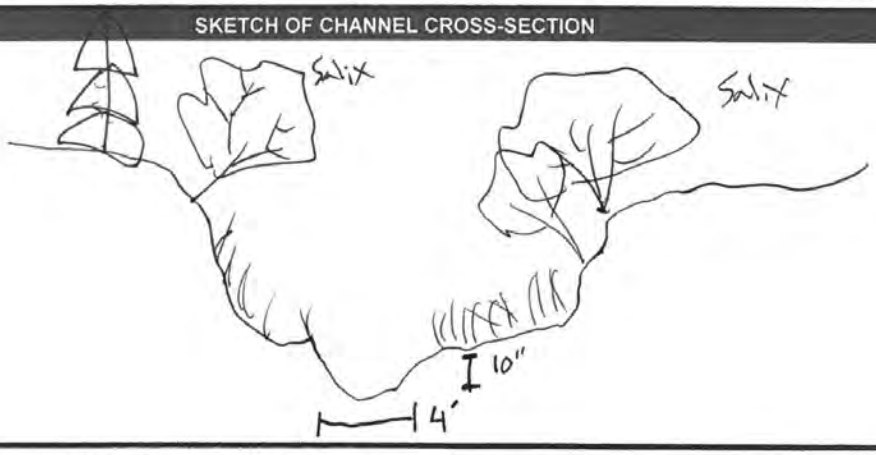
HYDROLOGY

Is water present? N
Depth of surface water:
Flow rate: n/a
Or depth to saturated soil:
Is a channel present? Y
Channel width: 4'

Ordinary High Water Mark Indicators Present:			
	Inundated		
/	Shelving	//	Destruction of vegetation
/	Water marks / stained leaves		Exposed cobble / bedrock
/	Drift lines	/	Litter/debris present
/	Sediment deposits		Recent bank erosion

Comments/Notes:

SKETCH OF CHANNEL CROSS-SECTION

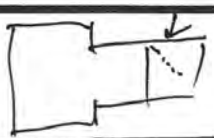


WATERS OF THE US DETERMINATION

OHWM Present?
Hydrophytic Vegetation?
Wetland Hydrology?

Is this feature a potential Waters of the US?

Comments/Notes:



11.0 APPENDIX C – PHOTOS FROM FIELD DELINEATION


Date & Time: Tue, Oct 15, 2019, 12:59:20 PDT
Position: +037.775287° / -120.171024°
Altitude: 3204ft
Datum: WGS-84
Azimuth/Bearing: 051° N51E, 0907mils (True)
Elevation Angle: -15.2°
Horizon Angle: +00.3°
Zoom: 1X


Position: +037.776042° / -120.171205°
Altitude: 3295ft
Datum: WGS-84
Azimuth/Bearing: 003° N03E, 0053mils (True)
Elevation Angle: -25.3°
Horizon Angle: +01.4°
Zoom: 1X


Horizon Angle: -01.2°


Date & Time: Tue, Oct 15, 2019, 12:54:31 PDT
Position: +037.776148° / -120.172942°
Altitude: 3297ft
Datum: WGS-84
Azimuth/Bearing: 101° S73E, 1602mils (True)
Elevation Angle: -06.4°
Horizon Angle: +00.3°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 13:02:54 PDT
Position: +037.775946° / -120.170921°
Altitude: 3317ft
Datum: WGS-84
Azimuth/Bearing: 353° N07W, 8276mils (True)
Elevation Angle: -25.1°
Horizon Angle: +12.0°
Zoom: 1X


Datum: WGS-84
Azimuth/Bearing: 249° S69W, 4427mils (True)
Elevation Angle: -11.1°
Horizon Angle: -00.1°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 12:54:29 PDT
Position: +037.774085° / -120.173009°
Altitude: 3310ft
Datum: WGS-84
Azimuth/Bearing: 071° N71E, 1262mils (True)
Elevation Angle: -09.8°
Horizon Angle: +00.1°
Zoom: 1X


Position: +037.775551° / -120.171818°
Altitude: 3246ft
Datum: WGS-84
Azimuth/Bearing: 332° N28W, 5902mils (True)
Elevation Angle: -11.2°
Horizon Angle: +00.2°
Zoom: 1X


Position: +037.772518° / -120.173191°
Altitude: 3311ft
Datum: WGS-84
Azimuth/Bearing: 331° N29W, 5886mils (True)
Elevation Angle: -15.8°
Horizon Angle: +00.1°
Zoom: 1X


Azimuth/Bearing: 237° S57W 4213mils (True)
Elevation Angle: -16.4°
Horizon Angle: +02.8°
Zoom: 1X


Azimuth/Bearing: 293° N67W 5209mils (True)
Elevation Angle: +00.8°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 14:04:02 PDT
Azimuth/Bearing: 251° S71W 4462mils (True)
Elevation Angle: -59.7°


Azimuth/Bearing: 307° N58W 5369mils (True)
Zoom: 1X


Position: +037.772614° / -120.171
Altitude: 3338ft
Azimuth/Bearing: 220° S40W 3913mils (True)
Elevation Angle: -07.4°
Horizon Angle: -01.3°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 14:39:49 PDT
Position: +037.771934° / -120.176214°
Elevation Angle: -17.2°
Horizon Angle: +01.4°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 15:22:58 PDT
Position: +037.772506° / -120.172514°
Altitude: 3117ft
Datum: WGS-84
Azimuth/Bearing: 009° N09E 0160mils (True)
Elevation Angle: -55.6°
Horizon Angle: +02.6°
Zoom: 1X


Datum: WGS-84
Azimuth/Bearing: 299° N61W 5316mils (True)
Elevation Angle: -02.7
Zoom: 1X

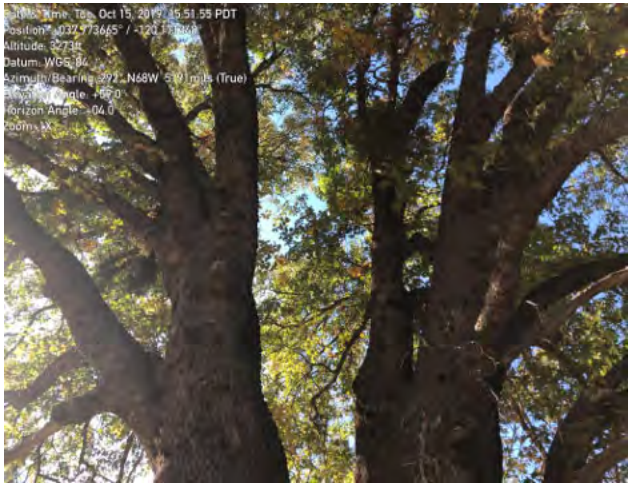

Date & Time: Tue, Oct 15, 2019, 10:37:16 PDT
Altitude: 3314ft
Datum: WGS-84
Zoom: 1X


Datum: WGS-84
Elevation Angle: -05.1°
Zoom: 1X


Datum: WGS-84
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 10:36:53 PDT
Datum: WGS-84
Zoom: 1X


Datum: WGS-84
Azimuth/Bearing: 307° N53W 5458mils (True)
Elevation Angle: -00.9°
Horizon Angle: +00.1
Zoom: 1X


Datum: WGS-84
Zoom: 1X


Datum: WGS-84
Elevation Angle: -06.3°
Horizon Angle: +00.7
Zoom: 1X


Datum: WGS-84
Azimuth/Bearing: 353° N07W 6226mils (True)
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 11:08:08 PDT
Position: +037.776725° / -120.174502°
Altitude: 3345ft
Datum: WGS-84
Azimuth/Bearing: 153° S27E 2720mils (True)
Elevation Angle: -31.1°
Horizon Angle: -00.7°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 11:14:43 PDT
Position: +037.777645° / -120.175668°
Altitude: 3378ft
Datum: WGS-84
Azimuth/Bearing: 281° N79W 4996mils (True)
Elevation Angle: +09.1°
Horizon Angle: -00.2°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 10:39:13 PDT
Position: +037.776638° / -120.171777°
Altitude: 3322ft
Datum: WGS-84
Azimuth/Bearing: 097° S83E 1724mils (True)
Elevation Angle: -04.6°
Horizon Angle: -00.6°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 11:04:44 PDT
Position: +037.777178° / -120.174844°
Altitude: 3403ft
Datum: WGS-84
Azimuth/Bearing: 298° N62W 5298mils (True)
Elevation Angle: -18.9°
Horizon Angle: -02.2°
Zoom: 1X

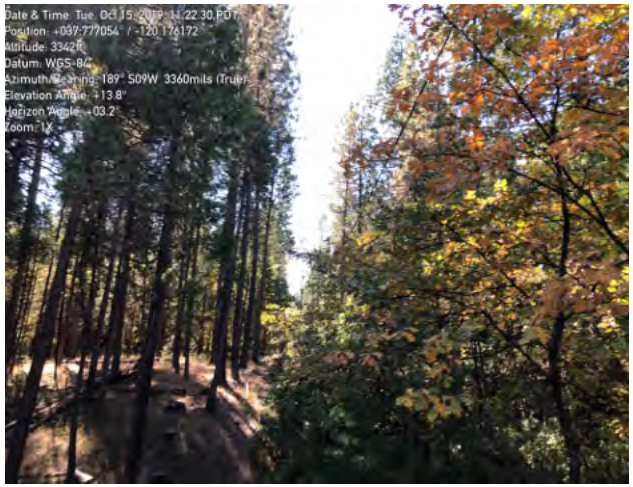

Date & Time: Tue, Oct 15, 2019, 11:14:43 PDT
Position: +037.777644° / -120.175805°
Altitude: 3433ft
Datum: WGS-84
Azimuth/Bearing: 284° N76W 5069mils (True)
Elevation Angle: +18.6°
Horizon Angle: -00.1°
Zoom: 1X


Elevation Angle: +01.7°
Horizon Angle: +01.7°
Zoom: 1X


Azimuth/Bearing: 090° S90E 1600mils (True)
Horizon Angle: -00.3°


Date & Time: Tue, Oct 15, 2019, 11:15:43 PDT
Position: +037.777862° / -120.175949°
Altitude: 3307ft
Datum: WGS-84
Azimuth/Bearing: 310° N50W 5511mils (True)
Elevation Angle: -01.0°
Horizon Angle: +03.8°
Zoom: 1X


Elevation Angle: -13.1°
Horizon Angle: -00.9°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 11:22:30 PDT
Position: +037.777054° / -120.176172°
Altitude: 3342ft
Datum: WGS-84
Azimuth/Bearing: 189° S09W 3360mils (True)
Elevation Angle: +13.8°
Horizon Angle: +03.2°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 11:15:41 PDT
Position: +037.777855° / -120.175958°
Altitude: 3307ft
Datum: WGS-84
Azimuth/Bearing: 306° N14W 4941mils (True)
Elevation Angle: +05.7°
Horizon Angle: +03.7°
Zoom: 1X


Elevation Angle: -07.1°
Horizon Angle: +01.9°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 11:22:22 PDT
Position: +037.777022° / -120.176156°
Altitude: 3319ft
Datum: WGS-84
Azimuth/Bearing: 259° S79W 4604mils (True)
Elevation Angle: +59.1°
Horizon Angle: -00.7°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 11:14:49 PDT
Position: +037.777517° / -120.175682°
Altitude: 3344ft
Datum: WGS-84
Azimuth/Bearing: 094° S86E 1671mils (True)
Elevation Angle: +04.7°
Horizon Angle: -01.7°
Zoom: 1X


Position: +037.777869° / -120.175968°
Altitude: 3309ft
Datum: WGS-84
Azimuth/Bearing: 123° S27E 2720mils (True)
Elevation Angle: -15.0°
Horizon Angle: +01.7°
Zoom: 1X


Position: +037.777662° / -120.176008°
Altitude: 3287ft
Datum: WGS-84
Azimuth/Bearing: 206° S26W 3662mils (True)
Elevation Angle: -07.8°
Horizon Angle: +01.0°
Zoom: 1X


Datum: WGS-84
Azimuth/Bearing: 339° N21W 5829mils (True)
Elevation Angle: -25.0°
Horizon Angle: -00.3
Zoom: 1X


Datum: WGS-84
Azimuth/Bearing: 033° N33E 2587mils (True)
Elevation Angle: -08.6
Horizon Angle: -03.2
Zoom: 1X


Datum: WGS-84
Azimuth/Bearing: 335° N25W 5950mils (True)
Horizon Angle: -00.2
Zoom: 1X


Datum: WGS-84
Azimuth/Bearing: 225° S45W 4000mils (True)
Zoom: 1X


Zoom: 1X


Datum: WGS-84
Azimuth/Bearing: 207° S27W 3680mils (True)
Horizon Angle: -03.6
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 11:54:20 PDT
Position: +037.777325° / -120.174421°
Altitude: 3282ft
Datum: WGS-84
Azimuth/Bearing: 61° N17E 1002mils (True)
Elevation Angle: +04.4°
Horizon Angle: -00.9°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 11:54:03 PDT
Position: +037.777344° / -120.174418°
Altitude: 3295ft
Datum: WGS-84
Azimuth/Bearing: 342° N18W 1080mils (True)
Elevation Angle: -19.8°
Horizon Angle: -00.4°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 11:55:44 PDT
Position: +037.777453° / -120.174018°
Altitude: 3296ft
Datum: WGS-84
Azimuth/Bearing: 071° N71E 1262mils (True)
Elevation Angle: -00.5°
Horizon Angle: -00.8°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 12:02:04 PDT
Position: +037.777115° / -120.173992°
Altitude: 3294ft
Datum: WGS-84
Azimuth/Bearing: 145° S35E 2578mils (True)
Elevation Angle: -51.5°
Horizon Angle: -00.5°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 11:53:23 PDT
Position: +037.777253° / -120.174109°
Altitude: 3266ft
Datum: WGS-84
Azimuth/Bearing: 334° N26W 5938mils (True)
Elevation Angle: -12.2°
Horizon Angle: +00.4°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 12:02:28 PDT
Position: +037.777115° / -120.173992°
Altitude: 3289ft
Datum: WGS-84
Azimuth/Bearing: 148° S32E 2044mils (True)
Elevation Angle: -20.3°
Horizon Angle: -01.8°
Zoom: 1X


Datum: WGS-84
Elevation Angle: +00.0°
Horizon Angle: +00.6°
Zoom: 1X


Datum: WGS-84
Elevation Angle: -09.5°
Horizon Angle: -00.2°
Zoom: 1X


Datum: WGS-84
Elevation Angle: -18.2°
Horizon Angle: -02.1°
Zoom: 1X


Datum: WGS-84
Elevation Angle: -01.5°
Horizon Angle: +01.4°
Zoom: 1X


Datum: WGS-84
Elevation Angle: -07.1°
Horizon Angle: -00.3°
Zoom: 1X


Elevation Angle: -07°
Horizon Angle: +00.1°
Zoom: 1X


Elevation Angle: -35.4°
Horizon Angle: +02.1°
Zoom: 1X


Datum: WGS-84
Elevation Angle: -19.5°
Horizon Angle: -00.1°
Zoom: 1X


Datum: WGS 84
Elevation Angle: -29.5°
Horizon Angle: -01.4°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 12:26:21 PDT
Position: +037.777458° / -120.171817°
Altitude: 3329ft
Datum: WGS-84
Azimuth/Bearing: 347° N13W 169mils (True)
Elevation Angle: -02.4°
Horizon Angle: -01.7°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 12:53:35 PDT
Position: +037.774183° / -120.173175°
Altitude: 3427ft
Datum: WGS-84
Azimuth/Bearing: 138° S42E 2453mils (True)
Elevation Angle: -17.5°
Horizon Angle: +02.9°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 12:24:17 PDT
Altitude: 3258ft
Datum: WGS-84
Azimuth/Bearing: 077° N73E 1369mils (True)
Elevation Angle: -50.8°
Horizon Angle: +04.0°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 12:29:28 PDT
Position: +037.776853° / -120.171429°
Altitude: 3326ft
Datum: WGS-84
Azimuth/Bearing: 252° S72W 4480mils (True)
Elevation Angle: -17.6°
Horizon Angle: -00.5°
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 12:51:32 PDT
Position: +037.774341° / -120.173128°
Altitude: 3450ft
Datum: WGS-84
Azimuth/Bearing: 324° N36W 5760mils (True)
Elevation Angle: -07.5°
Horizon Angle: +02.4°
Zoom: 1X


Position: +037.777341° / -120.171817°
Altitude: 3265ft
Datum: WGS-84
Azimuth/Bearing: 186° S06W 3307mils (True)
Elevation Angle: -15.7°
Horizon Angle: +02.0°
Zoom: 1X


Azimuth/Bearing: 210° S30W 3906mils (True)
Zoom: 1X


Date & Time: Tue, Oct 15, 2019, 12:51:25 PDT
Position: +037.776683° / -120.173087°
Altitude: 3408ft
Datum: WGS-84
Azimuth/Bearing: 140° S40E 2489mils (True)
Elevation Angle: -14.8°
Horizon Angle: +00.5°
Zoom: 1X