Appendix 2 Cover Sheet

BOTANICAL REPORT OF SPECIAL STATUS NATIVE PLANT POPULATIONS AND NATURAL COMMUNITIES

APN: 105-101-011 & 104-232-005

1414 Chambers Road
Petrolia, CA 95558

Prepared For:

Cisco Farms, LLC
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Prepared by:

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Date Prepared:

September 21st, 2021

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Summary Information

Legal description:	Portion of section 2 of T2S, R2W, H.B.&M.
APN:	105-101-011 & 104-232-005
USGS 7.5' Quad:	Petrolia (4012433)
Parcel size:	436 Acres
Dates of survey:	March 21st and June 21st, 2021
Surveyed by:	Georgia Hamer and Sarah Mason
Field survey effort:	7 hours
Results:	**No CRPR 1 or 2 plants were observed**

Introduction, Background, and Project Understanding

Purpose and Need

This botanical survey report was prepared to assess potential impacts to botanical resources and summarizes the results of a survey conducted in Humboldt County near Petrolia, California (APN: 105-101-011 and 104-232-005). The survey was performed to identify special status plants and sensitive plant communities that could be impacted by operations associated with the cultivation of cannabis within the parcels in accordance with the California Environmental Quality Act (CEQA) using the California Department of Fish and Wildlife's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018).

Project Description and Setting

The proposed project is for approximately 5 acres of cannabis cultivation, 3 acres of full sun outdoor and 2 acres of greenhouses, within two parcels totaling to 436 acres. The land was historically utilized for grazing and is dominated by several invasive grass species.

The parcel address is located at 1414 Chambers Road, Petrolia, CA, 95558-0029. The parcels are approximately 1.8 miles east of downtown Petrolia, California within the Petrolia USGS 7.5-minute quadrangle (Quad code: 4012433), section 2, T2S, R2W, H.B.&M. The center location of the project area is 40°19'34.91" N 124°15'51.51"W at an elevation of 289 feet (88 meters) above sea level (Google Earth Pro, 2021).

Soil, Topography, and Hydrology

Data from *Web Soil Survey* for the project area do not indicate any unique soil types that would provide habitat for rare plants such as serpentinite or peat.

The project area is situated within the lower foothills of the North Coast Ranges approximately 1.0 mile north of the Mattole River. The project area lies within the Mill Creek watershed which drains into the Pacific Ocean via the Mattole River. Refer to Figure 1 (Appendix C) for locator map.

The project area is on a very slight west facing aspect ranging from ~260 to ~315 feet in elevation.

Definitions

Special Status Plants and Plant Communities

Special status plants include taxa that are listed under the Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA) in addition to plants which meet the definition of rare or endangered under the California Environmental Quality Act (CEQA). CDFW recommends that plants on California Rare Plant Ranks (CRPR) Lists 1A (presumed extinct or extirpated), 1B (rare, threatened, or endangered in California and elsewhere), 2A (presumed extirpated) and 2B (rare, threatened, or endangered in California but more common elsewhere), or other species that warrant consideration based on local or biological significance, be addressed during California Environmental Quality Act (CEQA) review of proposed projects. Plants of rank 3 and 4, which are under review and watch lists respectively, are addressed by Naiad Biological Consulting, and may warrant consideration under CEQA if potential or cumulative impacts to the plant exist.

CDFW's natural community rarity rankings follow NatureServes's 2012 *NatureServe Conservation Status Assessment: Methodology for Assigning Ranks*, in which all alliances are listed with a global (G) and (S) rank. NCSC are those natural communities that are ranked S1 to S3 (CDFW, 2020), where 1 is critically imperiled, 2 is imperiled, and 3 is vulnerable. However, they may not warrant protection under CEQA unless they are considered high quality. Human disturbance, invasive species, logging, and grazing are common factors considered when judging whether the stand is high quality and warrants protection.

Methods

Pre-Site Visit Data Compilation and Preparation

Prior to conducting the field surveys, the following database information was reviewed to determine the location and types of botanical resources that possibly exist in the survey area. This pre-field investigation included searches of the California Natural Diversity Database (CNDDB, 2021) and the California Native Plant Society's *Inventory of Rare and Endangered Plants* (CNPS, 2021). This list includes CRPR (California Rare Plant Rank) 1 and 2 plants that have been observed within a 9-quad search centered on the Petrolia quadrangle. Because this quadrangle is coastal, only 7 quadrangles lie within the 9-quad search. USGS quadrangles within the search area include: Buckeye Mtn. (4012432), Cape Mendocino (4012444), Capetown (4012443), Cooskie Creek (4012423), Petrolia (4012433), Shubrick Peak (4012422), and Taylor Peak (4012442). The results of the project scoping are presented below in Table 1 (Appendix A).

Botanical Field Survey and Habitat Investigation

The early season, March 21st, botanical field survey for this project was completed by Georgia Hamer. Georgia holds a BS in Biology with a concentration in Ecology from Humboldt State University (HSU). Georgia has worked professionally as a Botanist for the Native Land Trust of New England, the Lakeview, OR district Bureau of Land Management (BLM), and for the last 3 years at Pacific Watershed Associates in Humboldt County. Georgia specializes in botanical inventories, environmental restoration plans, and rare plant identification and protection.

The late season, June 21st, botanical field survey for this project was completed by Sarah Mason. Sarah holds a BS in Botany from Humboldt State University. Sarah has worked as an assistant botanist and biologist with Caltrans, as a Botanical Technician for the Klamath and Bitterroot National Forests, and is currently working towards receiving her MSc in Biology with a concentration in bumblebee ecology. Sarah has experience in rare plant identification, invasive species removal, protection and monitoring of rare plants, and teaching plant taxonomy at the university level.

Surveys were floristic in nature and conducted in a manner consistent with the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018). Plants were identified to the lowest taxonomic level necessary to ensure that they were not a species of concern. Plants not identifiable in the field were identified off site with the use of *The Jepson Manual, Vascular Plants of California*. Other resources used to identify plants can be found in the reference section towards the end of this report.

Botanical surveys were conducted throughout the areas proposed for cultivation operations and the associated road system. Surveys were conducted in an intuitive meander focused on areas likely to provide habitat for rare plant species and/or potentially affected (directly or indirectly) by cultivation operations. These areas include but are not limited to: existing permanent and seasonal roads, new road construction, road points and crossings, forest openings (i.e., meadows, landings, and cut banks), springs and watercourses. Refer to Figure 2 (Appendix C) for the survey routes.

Results

Habitats Observed

No special-status vegetation communities or habitats were observed during the botanical survey of the project area. The project area habitat is typical of valley and foothill grasslands and coastal prairie within the lower foothills of the Northern Coast Ranges. The surrounding areas are typical of North Coast coniferous forest and mixed evergreen forest, dominated by Douglas-fir (*Pseudotsuga menziesii*) and tanoak (*Notholithocarpus densiflorus*). There is a small stretch of riparian woodland, where a portion of Mill creek runs through, just south of the project area and along the road leading to the pasture. There is no canopy or shrub layer within the project area. Some native grasses are present, including *Festuca idahoensis,* but no sensitive natural communities could be established during surveys due to the large amount of invasive grasses present, consistent with historic grazing. No watercourses exist within the project area. See figures 3, 4, and 5 (Appendix D) for example photos of project area and habitats present.

Species Observed

No CRPR 1 or 2 plants were encountered in the project area. *Hesperocyparis macrocarpa* (Monterey cypress), a CRPR of 1B.2 in its natural range, was observed during surveys but is believed to be a planted ornamental and should not be impacted by cultivation operations. See figure 4 (Appendix D) for photo of planted Monterey cypress.

Refer to Table 2 (Appendix B) for a list of species observed in the project area. A total of 82 plant taxa were observed in the project area, of which approximately 48% are non-native and 27% are invasive. Several invasive grass species, such as slender wild oat (*Avena barbata*), Italian rye grass (*Festuca perennis*), and soft chess (*Bromus hordeaceus*), dominate the project area.

Conclusion and Discussion

Conclusion

Results of the botanical field survey indicate that negative impacts to sensitive species or sensitive habitats will not occur as a result of the development of cannabis cultivation at the particular site investigated and surveyed.

Although no listed species were observed during the field survey, it is possible that previous ground disturbances, existing drought conditions, which may alter bloom times and durations, as well as herbivory by deer could have affected the survey results.

Recommendations

Due to the low quality of habitat, from historic grazing and high numbers of invasive grasses present, no sensitive plant species, communities, or habitats were encountered during the botanical field survey. It is not expected that cultivation operations will impact habitats further. No further botanical surveys are recommended.

References

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Appendix A. Results from database search

Table 1. Target special-status plants of the project area

Petrolia and surrounding 7.5 min quadrangles							
Scientific Name	**Common Name**	**CRPR**	**Bloom Period**	**Lifeform**	**Habitat**	**Micro Habitat**	**Elevation (m)**
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	1B.2	Mar-Jun	annual herb	Coastal Strand, Northern Coastal Scrub	dunes, coastal	0 - 215 meters
Layia carnosa	beach layia	1B.1	Mar-Jul	annual herb	Coastal Strand, Northern Coastal Scrub (sandy)	dunes, coastal	0 - 60 meters
Packera bolanderi var. *bolanderi*	seacoast ragwort	2B.2	May-Jul	perennial rhizomatous herb	Coastal scrub; North Coast coniferous forest	Sometimes roadsides.	30 - 650 meters
Erysimum concinnum	bluff wallflower	1B.2	Feb-Jul	annual / perennial herb	Coastal bluff scrub, coastal dunes, coastal prairie	dunes, coastal	0 - 185 meters
Astragalus pycnostachyus var. *pycnostachyus*	coastal marsh milk-vetch	1B.2	(Apr)Jun-Oct	perennial herb	Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt, streamsides)	dunes, coastal	0 - 30 meters
Romanzoffia tracyi	Tracy's romanzoffia	2B.3	Mar-May	perennial herb	Coastal bluff scrub. Coastal scrub	rocky	15 -30 meters
Sisyrinchium hitchcockii	Hitchcock's blue-eyed grass	1B.1	Jun	perennial rhizomatous herb	Cismontane woodland (openings), Valley and foothill grassland	Known in CA from only one occurrence near Cape Ridge.	NA
Erythronium oregonum	giant fawn lily	2B.2	Mar-Jun	perennial bulbiferous herb	Cismontane woodland	sometimes serpentinite, rocky, openings; Meadows and seeps	100 - 1150 meters
Erythronium revolutum	coast fawn lily	2B.2	Mar-Jul	perennial bulbiferous herb	Broadleafed upland forest; North Coast coniferous forest	Mesic, streambanks; Bogs and fens	0 - 1600 meters
Sidalcea malviflora ssp. *patula*	Siskiyou checkerbloom	1B.2	May-Aug	perennial rhizomatous herb	Coastal bluff scrub; Coastal prairie; North Coast coniferous forest	often roadcuts.	15 - 880 meters

Montia howellii	Howell's montia	2B.2	Mar-May	annual herb	North Coast coniferous forest	Vernally mesic, sometimes roadsides; Meadows and seeps; Vernal pools	0 - 835 meters
Oenothera wolfii	Wolf's evening-primrose	1B.1	May-Oct	perennial herb	Coastal bluff scrub, Coastal dunes, Coastal prairie, Lower montane coniferous forest	sandy, usually mesic.	3 - 800 meters
Piperia candida	white-flowered rein orchid	1B.2	May-Sep	perennial herb	Broadleafed upland forest; Lower montane coniferous forest; North Coast coniferous forest	sometimes serpentinite	30 - 1310 meters
Castilleja litoralis	Oregon coast paintbrush	2B.2	Jun-Jul	perennial herb (hemiparasitic)	Coastal bluff scrub, Coastal dunes, Coastal scrub	Sandy	15 - 100 meters
Gilia capitata ssp. *pacifica*	Pacific gilia	1B.2	Apr-Aug	annual herb	Coastal bluff scrub; Chaparral (openings); Coastal prairie; Valley and foothill grassland	NA	5 - 1665 meters
Gilia millefoliata	dark-eyed gilia	1B.2	Apr - Jul	annual herb	Coastal Dunes	Sandy	0 - 30 meters
Polemonium carneum	Oregon polemonium	2B.2	Apr-Sep	perennial herb	Coastal prairie, Coastal scrub, Lower montane coniferous forest	NA	0 - 1830 meters

Appendix B. Plant Species Observed

Table 2. List of plant species encountered during surveys

Genus	Common Name	Origin
Trees		
Abies grandis	grand fir	Native
Alnus rubra	red alder	Native
Arbutus menziesii	Pacific madrone	Native
Hesperocyparis macrocarpa	Montery cypress	Native (planted)
Notholithocarpus densiflorus	tan aok	Native
Picea sitchensis	sitka spruce	Native
Pseudotsuga menziesii	Douglas-fir	Native
Sequoia sempervirens	coast redwood	Native
Tsuga heterophylla	Western hemlock	Native
Umbellularia californica	bay laurel	Native
Shrubs		
Baccharis pilularis	coyote brush	Native
Ceanothus thrysiflorus	blueblossom	Native
Frangula californica	coffee berry	Native
Genista monspessulana	French broom	Cal-IPC High
Lonicera hispidula	pink honeycuckle	Native
Oemleria cerasiformis	oso berry	Native
Ribes bracteosum	stink currant	Native
Rosa pisocarpa	cluster rose	Native
Rubus parviflus	thimble berry	Native
Rubus ursinus	California blackberry	Native
Sambucus racemosa	red elderberry	Native
Toxicodendron diversilobum	poison oak	Native
Grass & Graminoids		
Agrostis stolonifera	creeping bentgrass	Cal-IPC Limited
Avena barbata	slender oat	Cal-IPC Moderate
Cynosurus echinatus	dogtail grass	Cal-IPC Moderate
Festuca idahoensis	Idaho fescue	Native
Holcus lanatus	velvet grass	Cal-IPC Moderate
Poa annua	annual bluegrass	Non-native
Briza maxima	rattlesnake grass	Cal-IPC Limited
Aira caryophyllea	silver hair grass	Non-native
Festuca perennis	Italian rye grass	Cal-IPC Moderate
Anthoxanthum odoratum	sweet vernal grass	Cal-IPC Limited
Hordeum marinum	Mediterranean barley	Cal-IPC Moderate
Bromus hordeaceus	soft chess	Cal-IPC Limited
Festuca subuliflora	crinkle-awn fescue	Native
Poa pratensis	Kentucky blue grass	Cal-IPC Limited
Bromus diandrus	ripgut brome	Cal-IPC Moderate
Dactylis glomerata	orchard grass	Cal-IPC Limited

Luzula subsessilis	Pacific woodrush	Native
Forbs		
Adenocaulon bicolor	trail plant	Native
Aquilegia formosa	Western columbine	Native
Bellis perennis	English daisy	Non-native
Cichorium intybus	chicory	Non-native
Clinopodium douglasii	yerba buena	Native
Conium maculatum	poison hemlock	Cal-IPC Moderate
Crepis capillaris	hawksbeard	Non-native
Daucus carota	Queen Anne's lace	Non-native
Digitalis purpurea	foxglove	Cal-IPC Limited
Erodium botrys	long beaked filaree	Non-native
Galium aparine	goose grass	Native
Galium muricatum	Humboldt bedstraw	Native
Geranium molle	crane's bill geranium	Non-native
Heuchera micrantha	alumroot	Native
Hypochaeris glabra	smooth cat's ear	Cal-IPC Limited
Hypochaeris radicata	rough cat's ear	Cal-IPC Moderate
Iris sp.	Iris	Native
Lisichiton americanus	yellow skunk cabbage	Native
Lupinus bicolor	annual lupine	Native
Lysimachia arvensis	scarlet pimpernel	Non-native
Marah oregana	man root	Native
Matricaria discoidea	pineapple weed	Native
Mentha pulegium	pennyroyal	Cal-IPC Moderate
Osmorhiza berteroi	sweet cicely	Native
Oxalis corniculata	creeping wood sorrel	Non-native
Plantago lanceolata	English plantain	Cal-IPC Limited
Rumex acetosella	sheep sorrel	Cal-IPC Limited
Rumex crispus	curly dock	Cal-IPC Moderate
Sanicula crassicaulis	Pacific sanicle	Native
Scrophularia californica	California bee plant	Native
Silybym marianum	milk thistle	Cal-IPC Limited
Spergula arvensis	corn spurry	Non-Native
Stachys bullata	Southern hedge nettle	Native
Stellaria media	chickweed	Non-native
Torilis nodosa	short sock-destroyer	Non-native
Trifolium dubium	little hop clover	Non-native
Trifolium repens	white clover	Non-native
Vicia sativa	spring vetch	Non-native
Ferns & Allies		
Equisetum arvense	common horsetail	Native
Pentagramma triangularis	gold back fern	Native
Polystichum munitum	Western swordfern	Native
Pteridium aquilinum	Western bracken fern	Native

Appendix C. Maps

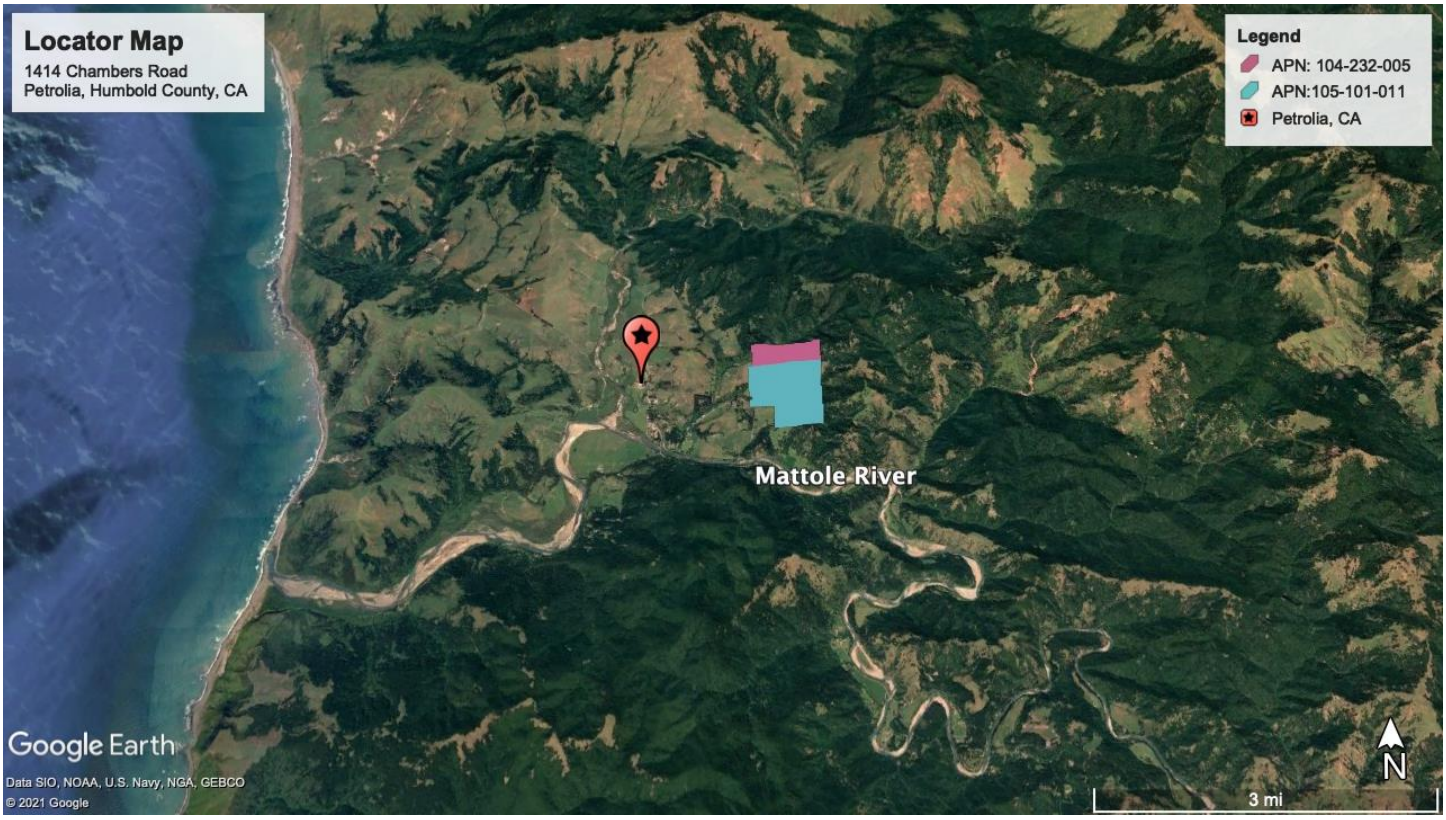

Figure 1. Locator Map of Project Area (blue and pink polygons) and the nearest town of Petrolia, CA (red star).

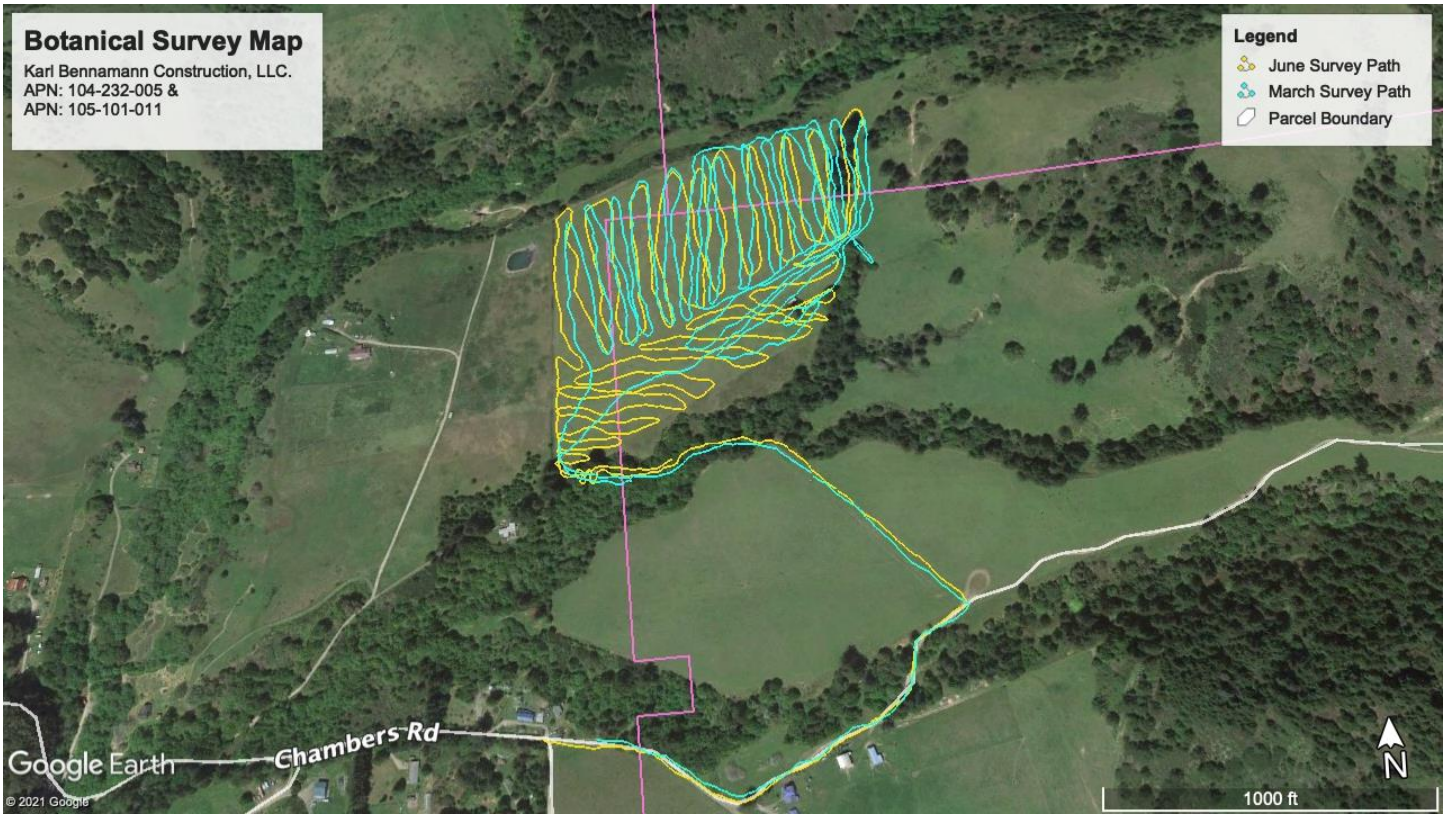

Figure 2. Map of project area and survey routes.

Appendix D. Project Area and Habitats

Figure 3. Project area in coastal prairie habitat, dominated by several invasive grasses, and mixed evergreen forest in background.

Figure 4. Planted Monterey Cypress.

Figure 5. Riparian woodland within northern portion of Mill Creek. Location south, and outside, of project area.

BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Assessor Parcel Number (APN):

105 – 101 – 011 & 104 – 232 – 005

Prepared For:

Cisco Farms Inc.
PO Box 1083
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Prepared By:

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Date Prepared:

September 9th, 2021

Certification: I hereby certify that the statements furnished in this report present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

X _____.

Mason London, MSc Biology
Naiad Biological Consulting Principal Biologist

Table of Contents

Section 1 Summary of Findings and Conclusions

A Biological Reconnaissance and Project Feasibility Assessment was completed for Cisco Farms, LLC as a preliminary measure to investigate the potential impacts of cannabis cultivation within the established Study Area.

The Study Area defined in this Report is located in Petrolia, California in Humboldt County. Although the seasonal timing of the field visit did not fall within the blooming period of all rare and special-status plant species, the preexisting habitat quality observed within the areas of potential project development, and the habitat observed, suggests it unlikely that special-status plant species, not in bloom during the field survey, are present within the potential proposed site locations, or would be negatively impacted by the project. Regardless of the preexisting habitat quality, since ground disturbance was predetermined to occur in conjunction with the proposed cannabis cultivation project, protocol-level botanical surveys were conducted in the 2021 season as a measure to inventory and assess the potential impacts to listed and special-status plant species that may occur within the project area. No special-status vegetation communities or habitats were observed during the botanical survey of the project area and the adjacent area. No CRPR 1 or 2 plants were observed within the project area.

The presence of one (1) listed special-status animal species, American badger (*Taxidea taxus*), was observed within the Study Area during the site visit investigation. This species was not physically observed, but evidence of its burrows was seen in and around the proposed cultivation site. Impacts to this species can be mitigated and a neutral impact can be achieved if the actions proposed for this project development follow the recommendations made in this Report.

With the proposed recommendations observed, the potential development of this project is not anticipated to cause any major direct or indirect impacts to the surrounding wildlife, environment and/or habitats. However, it has been assumed that prior to implementation of this project, protocol-level pre-construction surveys will be conducted to variety field and data-based observations documented in this Report.

Section 2 Introduction, Background, and Project Understanding

2.1 Purpose and Need

This Biological Resource Assessment Report has been prepared by request from the client. This Report describes the findings from a biological assessment, which in the case of this document is a reconnaissance survey to assess potential presence of biological resources and sensitive habitat(s). This Report has been prepared as a measure to investigate the impacts of the cultivation of cannabis over two (2) parcels, referred to throughout this Report as the Study Area. This assessment gives special focus to predetermined areas of known environmental superiority for cultivation, based on terrain, slope, habitat, and preexisting disturbance, referred to as the Area Assessed for Project Feasibility in Map 2-4. Even though the potential cultivation areas identified to be feasible for development have preexisting habitat disturbance, all County of Humboldt commercial cannabis cultivation applications, under the Commercial Cannabis Land Use Ordinance (CCLUO) *Application Requirements Cannabis 2.0*, require a "Biological Reconnaissance Survey for Special-Status Species and Sensitive Habitat."

The biological resource survey for this project is being treated as a biological assessment. A biological assessment, as defined by the United States Fish and Wildlife Service's (USFWS), is "information prepared by a qualified biologist to determine whether a proposed action is likely to: (1) adversely affect listed species or designated critical habitat; (2) jeopardize the continued existence of a species that are proposed for listing; or (3) adversely modify proposed critical habitat. A biological assessment is a specific document required under Section 7 of the Federal Endangered Species Act (FESA) when project actions have the potential to result in "may affect" determination," (USFWS: Endangered Species Glossary, 2020).

The assessment aspect of this Report presents on the field survey and findings of the biological resource and habitat quality within the Study Area and proposed cultivation site(s). This Report therefore addresses the status and possible utilization of the project site(s) by special-status plant and animal species found within the region, and assesses the environmental impacts to these resources in association to the cultivation of cannabis within the defined project site location(s). Special-status species, both plant and animal, include all state or federal rare, threatened, and/or endangered species and all species listed in the California Natural Diversity Database (CNDDB) list of *Special-Status Plants, Animals and Natural Communities*.

The locations and presence of aquatic resources, and other sensitive habitats, within the proximity of the proposed cultivation site within the Study Area assessed in this Report, were identified and mapped in order to determine adequate setbacks for the proposed cannabis cultivation to occur. This was done as a measure to address the environmental impacts of the cultivation areas within the Study Area.

This document has been prepared in accordance with legal requirements set forth under Section 7 of the Federal Endangered Species Act (FESA) (16 U.S. Code § 1536) subsection (c), as well as all other acts and programs outlined in *Section 6 Regulatory Guidelines*. The FESA subsection (c) states that "…based on the best scientific and commercial data available, that such species [which are listed or proposed to be listed] may be present, such agency shall conduct a biological assessment for the purpose of identifying any endangered species or threatened species which [are] likely to be affected by such action. Such assessments shall be completed … before any contract for construction is entered into and before construction is begun with respect to such action."[1]

This document has also been prepared in response to the State Water Resource Control Board's Cannabis Cultivation Policy requirement and condition, which states in *Section 1 – General Requirements and Prohibitions*, Term #10 that "…[p]rior to commencing any cannabis land development or site expansion activities, the cannabis cultivator shall retain a Qualified Biologist to identify sensitive plant, wildlife species, or communities at the proposed development site. If sensitive plant, wildlife species, or communities are identified, the cannabis cultivator and Qualified Biologist shall consult with CDFW and CAL FIRE to designate a no-disturbance buffer to protect identified sensitive plant, wildlife species, and communities. A copy of the report shall be submitted to the appropriate Regional Water Board."[2]

Since ground disturbance was predetermined to occur in conjunction with the proposed cannabis cultivation project, protocol-level botanical surveys were recommended at the time of the site visits, and have been conducted in conjunction with this biological assessment, as a measure to inventory and assess this projects potential to impact listed and special-status plant species, and sensitive natural communities, that may occur within the project foot print.

This Report summarizes the results of a reconnaissance level biological resource survey which assessed the Study Area for: (1) the potential to support special-status species; and (2) the potential presence of sensitive biological communities such as wetlands, riparian habitats and other sensitive biological resources protected by local, state, and federal laws and regulations. This Report also provides the findings of a protocol-level botanical survey which was conducted in conjunction with this biological resource assessment.

This Report considers the potentially occurring species and communities that could be affected by cannabis cultivation within the Study Area, based on available spatial data, habitat requirements, and observations made during site visits. The project location was targeted within the parcel and evaluated for potential habitat value to protect endangered, threatened, rare, and sensitive species by traversing

[1] **Section 7 of the Federal Endangered Species Act (FESA) (16 U.S. Code § 1536) subsection (c):** https://www.fws.gov/endangered/laws-policies/section-7.html
[2] **State Water Resource Control Board: Cannabis Cultivation Policy:** https://www.waterboards.ca.gov/water_issues/programs/cannabis/docs/policy/final_cannabis_policy_with_attach_a.pdf

the Study Area on foot to observe special-status species as well as overall habitat quality and habitat modification.

2.2 Biologist's Qualifications

The biological assessment for this Report was conducted by Mason London. Mason is the primary biological consultant of Naiad Biological Consulting. Mason holds a Master of Science Degree in Biology with a concentration in aquatic ecology from Humboldt State University. Mason has 11 years of experience working professionally as a botanist, wildlife biologist, aquatic ecological research scientist, and has instructed ecological field and classroom courses at the university level.

The botanical field survey described in this report was conducted by Sarah Mason. Sarah is a contracted botanist who holds a bachelor's degree in Botany with a minor in Wildland Soil Science from Humboldt State University. She is currently working towards receiving her MSc in Biology with a concentration in pollination ecology. Sarah has worked as an assistant botanist and biologist with Caltrans, as well as a botanical technician for the Klamath National Forest and Bitterroot National Forest. She has experience in bumblebee identification and teaching plant taxonomy at the university level.

The Golden Eagle/Raptor Survey described in this report was conducted by Phil Johnston. Phil Johnston is a contracted professional Wildlife Tracker and Researcher. Phil received his BS in Wildlife Management and Conservation from HSU and is currently employed as a Mountain Lion and Fisher Biologist for Hoopa Tribal Forestry. Phil has extensive experience working with carnivores in Northern California and is also trained to do Northern Spotted Owl Surveys, Willow Flycatcher surveys, nesting bird surveys and Peregrine Falcon nest surveys.

2.3 Project Description, Study Area Description and Geographic Setting

Cisco Farms Inc. is seeking Conditional Use Permits for 5 acres of new open-air cannabis cultivation and commercial nursery, and Zoning Clearance Certificates for two (2) Cannabis Support Facilities: commercial processing and Community Propagation Center on APNs 105-101-011, 104-232-005, and 104-191-001. Of the 5 acres, 3 acres will be full-sun outdoor, 1 acre light-deprivation in greenhouses with no artificial light, and 1 acre mixed-light in gutter-connect greenhouses with supplemental lighting not to exceed 25 watts/sf. Cultivation will result in 1-3 cycles annually, depending on the method. Nursery facilities total 67,760 sf and include 40,320 sf of greenhouses, 21,440 sf of gutter-connect greenhouses, and 6,000 sf of indoor/enclosed space. The Project proposal includes permitting of proposed facilities and structures that are appurtenant to the cultivation activities, which includes 19,200 sf of drying facilities. Drying and processing will initially occur off-site then move to on-site once these facilities have been constructed. A 3,000-sf commercial processing building is also proposed for both cannabis produced on-site and that produced by other cultivators. (Appendix I)

All irrigation water will be sourced from rainwater catchment. A groundwater well will provide water designated for human use and sanitization only. A total of 2,850,000 gallons of water storage is proposed. Water will be stored on-site in one agricultural pond with 2,650,000-gallon capacity, and forty (40) plastic tanks, each with 5,000-gallon capacity (total 200,000 tank capacity). Total annual water use is projected to be 3,358,070 gallons, and includes an allotted amount for pond evaporation. Cultivation activities will use 2,770,228 gallons (12.7 gal/sf), nursery activities will use 478,025 (7.1 gal/sf), and all other activities will use 109,817 gallons. Power will come from PG&E service and onsite renewables (solar and/or wind). There will be a maximum number of 34 employees during peak operations, with 12 during all other times. Approximately 1,280-sf of farmworker/ employee housing is proposed in modular units that will accommodate up to 8 persons. Domestic water for the housing will be sourced from the well and an OWTS will be installed. Access to the site is from Chambers Road, a paved county-maintained road. In addition, a Transport-only Self Distribution license will be sought at the state level in order to satisfy operational logistics.[3]

The parcels assessed for the feasibility of cannabis cultivation, referred to as the Study Area, in this Report are Assessor's Parcel Number (APN): 105-101-011 and 104-232-005 (Map 1 & Map 2).

APN: 105-101-011 is 320.70 acres (per Humboldt WebGIS) with a high elevation of approximately 790 feet (approx. 240 meters) and a low elevation of approximately 225 feet (approx. 68 meters) (Google Earth Pro, 2020). This parcel is located in Section 2, Township 2 South, Range 2 West (S2, T2S, R2W) of the Humboldt Base and Meridian (HBM).

APN: 104-232-005 is 108.69 acres (per Humboldt WebGIS) with a high elevation of approximately 860 feet (approx. 262 meters) and a low elevation of approximately 250 feet (approx. 76 meters) (Google Earth Pro, 2020). This parcel is located in Section 2, Township 2 South, Range 2 West (S2, T2S, R2W) of the Humboldt Base and Meridian (HBM).

The approximate center location of the Study Area is located approximately 1.40 air miles east of "downtown" Petrolia, California in Humboldt County (Map 1). Both parcels occur within the Petrolia 7.5-minute USGS quadrangle (Quad code: 4012433) within the Mill Creek watershed. Mill Creek is a tributary of the Mattole River which is a coastal river draining into the Pacific Ocean approximately 5.50 air miles southwest of the center location of the parcels (CDFW Region: 1). The center location of the Study Area is 40°19'26.9"N 124°15'36.1"W. Both parcels are zoned as Agriculture Exclusive (AE) which allows to be utilized for "[a]ll general agricultural uses, including accessory agricultural uses…"[4](Humboldt County Code Zoning Regulations: Title III Land Use and Development - *Section 314-6.6*). Both parcels have a Current General Plan of Agriculture Grazing (AG) which "… applies to dry-land grazing areas in relatively small land holdings that support cattle ranching or other grazing supplemented by timber harvest activities that are part of the ranching operation, and other non-prime

[3] Project Description verbiage from the project's Executive Summary provided to Naiad Biological Consulting by Cisco Farms Inc.
[4] **Humboldt County Code – Zoning Regulations:** https: //humboldtgov.org/DocumentCenter/View/4029/Humboldt-County-Zoning-Regulations-PDF?bidId=

agricultural lands. Residential uses must support agricultural operation…"[5](2017 Humboldt County General Plan, 2017). Allowable use types of parcels with an AG general plan include "general agriculture," as well as "intensive agriculture."

The entire Study Area occurs within an Agricultural Preserve under the California Land Conservation Act of 1965, better known as the Williamson Act. This act was created for counties to protect viable agricultural land by offering a tax incentive to property owners for keeping their land in agricultural production. Under the jurisdiction of the act, the County "…requires that the land be used for producing of agricultural commodities for commercial purposes and uses compatible with agriculture."[6](County of Humboldt, 2020).

[5] **Humboldt County General Plan:** https: //humboldtgov.org/DocumentCenter/View/62021/Section-48-Land-Use-Designations-PDF?bidId=
[6] **Humboldt County – Williamson Act Lands:** https://humboldtgov.org/DocumentCenter/View/4350/Williamson-Act-Informational-Brochure-PDF-?bidId=

Section 3 Methods

3.1 Pre-Site Visit Data Compilation and Preparation

A list of special-status plant and animal species considered to have potential presence within the Study Area was downloaded from the California Department of Fish and Wildlife's California Natural Diversity Database Biogeographic Information and Observation System (CNDDB BIOS) (CDFW, 2020), the United State Fish and Wildlife Service Information for Planning and Conservation (IPaC, USFWS 2020) and Calflora Project (Calflora, 2020) for the USGS Petrolia 7-quad area. Animals on the CNDDB list were primarily included based on state or federal listing status or CDFW designation. Native pollinators found in the area were also included based on the state rarity and their potential to be affected by cannabis cultivation.

Aside from the creation of a target list of special-status species, the Regional Dominate Alliances for the Study Area was downloaded, mapped, and assessed from The U.S. Forest Services' Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) (Map 5). The CALVEG system was developed to classify California's existing vegetation communities for use in statewide resource planning considerations. This was originally accomplished with the use of color infrared satellite imagery and field verification of types by current soil-vegetation mapping efforts as well as professional guidance through a network of contacts throughout the state. It is a hierarchical classification originally based on "formation" categories: forest, woodland, chaparral, shrubs and herbaceous in addition to non-vegetated units. They were originally identified by distinctions calculated among canopy reflectance values used in the LANDSAT satellite. Since then, the classification has been expanded from an initial 129 types occurring throughout the eight regions of the state to the current 213 occurring in nine regions, and image resolution has been enhanced.

The special status species in the 7.5 minute USGS Petrolia quadrangle, and the six (6) adjacent quadrangles (generally this search renders eight (8) adjacent quadrangles, but the Petrolia quadrangle is east of the Pacific Ocean and therefore there are no quadrangles to the west or southwest), resulted in twenty six (26) special-status animal species (5 amphibians, 9 birds, 5 fishes, 1 insect, 5 mammals, 1 reptile) (Table 1), thirty two (32) special-status plant (1 lichen, 31 Vascular) (Table 2) and two (2) special status habitat communities (Coastal and Valley Freshwater Marsh and Coastal Douglas Fir Western Hemlock Forest).

3.2 Biological Resource and Habitat Investigation

A biological resource and habitat investigation was conducted within the Study Area between 1000 and 1400 on July 3, 2020 by Mason London (Map 3). The weather was sunny and clear. There had been no rainfall in the weeks prior to the site visit.

The goal of the investigation and field survey was to determine suitable habitat for special-status species, and therefore potential impact to these species, within the Study Area and with special focus to the area determined to be feasible for cultivation development. Impact to potentially occurring special-status species was assessed based on the likelihood for the project, and project related activities, to result in *take*, or *incidental take*, of the previously mentioned species (Table 1 & 2). The Federal Endangered Species Act (FESA) defines *take* as any action that will "…[h]arass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 U.S.C., §1532 (19) [7]). Whereas *harass* is defined as "[a]n intentional or negligent act or omission which *creates the likelihood of injury* to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns (e.g., breeding, feeding, or sheltering)" (16 U.S.C., §1532 (20); 50 C.F.R. § 17.3[8]) and *harm* is defined as "[a]n act which actually kills or injures wildlife. May include significant habitat modification or degradation that kills or injures wildlife by significantly impairing essential behavior patterns," (U.S.C., §1532 (20); 50 C.F.R. § 17.3.[9]). The Study Area habitat and habitat characteristics were investigated and assessed based on these impact parameters.

As part of the initial reconnaissance of the Study Area's biological resources, suitable habitat for potential species was inspected during the field survey. A meandering, or wandering transect, approach to the survey was implemented in order to cover all habitats that could potentially be utilized by listed species. This survey path was recorded using Avanza Maps™ (Map 3).

An assessment of potential occurrences of special-status animal species was recorded during the meandering survey throughout the Study Area. All major habitats within the Study Area were investigated in order to determine current quality in context of species acquisition. The assessment of animal habitat within the Study Area is not an official protocol-level survey, which may be required for project approval by local, state, or federal agencies. Specific wildlife surveys may be required based on the specific location and timing of project development.

Dominant species in surrounding habitats, presence of sensitive habitats such as riparian areas and potential wetland features, and project site setbacks from watercourses and other aquatic habitats were observed and recorded. These observations were used to determine the most suitable and environmentally superior location(s) to potentially cultivate cannabis within the Study Area. A TruPulse 200X laser rangefinder was used to make all of the distance and slope measurements and for determining adequate setbacks in the field. True buffers and setbacks, used in all of the maps associated with this Report were generated with GIS software out of the field.

[7] **CESA to the Federal Endangered Species Act Definitions:** https://wildlife.ca.gov/Conservation/CESA/FESA
[8] **CESA to the Federal Endangered Species Act Definitions:** https://wildlife.ca.gov/Conservation/CESA/FESA
[9] **CESA to the Federal Endangered Species Act Definitions:** https://wildlife.ca.gov/Conservation/CESA/FESA

3.2.1 Floristic Survey

Since ground disturbance was predetermined to occur in conjunction with the proposed cannabis cultivation project, protocol-level botanical surveys were recommended at the time of the site visit and conducted during the 2021 bloom season as a measure to inventory and assess the potential impacts to listed and special-status plant species that may occur within the project area.

Complete details of these seasonally appropriate botanical surveys, as well as findings and recommendations, can be seen in Appendix G.

3.2.2 Wetlands, Soils and Streamside Management Areas Assessment and Determination

Prior to the site investigation, the Study Area was assessed for the presence of wetlands utilizing several digital databases and resources including the USFWS National Wetland Inventory (NWI), NRCS Web Soil Survey, USGS topographic maps, and inundation or saturation visible on aerial imagery (Map 4). Data regarding the Study Area's soil type was obtained from the Natural Resource Conservation (NRCS) Service Web Soil Survey (Map 4; Appendix E).

No soil test pits were dug for evaluating the presence of hydric soil since other wetland indicators such as hydrophytic vegetation and wetland hydrology were visible during the time of the site visit investigation. However, only potential wetland features surrounding the proposed cultivation sites were targeted. The "error on the side of caution" approach to determining potential wetland habitats was implemented when visually assessing the site and determining setbacks. Field observations of identifiable plant communities were used to assist interpretation of aerial imagery in defining potential wetland areas and their boundaries. A thorough investigation during the spring would be more appropriate for evaluating the presence of wetland hydrology. The general extent of these potential wetland features was digitized utilizing field observations of plant communities and aerial imagery. Test pits for determining hydric soil presence would be recommended for confirming the determinations of potential wetland features within the Study Area. The assessment of wetlands within the Study Area described in this Report is not an official protocol-level survey, which may be required for project approval by local, state, or federal agencies.

Watercourses and their associated classes were determined, based on the Forest Practice Rules Water Course and Lake Protection Zone definitions by use of visual observation when conducing the field visit on July 3rd, 2020.

3.2.3 Occurrence of Special-Status Species

Each species derived from the previously mentioned databases were evaluated for their potential of occurrence within the project site by the following criteria:

1. “***None***.” Species listed as having “none” potential of occurrence are those species for which there is no suitable habitat within the project area (elevation, hydrology, plant community, disturbance regime, etc.)

2. “***Low***.” Species listed as having a “low” potential of occurrence are those species for which there is no known occurrence of the species within the project area and there is limited or marginal suitable habitat present at the project area.

3. “***Moderate***.” Species listed as having “moderate” potential of occurrence within the project area are those species for which there is a known record of occurrence within or in the vicinity of the project area and/or there is suitable habitat present within the project area.

4. “***High***.” Species listed as having “high” potential of occurrence within the project area are those species for which there is a known record of occurrence within or in the vicinity of the project area and/or there is highly suitable habitat present within the project area.

5. “***Present***.” Species listed as having “present” potential of occurrence within the project area are those species for which the species was observed during the field survey.

Species with a ‘low’ potential of occurrence were not further investigated for likelihood to exist within or utilize the project site habitat. A rank of low was given to species that most likely will not occur, or are highly unlikely for them to occur, based on their habitat requirements. However, there are always exceptions to natural rules and so these species were not given the rank of ‘none’ because it is not entirely impossible for them to occur, just extremely unlikely.

Section 4 Results and Discussion

4.1 Study Area's Regional Alliances

The Regional Dominate Alliances within the Study Area, according to the CALVEG database, consist of: Annual Grasses and Forbs Alliance, Pacific Douglas-Fir Alliance, and California Bay Alliance (Map 5). The Alliance definitions below were taken from CALVEG and do not represent actual observations made, or necessarily species identified during the site visit investigation.

4.1.1 Annual Grasses and Forbs Alliance

Small areas of dry grasslands are found scattered at moderately low elevations in the western Klamath Mountains, especially on privately owned lands and in the western Trinity Alps area. In the Ranges and Coast Sections, these areas become more extensive on private lands scattered throughout the area and intermix with agriculturally managed sites. Species include introduced and native annual grasses such as Brome (*Bromus spp*.), Bluegrass (*Poa spp*.), Wildoats (*Avena spp*.), Fescue (*Vulpia spp*.), Dogtail (*Cynosurus spp*.), Barley (*Hordeum murinum*), Needlegrass (*Nassella spp*.), Oatgrass (Danthonia spp.), and a variety of forbs such as Checker Mallow (*Sidalcea spp*.), Brodiaea (*Brodiaea spp*.), Wild Hyacinth (*Dichelostemma spp*.), Yampah (*Perideridia spp*.) and Mariposa Lily (*Calochortus spp*.). Oregon White Oak (*Quercus garryana*) stands are often found adjacent to some upland annual grasslands.

4.1.2 Pacific Douglas-Fir Alliance

Douglas-fir (*Pseudotsuga menziesii*) is the dominant overstory conifer over a large area in the Mountains, Coast, and Ranges Sections. This alliance has been mapped at various densities in most subsections of this zone at elevations usually below 5600 feet (1708 m). Sugar Pine (*Pinus lambertiana*) is a common conifer associate in some areas. Tanoak (*Lithocarpus densiflorus var. densiflorus*) is the most common hardwood associate on mesic sites towards the west. Along western edges of the Mountains Section, a scattered overstory of Douglas-fir often exists over a continuous Tanoak understory with occasional Madrones (*Arbutus menziesii*). When Douglas-fir develops a closed-crown overstory, Tanoak may occur in its shrub form (*Lithocarpus densiflorus var. echinoides*). Canyon Live Oak (*Quercus chrysolepis*) becomes an important hardwood associate on steeper or drier slopes and those underlain by shallow soils. Black Oak (*Q. kelloggii*) may often associate with this conifer but usually is not abundant. In addition, any of the following tree species may be sparsely present in Douglas-fir stands: Redwood (*Sequoia sempervirens*), Ponderosa Pine (*P. ponderosa*), Incense Cedar (*Calocedrus decurrens*), White Fir (*Abies concolor*), Oregon White Oak (*Q. garryana*), Bigleaf Maple (*Acer macrophyllum*), California Bay (*Umbellifera californica*), and Tree Chinquapin (*Chrysolepis chrysophylla*). The shrub understory may also be quite diverse, including Huckleberry Oak (*Q. vaccinifolia*), Salal (*Gaultheria shallon*), California Huckleberry (*Vaccinium ovatum*), California

Hazelnut (*Corylus cornuta var. californica*), Poison Oak (*Toxicodendron diversilobum*), Oceanspray (*Holodiscus discolor*), Hairy Honeysuckle (*Lonicera hispidula*) and a wide range of other shrubs and forbs.

4.1.3 California Bay Alliance

This woodland type is almost completely composed of California Bay (*Umbellularia californica*). It occurs in scattered small stands, generally away from the immediate coast on exposed slopes and ridges from the Oregon border southward below about 3000 feet (915m) in eleven subsections in the Coast and three subsections of the Ranges Sections. California Bay also is adapted to seawinds of coastal environments, especially towards the south. For example, this type has been mapped extensively in the Marin Hills and Valley Subsection (Coast), where it associates with trees and shrubs such as Redwood (*Sequoia sempervirens*), Douglas-fir (*Pseudotsuga menziesii*), Tanoak (*Lithocarpus densiflorus*) and Coyote Bush (*Baccharis pilularis*) near the coast. Other hardwoods such as Canyon and Coast Live Oaks (*Quercus chrysolepis, Q. agrifolia*) may be found in these stands further inland. Tree Chinquapin (*Chrysolepis chrysophylla*), Berries (*Rubus spp*.), and species of Ceanothus may also occur as minor associates of this type.

4.2 Observed Study Area Habitat, Existing Site Conditions and Project Location Feasibility

The main habitats investigated within the Study Area consists of large open upland grassland fields, open pasture for cattle grazing, riparian corridors, and watercourses. These habitats were assessed based on habitat quality parameters in relationship to previous habitat modification. These habitats were also assessed based on the potential to harbor special-status species. The watercourses within the Study Area were also investigated and adequately buffered with setbacks to the proposed project area (Map 2).

4.2.1 APN: 105-101-011

The habitats investigated within APN: 105-101-011 consist of an open pasture, riparian corridor, Class II intermittent watercourses (unnamed tributaries to Mill Creek) and Class III unnamed tributaries (Map 2). The riparian corridor is dominated by bigleaf maple (*Acer macrophyllum*), California bay laurel (*Umbellularia californica*), Douglas fir (*Pseudotsuga menziesii*) and California buckeye (*Aesculus californica*) (Photo 1). The dominant species observed in the understory of this habitat is poison oak (*Toxicodendron diversilobum*) and Himalayan blackberry (*Rubus armeniacus*). Species observed within the Class II channel were poison oak (*Toxicodendron diversilobum*), Himalayan blackberry (*Rubus armeniacus*), Pacific blackberry (*Rubus ursinus*), rough dog's-tail (*Cynosurus echinatus*), pennyroyal (*Mentha pulegium*), quaking grass (*Briza maxima*), flatweed (*Hypochaeris radicata*), St, Johns'-wort (*Hypericum perforatum*), coyote brush (*Baccharis pilularis*), pearly everlasting (*Anaphalis*

margaritacea), wild carrot (*Daucus carota*), field mustard (*Brassica rapa*), sheep sorrel (*Rumex acetosella*), sword fern (*Polystichum munitum*), ribwort plantain (*Plantago lanceolate*), sedge (C*arex spp*.), rush (*Juncus spp*.) and a few immature Pacific Madrone (*Arbutus menziesii*) (Photo 2 - 3). Due to the seasonal timing of this site visit, the majority of the species within the disturbed open pasture habitat were unidentifiable, however, it is apparent that this area is dominated by many nonnative species, as well as some native forb and grass species (Photo 4 - 5). Another unnamed Class II watercourse, a tributary of Mill Creek, was identified in the middle of the Study Area, north of the previously mentioned watercourse (Photo 6). This watercourse is not anticipated to be impacted by the proposed project. There is one stream crossing with a plastic culvert that may need to be adequately sized and replaced, however, the culvert sizing was not calculated during the July 3, 2020 field visit and may need further investigation (Photo 7). A Class III unnamed watercourse, which is the northern most tributary of the Class II watercourse previously described, was also identified in the northern portion of the parcel and is not anticipated to be impacted by the proposed project in anyway (Photo 8; Map 2)

No special-status species in bloom at the time of the field survey were observed. The previous species mentioned are to describe the general habitat type and habitat quality (based on the abundance of invasive species) and the listing of these species does not represent an official protocol-level survey (which can be found in Appendix G).

A conservative buffer of 100 ft has been placed around the riparian corridor habitat in order to follow the most conservative setback requirements (Map 2). This buffer was established at the edge of the riparian corridor which is in accordance with the Humboldt County Streamside Management Ordinance (1995), as amended by the Humboldt County General Plan, which states that the buffer distances are to be "[m]easured as the horizontal distance from the top of the bank or the edge of riparian drip-line, whichever is greater on either side of the stream," and according to the most conservative buffer as required by the California State Water Resource Control Board (Section 1, Requirement 37 of Cannabis Cultivation Policy Attachment A: Definitions and Requirements for Cannabis Cultivation[10]).

4.2.2 APN: 104-232-005

The habitats investigated within APN: 104-232-005 consist of open pasture, riparian corridor, and a Class I watercourse (Mill Creek) (Map 2). The dominate species within the habitat features within the parcel are the same was the previously listed species within APN: 105-101-011. These species are mentioned here to describe the general habitat type and the listing of these species does not represent an official protocol-level survey, which may be required for project approval by local, state, or federal agencies.

The Class I watercourse was given a buffer of 150 ft following the guidance from the Humboldt County Streamside Management Ordinance, and adhere to the most conservative buffer as required by the

[10] State Water Resources Control Board: Cannabis Cultivation Policy Principles and Guidelines for Cannabis Cultivation https://www.waterboards.ca.gov/water_issues/programs/cannabis/docs/policy/final_cannabis_policy_with_attach_a.pdf

California State Water Resource Control Board (Section 1, Requirement 37 of Cannabis Cultivation Policy Attachment A: Definitions and Requirements for Cannabis Cultivation) (Map 2).

4.2.3 Area Assessed for Project Feasibility

Based on results of the aquatic resource setbacks, a large majority of the open pasture, in the southwestern portion of the parcel, and continuing into the northwestern portion of APN: 105-101-011, is suitable for development of cannabis cultivation, referred to as the Area Assessed for Project Feasibility (Photo 9 - 10; Map 2). This area is highly degraded from his natural habitat, resulting in low habitat quality in regards to preexisting habitat modification, as a result of over a century of cattle grazing (See the Botanical Survey Report in Appendix G for a complete list of species present). Utilizing the open pasture habitat for cannabis cultivation would likely render no negative impact to the environmental or biological resource based on the habitat quality and the location and setback to sensitive habitats (Photo 8). As a measure to investigate this determination, and practice due diligence, protocol-level botanical surveys, as well as the initiation of nesting raptor bird surveys and raptor prey surveys of the area have been completed.

Developing a cultivation site at this location would require no need to clear brushy vegetation, and would require no extensive grading as a result of the level of prolonged disturbance at this site. This particular site location already has drivable access and therefore could easily be accessed with minimal to no disturbance to the surrounding habitats. Depending on the cultivation method associated with the proposed project, a power drop may need to occur near this site to be connected to PG&E grid power. Mitigation for potential disturbance associated with the cannabis cultivation activities is further discussed in *Section 5 Conclusion*.

4.3 Watercourses, Aquatic Habitats, and Streamside Management Areas

The watercourses observed and documented within the Study Area were all buffered following both state and county setback requirements (Map 2). These buffers have been established as the Streamside Management Areas (SMA) as per Section 1, Requirement 37 of the California State Water Resource Control Board's *Cannabis Cultivation Policy Attachment A: Definitions and Requirements for Cannabis Cultivation*[11] (Map 2). The determination of the watercourse classes is based upon the Forest Practice Rules Water Course and Lake Protection Zone definitions (California Code of Regulation, title 14, Chapter 4. Forest Practice Rules, Subchapters 4, 5, and 6 forest District Rules, Article 6 Water Course and Lake Protection[12]).

The location within the Study Area that was determined to be feasible for cannabis cultivation is not anticipated to cause any negative interface with the Mattole River, or its tributaries, since the necessary

[11] **State Water Resources Control Board: Cannabis Cultivation Policy Principles and Guidelines for Cannabis Cultivation:** https://www.waterboards.ca.gov/water_issues/programs/cannabis/docs/policy/final_cannabis_policy_with_attach_a.pdf
[12] **Forest Practice Rules Water Course and Lake Protection Zone definitions:** https://www.law.cornell.edu/regulations/california/title-14/division-1-5/chapter-4/subchapter-6/article-6

buffered setbacks will be followed. Impacts to watercourses may occur when updating the stream crossings. Mitigation measures to avoid impact to biological resources utilizing these aquatic habitats is explained in the recommendation section of this Report. Furthermore, the potential impacts to the aquatic habitats within the Study Area can be minimized if best management practices (BMP) are used during the construction and development of the project site (Appendix F).

There is no anticipated impact to these watercourses, or any aquatic habitat in association with this project, if these buffers and setbacks are adhered to and if the project development and construction follows the recommendations presented in *Section 5.1.3*.

4.3.1 Wetland Habitats

The utilization of visual assessment methods to detect presence of hydrophytic vegetation and wetland hydrology rendered no such habitat features within a proximity to the proposed project. The entire Study Area was not visually assessed with equal effort and therefore wetland habitats may occur in areas not surveyed within the Study Area. The area assessed occurred within a proximity to the proposed project area that could result in impact or affect to such habitat features, and in compliance with state and county setbacks (100 ft). No further wetland delineations or assessments are recommended for project approval.

4.3.2 Study Area Soils

The general soil types, presented as Soil Map Units on Map 4, were obtained from the Web Soil Survey and presented in further detail in Appendix E.

The Area Assessed for Project Feasibility primarily occurs within the Map Unit 152- Benbow, and a a small portion in the Map Unit 151- Parkland-Garberville complex (Map 4). Full soil type descriptions can be found in Appendix E.

4.4 Special-Status Plant Species and Communities

4.4.1 Definitions

Special status plants include taxa that are listed under the Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA) in addition to plants which meet the definition of rare or endangered under the California Environmental Quality Act (CEQA). CDFW recommends that plants on California Rare Plant Ranks (CRPR) Lists 1A (presumed extinct or extirpated), 1B (rare, threatened, or endangered in California and elsewhere), 2A (presumed extirpated) and 2B (rare, threatened, or endangered in California but more common elsewhere), or other species that warrant consideration based on local or biological significance, be addressed during California Environmental Quality Act (CEQA) review of proposed projects. Plants of rank 3 and 4, which are under review and watch lists respectively, are addressed by Naiad Biological Consulting, and may warrant consideration under CEQA if potential or cumulative impacts to the plant exist.

CDFW's natural community rarity rankings follow NatureServes's 2012 NatureServe Conservation Status Assessment: Methodology for Assigning Ranks, in which all alliances are listed with a global (G) and (S) rank. NCSC are those natural communities that are ranked S1 to S3 (CDFW, 2020), where 1 is critically imperiled, 2 is imperiled, and 3 is vulnerable. However, they may not warrant protection under CEQA unless they are considered high quality. Human disturbance, invasive species, logging, and grazing are common factors considered when judging whether the stand is high quality and warrants protection.

4.4.2 Special-Status Plant Species and Communities Observed

No CRPR 1 or 2 plants were encountered in the project area. *Hesperocyparis macrocarpa* (Monterey cypress), a CRPR of 1B.2 in its natural range, was observed during surveys but is believed to be a planted ornamental and should not be impacted by cultivation operations.

No special-status vegetation communities or habitats were observed during the botanical survey of the project area. The project area habitat is typical of valley and foothill grasslands and coastal prairie within the lower foothills of the Northern Coast Ranges. The surrounding areas are typical of North Coast coniferous forest and mixed evergreen forest, dominated by Douglas-fir (*Pseudotsuga menziesii*) and tanoak (*Notholithocarpus densiflorus*). There is a small stretch of riparian woodland, where a portion of Mill creek runs through, just south of the project area and along the road leading to the pasture. There is no canopy or shrub layer within the project area. Some native grasses are present, including *Festuca idahoensis,* but no sensitive natural communities could be established during surveys due to the large amount of invasive grasses present, consistent with historic grazing. Complete description and findings from the protocol-level botanical surveys is presented in Appendix G.

Because of the low quality of the habitat within the project area due to historic grazing, agricultural uses of the proposed project area, and associated invasive species, proposed cultivation operations are unlikely to harm any special status plants or sensitive natural plant communities. Even though no foreseeable impacts to sensitive species or sensitive habitats are likely to occur at the Area Assessed for Project Feasibility, the project should still minimize disturbance when developing the project area by following the Best Practicable Treatment or Control (BPTC) and Best Management Practices (BMPs) presented in Appendix F.

4.5 Special-Status Animals Species

Not all previously mentioned habitats within the Study Area were surveyed for special-status animal species potential utilization with equal effort. The habitats investigated for presence and habitat requirements of special-status animal species consist primarily of the habitats that could be impacted by the project development and its associated activities. It is assumed that disturbance of special-status animal species habitat could result in take, or incidental take, of the species determined to utilize these habitats. Regardless of the habitats investigated, all species derived from the CNDDB list were

assessed for potential occurrence within the Study Area, both within the potential project area (the Area Assessed for Project Feasibility), and within the surrounding habitats (the Study Area) (Table 1).

4.5.1 Special-Status Animals Species with Potential for Occurrence

Within the locations determined to be feasible sites for project development, moderate potential habitat for five (5) special-status animal species exists. Two (2) of these five (5) species are Cooper's hawk (*Accipiter cooperii*) and Golden Eagle (*Accipitridae chrysaetos*) would only utilize the proposed project site for hunting/foraging and would otherwise only pass over in flight (Table 1). These species would not utilize the potential project site locations for nesting or shelter due to the void of canopy cover and other structures. Moreover, depending on the cultivation method proposed for these potential projects, mitigating the production of noise or light pollution is recommended in order to avoid the potential take from indirect disturbance of species utilizing surrounding habitats (see *Section 5 Conclusion*).

Since the Area Assessed for Project Feasibility does include potential hunting/foraging grounds for these species, raptor surveys have been initiated for this project. On August 22nd, 2021, a Nesting Bird Survey and a Prey Survey was conducted following CDFW recommended protocols. The Prey Survey was conducted to determine suitable forage for target species such as black-tailed jackrabbits, brush rabbits, and California ground squirrels. The Nesting Bird Survey was conducted as a measure to determine if any listed raptors are currently nesting within a proximity of impact to the Areas Assessed for Project Feasibility. A follow-up Nesting Bird Survey will be conducted in conjunction with this Fall survey, in the mid to late winter in early 2022 to confirm findings from this initial survey. An interim report of the initial findings of these surveys is presented in Appendix H.

Based on the initial findings of the raptor surveys, it is likely there will be no direct impact to Cooper's hawk, Golden Eagle, or other special-status raptor species that may reside in nearby habitats outside of the Study Area. The follow-up raptor survey in February will serve to confirm the presence/absence of the aforementioned species. Regardless of such findings, the project as currently proposed is capable of avoiding impact by mitigating any indirect disturbances that result from proposed activities.

The remaining three (3) special-status species, with a potential of being directly impacted by the proposed project, include the Western Bumblebee (*Bombus occidentalis*), the North American porcupine (*Erethizon dorsatum*) and the American badger (*Taxidea taxus*).

Western Bumblebee (*Bombus occidentalis*) is widely distributed in California and is known to pollinate a wide variety of flowering plants. This species lives in abandoned burrows and cavities and potential nesting locations may exist within the suitable project areas. Due to the project areas habitat quality, and due to the abundant suitable habitat within the Study Area, it is unlikely that there would be a significant loss of nesting habitat as a result of project development. Furthermore, it is unlikely that the potential project development would result in a significant decrease in forage material due to the existence of similar homogeneous habitat throughout the broader Study Area to that found within the

Area Assessed for Project Feasibility. It is not anticipated that the project will negatively impact this species.

North American Porcupine (*Erethizon dorsatum*) can be found in forested habitats in broadleaf upland forest, cismontane woodland, and lower and upper montane conifer forest. Even though this species may reside nearby and could pass through the project site while foraging, the lack of cover within the project area makes it unlikely that this species would utilize open field habitat. Also, the frequent human activity that occurs within the Study Area likely results in *Erethizon dorsatum* not utilizing the site. It is not anticipated that the project will negatively impact this species.

American badger (*Taxidea taxus*) is most abundant in drier open stages of most shrub, forest, and herbaceous habitats. *Taxidea taxus* requires sufficient food, friable soils (soils with a crumbly texture) and open, uncultivated ground. This species preys on burrowing rodents and digs burrows. There was evidence of *Taxidea taxus* activity in the Area Assessed for Project Feasiability. No *Taxidea taxus* were observed during the site visit since they are generally nocturnal, however, many burrows were observed within the pasture habitat (Photo 11).

One of the main prey species of *Taxidea taxus* are pocket gophers (*Thomomys monticola* and *T. bottae*). It has been shown that *Thomomys monticola* and *T. bottae* densities are significantly higher in grazed meadows than ungrazed meadows (Powers et al. 2011). Therefore, there is a direct correlation to grazed pasture habitats and suitable habitat for *Taxidea taxus.* The percentage of pasture that is proposed to be converted to cannabis cultivation will likely not create a significant loss to the surrounding *Taxidea taxus* habitat (Map 2). The suitable grazed habitat surrounding the Area Assessed for Project Feasibility will still be regularly grazed and will therefore likely maintain suitable habitat for *Taxidea taxus* to forage.

Though the habitat of the potential project area is suitable for *Taxidea taxus*, the amount of development that would occur in association with the cannabis cultivation makes it likely that this species would not continue to utilize the project site for burrowing and hunting if already present. Recommendation to avoid take of this species are explained in recommendation section of this Report. The surrounding suitable habitat is not be disturbed in anyway related to proposed project activities and therefore this species is still capable of existing within the Study Area without a negative impact. Furthermore, depending on the cultivation methods utilized, all noise and light pollution will be mitigated and will therefore not disrupt the nocturnal life history of this species.

If the BMP are followed for this project, there will be no anticipated impact to these terrestrial and aquatic species, or the terrestrial and/or aquatic riverine habitat from the activities associated with this project.

4.5.1 Other Special-Status Animal Species

The nearest known **northern spotted owl (*Strix occidentalis caurina*)** Activity Centers (AC), according to the most up to date CNDDB Spotted Owl Viewer, are approximately 1.55 air miles (HUM0010) south to southeast of the nearest boundary of Area Assessed for Project Feasibility (Map 7; Occurrence Report 1).

It is stated in the County of Humboldt's 2018 resolution certifying the EIR for the CCLUO, in *Mitigation Measure 3.4-1e: Northern spotted owl preconstruction habitat suitability surveys and determination of presence or absence*[13], "[i]f the area of proposed new development activities is within suitable habitat for northern spotted owl (e.g., coniferous forest), and is within 1.3 miles (average species home range) of a known occurrence of northern spotted owl, as determined by a qualified biologist, the following measures shall be followed.

Prior to removal of any trees, or ground-disturbing activities adjacent or within suitable nesting, roosting, or foraging habitat (e.g. forest clearings) for spotted owl, a qualified biologist, familiar with the life history of the northern spotted owl, shall conduct preconstruction surveys for nests within a 1.3-mile buffer around the site as described in Protocol for Surveying Proposed Management Activities that May Impact Northern Spotted Owls (USFWS 2012). Surveys shall take place between March 1 and August 31. Three complete surveys spaced at least 7 days apart must be completed by June 30. Six complete surveys over the course of 2 years must be completed to determine presence or absence of northern spotted owl."

The County of Humboldt's 2018 resolution certifying the EIR for the CCLUO goes on to state that "[i]f northern spotted owls are determined to be absent 1.3 miles from the site, then further mitigation is not required." Since the nearest known AC is further than 1.3 miles away form the Area Assessed for Project Feasibility, a disturbance and habitat modification assessment to determine the presence of the species is not necessary.

Furthermore, northern spotted owl resides in dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir habitats, from sea level up to approximately 2300 meters. They usually nest in trees or snag cavities, or in broken tops of large trees (Polite C. 1990). Roost selection for northern spotted owl is "… related closely to thermoregulatory needs [since they are] intolerant of high temperatures." Because of this, northern spotted owl "[r]oost in dense overhead canopy on north-facing slopes in the summer," (Zeiner, D.C. et al, 1988-1990. The Study Area does not exhibit this species' preferable forest type, due to the size, structure, and species of the trees within the Study Area, and is therefore not likely utilized for nesting, roosting, or foraging/hunting by northern spotted owl (Photo 9 & 10). The Area Assessed for Project Feasibility is entirely flat and open, with no habitat or vegetation for nesting or roosting and all habitat modification associated with this project is determined to have no impact to

[13] **County of Humboldt's 2018 resolution certifying the EIR for the CCLUO:** https://humboldtgov.org/DocumentCenter/View/63736/Resolution-18-40-Certifying-Final-EIR-PDF

any aspect of northern spotted owl's life history. Because of this, the Area Assessed for Project Feasibility would not be utilized by this species for foraging and/or hunting.

Surrounding the Study Area (off site of the parcel), there is moderate suitable habitat for northern spotted owl, but if the recommendations made in *Section 5.1.3* are followed, all potential direct or indirect impacts to this species can be mitigated. The Area Assessed for Project Feasibility is outside of any area of disturbance to potential northern spotted owl residing in this nearby habitat to be affected.

Even though this project will not "...remove or modify spotted owl nesting, roosting or foraging habitat…", according to the *USFWS Northern Spotted Owl Survey protocol: Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls*, the "… protocol should also be applied to activities that disrupt essential breeding activities and to activities that may injure or otherwise harm spotted owl other than through habitat modification (e.g., noise disturbance, smoke from prescribed fire)," (USFWS, 2012). It is noted that in general, noise levels of 70 dB or less, would not generate a significant disturbance unless within very close proximity (<25 m) to an active nest (USFWS 2006). Since all activities associated with the development of the proposed cultivation area will have cultivation methods that will mitigate all noise and light pollution, there is no expected disruptions towards essential breeding activities or any activates that may injure or harm this species, or any other species, related to this project. There will be no need for generators (except for backup power) since the parcel will be utilizing grid and solar power, and the applicant can avoid light pollution by completely covering greenhouses when artificially lit, if this method of cultivation is to be pursued.

4.6 Special Status Habitat Communities

The two (2) special-status habitat communities identified in the CNDDB BIOS search in the 7.5-minute USGS Petrolia quadrangle, and the 6 adjacent quadrangles, are the Coastal and Valley Freshwater Marsh habitat and Coastal Douglas Fir Western Hemlock Forest habitat.

The **Coastal and Valley Freshwater Marsh** is only documented to occur within the Petrolia quadrangle south of the Mattole River mouth, approximately 5.00 air miles southwest of the Study Area. The description of a Freshwater Marsh habitat is described to consist of freshwater that develops in shallow, standing or slow-moving water and can be found at the edge of ponds and streams, and at other sites that, lack currents and is permanently flooded by fresh water. This habitat is different than the potential wetland features identified within the Study Area. There was no such habitat observed during the site visit that meets the criteria for a Coastal and Valley Freshwater Marsh and is therefore determined to not exist within the Study Area. The potential project is not anticipated to impact this habitat in anyway.

The **Coastal Douglas Fir Western Hemlock Forest** was also only documented to occur within the Petrolia quadrangle as well, south of the Mattole River, approximately 2.50 miles upriver from the Mattole River mouth and approximately 2.75 air miles southwest of the Study Area. According to the

Society of American Foresters: *Forest Cover Types of the United States and Canada*, this habitats composition is defined by “[c]oast Douglas fir and western hemlock both present in substantial amounts in this mixed-species type, and together comprise at least 80 percent of the stocking. Douglas fir usually is predominant, but hemlock may be so on more moist or less fertile sites.” No western hemlock were observed within the Study Area, and the Douglas fir trees observed do not meet this forest type composition description. Therefore, this habitat type was determined to not exist within the Study Area. The potential project is not anticipated to impact this habitat in anyway.

Section 5 Conclusion

5.1 Potential Impacts and Recommended Mitigation

5.1.1 Potential Direct Impacts

Direct impacts are considered to be effects that may occur to the environment from direct interface with proposed action. The Biological Reconnaissance and Project Feasibility Assessment, in conjunction with the protocol-level Botanical Survey and the initial Raptor Survey, conducted within the Study Area resulted in locations that have been determined to be suitable sites for cannabis cultivation based on the preexisting habitat type and quality, observed species, and the locations setbacks from sensitive habitats. These locations have been established as a means to minimize or negate the potential for direct impact to occur to the environment from direct interface with the project development.

If the project related activities occur at the locations defined in Map 2 - 4, there will likely be no negative impacts to sensitive habitats, or severely alter the already disturbed habitat quality of the site, any more than already has been by historic land utilization. Given the preexisting disturbance to this site, and the fact that no sensitive vegetation is to be removed within and surrounding the Study Area, the effects of the project to the environment can be mitigated and no significant adverse effects to biological resources can be achieved if the actions associated with this project follow the recommendations listed in *Section 5.1.3*.

As a result of the abundance of invasive and nonnative species within the Area Assessed for Project Feasibility, the proposed project is capable of assisting in improving the surrounding environment and habitat by removing these invasive species during the project site development process, and ultimately halting their spread. Because of these factors, the activities associated with the cultivation at the proposed sites would only potentially have direct impacts as disturbance-based

Common disturbance-based impacts associated with cannabis cultivation include noise and light pollution. No continuous noise (above 70 dB to the nearest tree line) or light is to be generated in association with this proposed project. These disturbance-based impacts can be mitigated since the project will utilize PG&E grid power, avoiding the need for noise producing generators, and if the cultivation method proposed requires artificially lighting greenhouses, they shall be completely covered when lit to avoid any potential for light pollution. Therefore, there will be no expected disturbance-based impacts to the surrounding wildlife or habitats.

5.1.2 Potential Indirect Impacts

If best management practices are followed, there are no foreseeable indirect impacts associated with this proposed project to the environment, surrounding habitat, or wildlife.

5.1.3 Recommendations

The following recommendations should be followed and/or taken into consideration through the development of the proposed projects and operations:

- During the development and construction of this project, best management practices (BMPs) should be used to prevent sediment, fuels or contaminates from entering the surrounding terrestrial and aquatic environments/habitats. A complete list of BMPs can be found at Humboldt County: Title III – Land Use and Development - Division 3 - Building Regulations (Ch. 7 § 337-13)[14]. The implementation of BMPs will be dependent on the project construction methods. Best Practicable Treatment or Control (BPTC) and BMPs have been listed in Appendix F for the client's reference when proceeding with any land development associated with the project assessed in this Report.
    - BMPs for this project should include the installation of waddles, silt fences, and berms to combat and prevent erosion and to eliminated contaminates and sediment movement towards the nearby watercourses, if major ground disturbances is proposed. Construction equipment fueling and greasing should occur within one location at the project site, at least 200 ft away from the river, watercourse, or wetland habitat. This location should be clear of brush, flat and contain fuel mats in case of accidental spillage. Development should only occur during daylight hours. Every morning, and throughout the day, during construction the equipment should be inspected for hydraulic fluid, oil or fuel leaks. If leaks are detected, they should be repaired immediately and before any further work in completed in order to prevent excess spillage entering the watercourse.
- It is recommended that during the time of project site development, the applicant follow the procedures for eradicating the invasive species which will be identified in the projects associated Invasive Species Control Plan document required under the County of Humboldt *Application Requirements Cannabis 2.0*.
- Migratory bird nesting season occurs between February 1 and August 31. If project construction methods result in a sufficient amount of noise from the use of machinery, it is recommended that this construction occur between September 1 and January 31 in order to avoid disturbance to migratory nesting birds. This is also dependent on the location of project development and the project's proximity to nesting bird habitat, such as the riparian corridors identified within the Study Area. Project development proximity to habitat will is to be determined based upon specific project construction methodology. If construction is proposed to occur within the migratory bird nesting season (February 1 and August 31), it is recommended that a biologist survey for nesting birds within the proximity of the project area within a couple weeks

[14] **Best Management Practices for Humboldt Co. can be located at: https:** //humboldt.county.codes/Code/337-13

(approximately 14 days) prior to the project construction and prior to any vegetation removal. This should be done as a measure to investigate if any migratory, or nonmigratory, birds have constructed nests in any of the trees within a proximity to the project that may be impacted by noise disturbance.

- When the cultivation operation is in process, there is to be no cultivation material outside of the project area, and trash within and outside of the project site, will be regularly removed to avoid interfacing with the surrounding habitat, environment and/or wildlife.
- The applicant should survey the site before any ground disturbance for burrows which may indicate American badger presence. If burrows are observed, pre-construction surveys should be completed by a qualified biologist, before site development occurs. Ground disturbance of the project site, with the use of construction equipment, may result in the potential to injure or kill American badgers by crushing them in their dens or crushing den entrances, which would prevent badgers from escaping. The survey should be conducted to determine if the site location contains active dens and determine if avoidance of these active dens can occur. If active dens are determined to be present, badger relocation should occur to other onsite suitable habitat. The client can avoid the need for a pre-construction survey if above ground pots are utilized for cultivation and no ground disturbance will occur.
- If the proposed pond is constructed, a Bullfrog Management Plan, that complies with CDFW requirements, should be implemented.
- Stream crossings were identified within the Study Area, but were not the primary objective of this site inspection/report. The State Water Board General Order for Cannabis Cultivation requires that legacy discharge issues be addressed for projects within the North Coast region. If stream crossings occur within the parcel, the applicant will need to address and upgrade crossings to accommodate anticipated flow levels associated with 100-year storm evens. Further biological investigation may be required to comply with the construction associated with stream crossing upgrades.
    - Pre-construction surveys should occur as general measures for protection of biological resources that may utilize the watercourses where the stream crossing upgrades occur.
        - For any work sites containing western pond turtles, salamanders, foothill yellow-legged frogs, California red-legged frogs, tailed frogs, or other special-status species that may be found within the work site, the applicant shall provide to the assigned CDFW officer associated with the projects Lake or Streambed Alteration Agreement for review and approval, a list of the exclusion measures that will be used at their work site to prevent take or injury to any individual pond turtles, salamanders, or frogs that could occur on the site. The applicant shall

ensure that the approved exclusion measures are in place prior to construction. Any turtles or frogs found within the exclusion zone shall be moved to a safe location upstream or downstream of the work site, prior to construction.

- To avoid impacts to aquatic habitats and associated species, the activities carried out during the stream crossing upgrades should occur during the summer dry season where flows are low, or streams are dry.
  - Work around streams is restricted to the period of June 15 through November 1 or the first significant rainfall, whichever comes first. Actual project start and end dates, within this timeframe, are at the discretion of CDFW.
  - All project activities shall be confined to daylight hours.
- Prior to construction, the applicant will obtain permission to conduct the construction work from, but not limited to the following agencies:
  - California Department of Fish and Wildlife, Lake or Streambed Alteration Agreement (LSAA/1600).
  - North Coast Regional Water Quality Control Board, Section 401 Water Quality Certification.

- If additional activities are proposed that may result in take of a listed species, agency personnel from CDFW and USFWS can further analyze the potential impacts and provide technical assistance for any listed species. If required, guidelines for these reconnaissance surveys should be followed in accordance to the Humboldt County Cannabis Program EIR, CDFW Survey and Monitoring Protocols and Guidelines, which can be located here: https://www.wildlife.ca.gov/conservation/survey-protocols

5.2 Statement of Limitation

The data and findings presented in this Report are valid to the extent that they represent habitat analysis and/or actual sightings of the wildlife and special-status species described. These findings outlined in this Report are based on one (1) Biological Assessment site visit and refer to findings from two (2) seasonally appropriate Botanical Survey site visits and one (1) Fall Raptor Survey and may not be seasonally appropriate for all conclusive results.

Deficiencies in these findings may result from the following:

- The assessment of habitat utilization within the Study Area, by special-status animal species, was based upon the observations made during a single site visit and further studies and surveys may be required for project approval by local, state or federal agencies as well.

- The parcel boundaries displayed in the maps created for this Report do not represent a boundary survey. Parcel and property lines shown within these maps are approximated and were acquired from Humboldt County Web GIS, and any errors within these boundaries are a result of errors in Humboldt County's GIS database.
- This Report is not intended to be a complete biological survey report for all species generated from the CNDDB, but rather an initial reconnaissance and feasibility assessment based on present biological conditions. However, the Botanical Survey in Appendix G does intend to be a complete biological survey of floristic species observed within the Area Assessed for Project Feasibility in the 2021 bloom season.
- It has been assumed that prior to implementation of this project, protocol-level surveys (pre-construction) will be conducted to verify field and data-based observations documented in this Report, if recommendations established in this Report are not followed.
- The biological resource buffers and setbacks defined in this Report, and presented in Map 2, only represent buffers to biological resources and do not include cultural resources (e.g. historical landmarks and/or cemeteries). Additional buffers and setbacks may be required for cultural resources which may alter the size of the potential cultivation areas defined in this Report.

The opinions, conclusions, and recommendations in this Report are based on assumptions made by Naiad Biological Consulting when undertaking services and preparing the Report. As a result of this Report being an initial biological reconnaissance and scoping assessment, and not a protocol-level survey, Naiad Biological Consulting expressly disclaims responsibility for any error in, or omission from, this Report arising from or in connection with any of the assumptions being incorrect.

Section 6 Regulatory Framework

6.1 Regulatory Framework Guidelines

The following regulatory framework is provided as justification for the rules and recommendations presented within this document. Further information may be appropriate for explanation of recommendations or actions expressed in this document and can be presented to the client upon request.

6.1.1 Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) has jurisdiction over federally-listed threatened and endangered species under the federal Endangered Species Act (FESA). The USFWS also maintains a list of 'proposed' species and candidate species that are not legally protected under the FESA, but are often included in their review of a project as they may become listed in the near future. The FESA protects listed animal species from harm or "take" which is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Take can also include habitat modification or degradation that results in death or injury to a listed species. An activity can be defined as a "take" even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under FESA if they occur on federal lands. Pursuant to the requirements of the FESA, a federal agency reviewing a proposed project within its jurisdiction must determine whether any federally listed threatened or endangered species (plants and animals) may be present in the project area and determine whether the proposed project may affect such species. Any activities that could result in the take of a federally-listed species will require formal consultation with the USFWS.

6.1.2 California Endangered Species Act

The California Endangered Species Act (CESA) protects any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with the CESA, the California Department of Fish and Wildlife (CDFW) has jurisdiction over state-listed species (California Fish and Wildlife Code 2070). Take of state-listed species requires a permit from CDFW, which is granted only under strictly limited circumstances. Additionally, the CDFW maintains lists of "species of special concern" that are defined as animal species that appear to be vulnerable to extinction because of declining populations, limited ranges, and/or continuing threats. Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed or proposed endangered or threatened species may be present in the project area and determine whether the proposed project may result in a significant impact on such species.

6.1.3 California Environmental Quality Act

Section 15380(b) of the California Environmental Quality Act (CEQA) Guidelines provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in FESA and CESA and the section of the California Fish and Wildlife Code dealing with rare or endangered plants or animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts, if it finds that the species meets the criteria of a threatened or endangered species.

6.1.4 Clean Water Act

Under Section 404 of the federal Clean Water Act, the U.S. Army Corps of Engineers (Corps) is responsible for regulating the discharge of fill material into waters of the United States. Waters of the U.S. and their lateral limits are defined in 33 CFR Part 328.3 (a) and include streams that are tributary to navigable waters and their adjacent wetlands. Wetlands that are not adjacent to waters of the U.S. are termed "isolated wetlands" and, depending on the circumstances, may also be subject to Corps jurisdiction. In general, a Corps permit must be obtained before placing fill in wetlands or other waters of the U.S. The type of permit depends on the acreage involved and the purpose of the proposed fill. Minor amounts of fill are sometimes covered by Nationwide Permits, which were established to streamline the permit process for projects with "minimal" impacts on wetlands or other waters of the U.S. An Individual Permit is required for projects that result in more than a minimal impact on jurisdictional areas. The Individual Permit process requires evidence that fill of jurisdictional areas has been minimized to the extent "practicable" and provides an opportunity for public review of the project.

6.1.5 California Water Quality Regulatory Programs

Pursuant to Section 401 of the federal Clean Water Act and the state's Porter-Cologne Act, projects that are regulated by the Corps must obtain water quality certification from the Regional Water Quality Control Board (RWQCB). This certification ensures that the project will uphold state water quality standards. The RWQCB sometimes asserts jurisdiction over wetlands that the Corps does not (e.g. certain isolated wetlands) and may impose mitigation requirements even if the Corps does not. The CDFW also exerts jurisdiction over the bed and banks of watercourses and water bodies according to provisions of Section 1601to1603 of the Fish and Wildlife Code. The Fish and Wildlife Code requires a Stream Alteration Agreement for the fill or removal of material within the bed and banks of a watercourse or water body.

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Appendix A

Photo Documentation

BIOLOGICAL RECONNAISSANCE AND
PROJECT FEASIBILITY ASSESSMENT REPORT

Cisco Farms, LLC

Assessor Parcel Number (APN):
APN: 105 – 101 – 011 & 104 – 232 – 005

September 2021

Naiad
Biological
Consulting

Photo 1. The riparian forest habitat along the unnamed Class II water course on APN: 105-101-011. See Map 2 for location reference.

Photo 2. The unnamed Class II watercourse on APN: 105-101-011. Photo taken from the stream looking down stream towards the west facing the bridge.

Photo 3. The unnamed Class II watercourse on APN: 105-101-001. Photo taken from the bridge looking up stream towards the east.

Photo 4. The pasture habitat on APN: 105-101-011. See Map 2 for site location.

Photo 5. A second photo of the pasture habitat on APN: 105-101-011. See Map 2 for site location

Photo 8. The unnamed Class II watercourse in the northwestern portion of APN: 105-101-011. This habitat is not expected to be impacted by the proposed cultivation project in anyway (Map 2).

Photo 7. The culvert and stream crossing over the unnamed Class II watercourse in the northwestern portion of APN: 105-101-011. This may need to be replaced in order to comply with regulation sizing (Map 2).

Photo 8. The thick vegetated area surrounding the Class III watercourse identified on APN:105-101-011 (Map 2).

Photo 9. The pasture habitat on the northwestern portion of APN: 105-101-011 and southwestern portion of APN: 104-232-005 where the proposed project area, within Area Assessed for Project Feasibility, be located. This site was determined to be suitable for cannabis cultivation due to its present habitat quality, observed species, and setbacks to watercourses and sensitive habitats. Photo taken facing southwest. See Map 2 for site location.

Photo 10. The pasture habitat on the northwestern portion of APN: 105-101-011 and southwestern portion of APN: 104-232-005 where the proposed project site occurs. This site was determined to be suitable for cannabis cultivation due to its present habitat quality, observed species, and setbacks to watercourses and sensitive habitats. Photo taken facing northeast from the southwestern portion of the proposed site. See Map 2 for site location.

Photo 11. A burrow from an American badger observed within the grazed pasture habitat in the Area Assessed for Project Feasibility (Map 2).

Appendix B

Tables

BIOLOGICAL RECONNAISSANCE AND
PROJECT FEASIBILITY ASSESSMENT REPORT

Cisco Farms, LLC

Assessor Parcel Number (APN):
APN: 105 – 101 – 011 & 104 – 232 – 005

September 2021

Table 1 – Special-Status Animal Species – September 2021 – APN: 105 – 101 – 011 & 104 – 232 – 005 – Petrolia and surrounding 7.5 min quadrangles

Scientific Name	Common Name	Federal Status	State Status	CDFW Status	Habitats	Potential of Occurrence
Amphibians						
Ascaphus truei	Pacific tailed frog	None	None	SSC	Inhabits cold, clear, permanent rocky streams in wet forests. They do not inhabit ponds or lakes. A rocky streambed is necessary for protective cover for adults, eggs, and larvae. After heavy rains, adults may be found in the woods away from the stream.	None in project area. Low in surrounding area
Rana aurora	northern red-legged frog	None	None	SSC	inhabits quiet pools of streams, marshes, and occasionally ponds. Occurs along the Coast Ranges from Del Norte County to Mendocino County, usually below 1200 m (3936 ft).	Low in project area. Moderate in adjacent area.
Rana boylii	foothill yellow-legged frog	None	Candidate Threatened	SSC	found in or near rocky streams in a variety of habitats, including valley-foothill hardwood, valleyfoothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types.	Low in project area. Moderate/high in adjacent area.
Rhyacotriton variegatus	southern torrent salamander	None	None	SSC	This species occurs in cold, well-shaded permanent streams and seepages in shady coastal forests.	None in project area. Low in adjacent area.
Taricha rivularis	red-bellied newt	None	None	SSC	Broadleaved upland forest North coast coniferous forest Redwood Riparian forest Riparian woodland. Lives in terrestrial habitats, juveniles generally underground, adults active at surface in moist environments. Will migrate over 1 km to breed, typically in streams with moderate flow and clean, rocky substrate.	Low in project area. Moderate in adjacent area.
Birds						
Accipiter cooperii	Cooper's hawk	None	None	WL	A breeding resident throughout most of the wooded portion of the state. Breeds in southern Sierra Nevada foothills, New York Mts., Owens Valley, and other local areas in southern California. Ranges from sea level to above 2700 m (0-9000 ft). Dense stands of live oak, riparian deciduous, or other forest habitats near water used most frequently.	Moderate in project area (flyover). Moderate in adjacent area.
Accipiter gentilis	northern goshawk	None	None	SSC	Prefers middle and higher elevations, and mature, dense conifer forests. Casual in winter along north coast, throughout foothills, and in northern deserts, where it may be found in pinyon-juniper and low- elevation riparian habitats.	Low in project area (flyover). Moderate in adjacent area.
Aquila chrysaetos	golden eagle	None	None	FP ; WL	Ranges from sea level up to 3833 m (0-11,500 ft) (Grinnell and Miller 1944). Habitat typically rolling foothills, mountain areas, sage-juniper flats, desert.	Moderate in project area (flyover). Moderate in adjacent area.
Fratercula cirrhata	tufted puffin	None	None	SSC	Tufted Puffins can be found in many coastal habitats adjacent to the Washington coast and elsewhere in the northern Pacific, with the exception of estuaries. They breed in colonies on islands with steep, grassy slopes or on cliff tops. Winter habitat is well offshore, in mid-ocean.	None in project area. Low in adjacent area.

Ardea alba	great egret	None	None	-	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland:Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	Low in project area. Moderate in adjacent area.
Ardea herodias	great blue heron	None	None	-	The great blue heron is fairly common all year throughout most of California, in shallow estuaries and fresh and saline emergent wetlands. Less common along riverine and rocky marine shores, in croplands, pastures, and in mountains above foothills.	Low in project area. Moderate in adjacent area.
Pelecanus occidentalis californicus	California brown pelican	Delisted	Delisted	FP	Nests on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators. Roosts communally.	None.
Phalacrocorax auritus	double-crested cormorant	None	None	WL	A yearlong resident along the entire coast of California and on inland lakes, in fresh, salt and estuarine waters. August to May, fairly common to locally very common along the coast and in estuaries and salt ponds; uncommon in marine subtidal habitats from San Luis Obispo Co. south, and very rare to the north.	None in project area. Low in adjacent area.
Strix occidentalis caurina	Northern spotted owl	Threatened	Threatened	SSC	Northern spotted owls typically nest or roost in multilayered, mature coniferous forest with high canopy closure, large overstory trees, and broken-topped trees or other nesting platforms (USFWS 2012). Confirmed breeding areas are widespread throughout Humboldt County (Hunter et al. 2005). Northern spotted owls may use a broad range of habitats for foraging. Their favored prey, the dusky-footed woodrat (Neotoma fuscipes), typically inhabits the forest edge (Harris 2005).	None in project area (flyover). Low in adjacent area.
Fish						
Entosphenus tridentatus	Pacific lamprey	None	None	SSC	Aquatic, klamath northcoast flowing waters sacramento san joaquin flowing waters swift current gravel bottom	None in project area.
Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	Threatened	Threatened	-	Aquatic, klamath northcoast flowing waters sacramento san joaquin flowing waters swift current gravel bottom	None in project area. Low in adjacent area.
Oncorhynchus mykiss irideus pop. 16	steelhead - northern California DPS	Threatened	None	-	Aquatic, klamath northcoast flowing waters sacramento san joaquin flowing waters swift current gravel bottom	None in project area. Low in adjacent area.
Oncorhynchus mykiss irideus pop. 36	summer-run steelhead trout	None	None	SSC	Aquatic, klamath northcoast flowing waters sacramento san joaquin flowing waters swift current gravel bottom	None in project area. Low in adjacent area.

Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	Threatened	None	-	Aquatic, klamath northcoast flowing waters sacramento san joaquin flowing waters swift current gravel bottom	None in project area. Low in adjacent area.
Insects						
Bombus occidentalis	western bumble bee	None	None	-	nests underground or above ground in abandoned bird nests. food plants include Baccharis, Cirsium, Lupinus, Lotus, Grindella, Phacella	Moderate in project area. Moderate in adjacent area.
Mammals						
Erethizon dorsatum	North American porcupine	None	None	-	broadleaf upland forest, cismontane woodland, lower and upper montane conifer forest	Moderate in project area. Moderate in adjacent area.
Arborimus pomo	Sonoma tree vole	None	None	SSC	Occurs in old-growth and other forests, mainly Douglas-fir, redwood, and montane hardwood- conifer habitats.	Low in project area. Moderate in adjacent area.
Pekania pennanti	fisher - West Coast DPS	None	Threatened	SSC	Occurs in intermediate to large-tree stages of coniferous forests and deciduous-riparian habitats with a high percent canopy closure (Schempf and White 1977).	Low in project area. Moderate in adjacent area.
Taxidea taxus	American badger	None	None	SSC	Alkali marsh Alkali playa Alpine Alpine dwarf scrub Bog & fen Brackish marsh Broadleaved upland forest Chaparral Chenopod scrub Cismontane woodland Closed-cone coniferous forest Coastal bluff scrub Coastal dunes Coastal prairie Coastal scrub Desert dunes Desert wash Freshwater marsh Great Basin grassland Great Basin scrub Interior dunes Ione formation Joshua tree woodland Limestone Lower montane coniferous forest Marsh & swamp Meadow & seep Mojavean desert scrub Montane dwarf scrub North coast coniferous forest Oldgrowth Pavement plain Redwood Riparian forest Riparian scrub Riparian woodland Salt marsh Sonoran desert scrub Sonoran thorn woodland Ultramafic Upper montane coniferous forest Upper Sonoran scrub Valley & foothill grassland: Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Present in project area. Moderate in adjacent area.
Eumetopias jubatus	Steller (=northern) sea-lion	Delisted	None	-	Steller sea lions are found in coastal waters of the North Pacific Ocean from Japan to central California.. Breeding occurs along the North Pacific Rim from Año Nuevo Island in central California to the Kuril Islands north of Japan, with the greatest concentration of rookeries (breeding grounds) in the Gulf of Alaska.	None.
Reptile						
Emys marmorata	western pond turtle	None	None	SSC	aquatic, flowing waters, standing waters, marsh, swamp, wetland	Low in project area. Moderate in adjacent area.

Definitions of CDFW statuses:

FP

Fully Protected: This classification was the State of California's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds and mammals. Most of the species on these lists have subsequently been listed under the state and/or federal endangered species acts.

SS

Species of Special Concern: It is the goal and responsibility of the Department of Fish and Wildlife to maintain viable populations of all native species. To this end, the Department has designated certain vertebrate species as "Species of Special Concern" because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The goal of designating species as "Species of Special Concern" is to halt or reverse their decline by calling attention to their plight and addressing the issues of concern early enough to secure their long-term viability.

WL

Watch List: The Department of Fish and Wildlife maintains a list consisting of taxa that were previously designated as "Species of Special Concern" but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

Definitions of Federal Statuses (Federal Endangered Species Act):

Endangered species:

As defined in the U.S. Government Code and California Fish and Game Code (16 U.S. Government Code 1532[6] and California Fish and Game Code Section 2062), a native species, subspecies, variety of organism, or distinct population segment that is in serious danger of becoming extinct throughout all or a significant portion of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

Threatened species:

Native species, subspecies, variety, or distinct population segment of an organism that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future throughout all of a significant portion of its range.

Candidate Species:

Not defined or addressed in statute or regulations. Candidate species are those which USFWS has sufficient information on their biological status and threats to propose listing, but for which the development of a proposed listing regulation is precluded by other higher priority listing activities. Candidates receive no protection under the ESA.

Definitions of State Statuses (California Endangered Species Act):

Endangered species:

A native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease. Fish & G. Code, §2062

Threatened species:

A native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Fish & G. Code, §2067

Candidate Species:

A native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the Department for listing. Candidates are given full CESA protection. Fish & G. Code, §2068

Table 2 – Special-Status Plant Species – September 2021 – APN: 105 – 101 – 011 & 104 – 232 – 005– Petrolia and surrounding 7.5 min quadrangles

Scientific Name	Common Name	Federal Status	State Status	CESA	Bloom Period	Lifeform	Habitat	Micro Habitat	Elevation (m)	Potential of Occurrence
Usnea longissima	Methuselah's beard lichen	None	None	4.2	NA	fruticose lichen (epiphytic)	Broadleafed upland forest; North Coast coniferous forest	On tree branches; usually on old growth hardwoods and conifers.	50 - 1460 meters	None. Moderate in adjacent area.
Erigeron biolettii	streamside daisy	None	None	3	Jun-Oct	perennial herb	Broadleafed upland forest; Cismontane woodland; North Coast coniferous forest	Rocky, mesic	30 - 1100 meters	Low in project area. Moderate in adjacent area.
Hemizonia congesta ssp. tracyi	Tracy's tarplant	None	None	4.3	May-Oct	annual herb	Coastal prairie; Lower montane coniferous forest; North Coast coniferous forest	openings, sometimes serpentinite.	120 - 1200 meters	None due to elevation range.
Hesperevax sparsiflora var. brevifolia	short-leaved evax	None	None	1B.2	Mar-Jun	annual herb	Coastal Strand, Northern Coastal Scrub	dunes, coastal	0 - 215 meters	None.
Layia carnosa	beach layia	Endangered	Endangered	1B.1	Mar-Jul	annual herb	Coastal Strand, Northern Coastal Scrub (sandy)	dunes, coastal	0 - 60 meters	None.
Packera bolanderi var. bolanderi	seacoast ragwort	None	None	2B.2	May-Jul	perennial rhizomatous herb	Coastal scrub; North Coast coniferous forest	Sometimes roadsides.	30 - 650 meters	Low in project area. Moderate in adjacent area.
Erysimum concinnum	bluff wallflower	None	None	1B.2	Feb-Jul	annual / perennial herb	Coastal bluff scrub, coastal dunes, coastal prairie	dunes, coastal	0 - 185 meters	None.
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	None	None	1B.2	(Apr)Jun-Oct	perennial herb	Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt, streamsides)	dunes, coastal	0 - 30 meters	None due to elevation range.
Hosackia gracilis	harlequin lotus	None	None	4.2	Mar-Jul	perennial rhizomatous herb	Broadleafed upland forest; Coastal bluff scrub; Closed-cone coniferous forest; Cismontane woodland; Coastal prairie; Coastal scrub; North Coast coniferous forest; Valley and foothill grassland	Wetlands; Roadsides; Meadows and seeps; Marshes and swamps;	0 - 700 meters	Low in project area. Moderate in adjacent area.

Lathyrus glandulosus	sticky pea	None	None	4.3	Apr-Jun	perennial rhizomatous herb	Cismontane woodland	NA	300 - 800 meters	None due to elevation range.
Ribes roezlii var. amictum	hoary gooseberry	None	None	4.3	Mar-Apr	perennial deciduous shrub	Broadleafed upland forest; Cismontane woodland; Lower montane coniferous forest; Upper montane coniferous forest	NA	120 - 2300 meters	Low in project area. Moderate in surrounding area.
Romanzoffia tracyi	Tracy's romanzoffia	None	None	2B.3	Mar-May	perennial herb	Coastal bluff scrub. Coastal scrub	rocky	15 -30 meters	None due to elevation
Iris longipetala	coast iris	None	None	4.2	Mar-May	perennial rhizomatous herb	Coastal prairie, Lower montane coniferous forest, Meadows and seeps.	Mesic sites, heavy soils	0 - 600 meters	Low in project area due to know occurrences. Low in adjacent area.
Sisyrinchium hitchcockii	Hitchcock's blue-eyed grass	None	None	1B.1	Jun	perennial rhizomatous herb	Cismontane woodland (openings), Valley and foothill grassland	Known in CA from only one occurrence near Cape Ridge.	NA	Low in project area. Moderate in adjacent area.
Erythronium oregonum	giant fawn lily	None	None	2B.2	Mar-Jun	perennial bulbiferous herb	Cismontane woodland	sometimes serpentinite, rocky, openings; Meadows and seeps	100 - 1150 meters	None due to elevation range.
Erythronium revolutum	coast fawn lily	None	None	2B.2	Mar-Jul	perennial bulbiferous herb	Broadleafed upland forest; North Coast coniferous forest	Mesic, streambanks; Bogs and fens	0 - 1600 meters	None in project area. Moderate in adjacent area
Lilium rubescens	redwood lily	None	None	4.2	Apr-Aug	perennial bulbiferous herb	Broadleafed upland forest; Chaparral; Lower montane coniferous forest; North Coast coniferous forest; Upper montane coniferous forest	Sometimes serpentinite, sometimes roadsides.	30 - 1910 meters	None in project area. Moderate in adjacent area.
Sidalcea malachroides	maple-leaved checkerbloom	None	None	4.2	Apr-Aug	perennial herb	Broadleafed upland forest; Coastal prairie; Coastal scrub; North Coast coniferous forest; Riparian woodland	Often in disturbed areas.	0 - 730 meters	Moderate in project area. Moderate in adjacent area.
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	None	None	1B.2	May-Aug	perennial rhizomatous herb	Coastal bluff scrub; Coastal prairie; North Coast coniferous forest	often roadcuts.	15 - 880 meters	Moderate in project area. Moderate in adjacent area.
Pityopus californicus	California pinefoot	None	None	4.2	May-Aug	perennial herb (achlorophyllous)	Broadleafed upland forest; Lower montane coniferous forest; North Coast coniferous forest; Upper montane coniferous forest	mesic.	15 - 2225 meters	Low in project area. Moderate in adjacent area.

Montia howellii	Howell's montia	None	None	2B.2	Mar-May	annual herb	North Coast coniferous forest	Vernally mesic, sometimes roadsides; Meadows and seeps; Vernal pools	0 - 835 meters	Low in project area. Moderate in adjacent area.
Epilobium septentrionale	Humboldt County fuchsia	None	None	4.3	Jul-Sep	perennial herb	Broadleafed upland forest; North Coast coniferous forest	sandy or rocky.	45 - 1800 meters	Low in project area. Moderate in adjacent area.
Oenothera wolfii	Wolf's evening-primrose	None	None	1B.1	May-Oct	perennial herb	Coastal bluff scrub, Coastal dunes, Coastal prairie, Lower montane coniferous forest	sandy, usually mesic.	3 - 800 meters	None.
Listera cordata	heart-leaved twayblade	None	None	4.2	Feb-Jul	perennial herb	Lower montane coniferous forest; North Coast coniferous forest	Bogs and fens	5 - 1370 meters	None in project area. Moderate in adjacent area.
Piperia candida	white-flowered rein orchid	None	None	1B.2	May-Sep	perennial herb	Broadleafed upland forest; Lower montane coniferous forest; North Coast coniferous forest	sometimes serpentinite	30 - 1310 meters	None in project area. Moderate in adjacent area.
Castilleja litoralis	Oregon coast paintbrush	None	None	2B.2	Jun-Jul	perennial herb (hemiparasitic)	Coastal bluff scrub, Coastal dunes, Coastal scrub	Sandy	15 - 100 meters	None due to elevation
Calamagrostis foliosa	leafy reed grass	None	Rare	4.2	May-Sep	perennial herb	Coastal bluff scrub, North Coast coniferous forest	rocky	0 - 1220 meters	Moderate in project area. Low in adjacent area.
Pleuropogon refractus	nodding semaphore grass	None	None	4.2	Apr-Aug	perennial rhizomatous herb	Lower montane coniferous forest; Meadows and seeps; North Coast coniferous forest	mesic; riparian forest	0 - 1600 meters	Low in project area. Moderate in adjacent area.
Gilia capitata ssp. pacifica	Pacific gilia	None	None	1B.2	Apr-Aug	annual herb	Coastal bluff scrub; Chaparral (openings); Coastal prairie; Valley and foothill grassland	NA	5 - 1665 meters	Moderate in project area. None in adjacent area.
Gilia millefoliata	dark-eyed gilia	None	None	1B.2	Apr - Jul	annual herb	Coastal Dunes	Sandy	0 - 30 meters	None due to elevation range.
Polemonium carneum	Oregon polemonium	None	None	2B.2	Apr-Sep	perennial herb	Coastal prairie, Coastal scrub, Lower montane coniferous forest	NA	0 - 1830 meters	Low in project area. None in adjacent area.
Chrysosplenium glechomifolium	Pacific golden saxifrage	None	None	4.3	Feb-Jun(Jul)	perennial herb	North Coast coniferous forest, Riparian forest	Streambanks, sometimes seeps, sometimes roadsides.	10 - 455 meters	None in project area. Moderate in adjacent area.

Global Conservation Status Definition

Listed below are definitions for interpreting NatureServe global (range-wide) conservation status ranks. These ranks are assigned by NatureServe scientists or by a designated lead office in the NatureServe network.

G1 **Critically Imperiled** – At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.

G2 **Imperiled** – At high risk of extinction or elimination due to very restricted range, very few populations, steep declines, or other factors.

G3 **Vulnerable** – At moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors.

G4 **Apparently Secure** – Uncommon but not rare; some cause for long-term concern due to declines or other factors.

G5 **Secure** – Common; widespread and abundant.

G#G# **Range Rank** – A numeric range range (e.g. G2G3, G1G3) is used to indicate the range of uncertainty about the exact status of a taxon or ecosystem type. Ranges cannot skip more than two ranks (e.g., GU should be used rather than G1G4).

Infraspecific Taxon Conservation Status Ranks

T# **Infraspecific Taxon** (trimonial) – The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species global rank. Rules for assigning T-ranks follow the same principles outlined above. For example, the global rank of a critically imperiled subspecies of an otherwise widespread and common species would be G5T1. A T subrank cannot imply the subspecies or variety is more abundant than the species. For example, a G1T2 subrank should not occur. A vertebrate animal population, (e.g., listed under the U.S. Endangered Species Act or assigned candidate status) may be tracked as an infraspecific taxon and given a T-rank; in such cases a Q is used after the T-rank to denote the taxon's informal taxonomic status.

Subnational (S) Conservation Status Ranks

S1 **Critically Imperiled** – Critically imperiled in the jurisdiction because of extreme rarity or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the jurisdiction.

S2 **Imperiled** – Imperiled in the jurisdiction because of rarity due to very restricted range, very few populations, steep declines, or other factors making it very vulnerable to extirpation from jurisdiction.

S3 **Vulnerable** – Vulnerable in the jurisdiction due to a restricted range, relatively few populations, recent and widespread declines, or other factors making it vulnerable to extirpation.

S4 **Apparently Secure** – Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 **Secure** – Common, widespread, and abundant in the jurisdiction.

S#S# **Range Rank** – A numeric range rank (e.g., S2S3 or S1S3) is used to indicate any range of uncertainty about the status of the species or ecosystem. Ranges cannot skip more than two ranks (e.g., SU is used rather than S1S4).

Rank Qualifiers

? **Inexact Numeric Rank** – Denotes inexact numeric rank; this should not be used with any of the Variant Global Conservation Status

Q **Questionable taxonomy that may reduce conservation priority** – Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower-priority (numerically higher) conservation status rank. The “Q” modifier is only used at a global level and not at a national or subnational level.

Appendix C

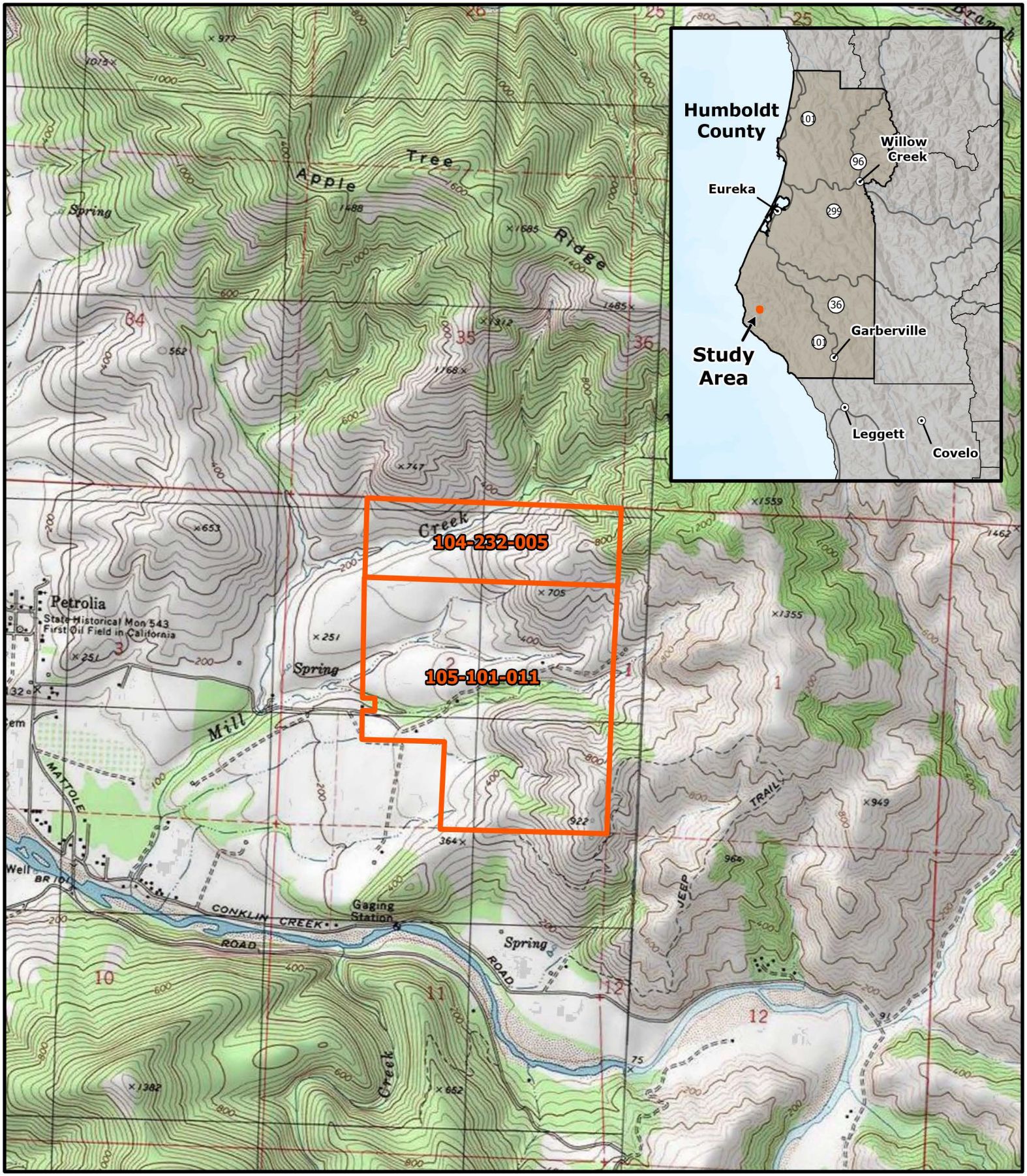
Maps

BIOLOGICAL RECONNAISSANCE AND
PROJECT FEASIBILITY ASSESSMENT REPORT

Cisco Farms, LLC

Assessor Parcel Number (APN):
APN: 105 – 101 – 011 & 104 – 232 – 005

September 2021



Karl Benemann Construction, LLC
PO Box 1083 Trinidad, CA 95570
APNs: 104-232-005 & 105-101-011

Map 1: Site Location Map

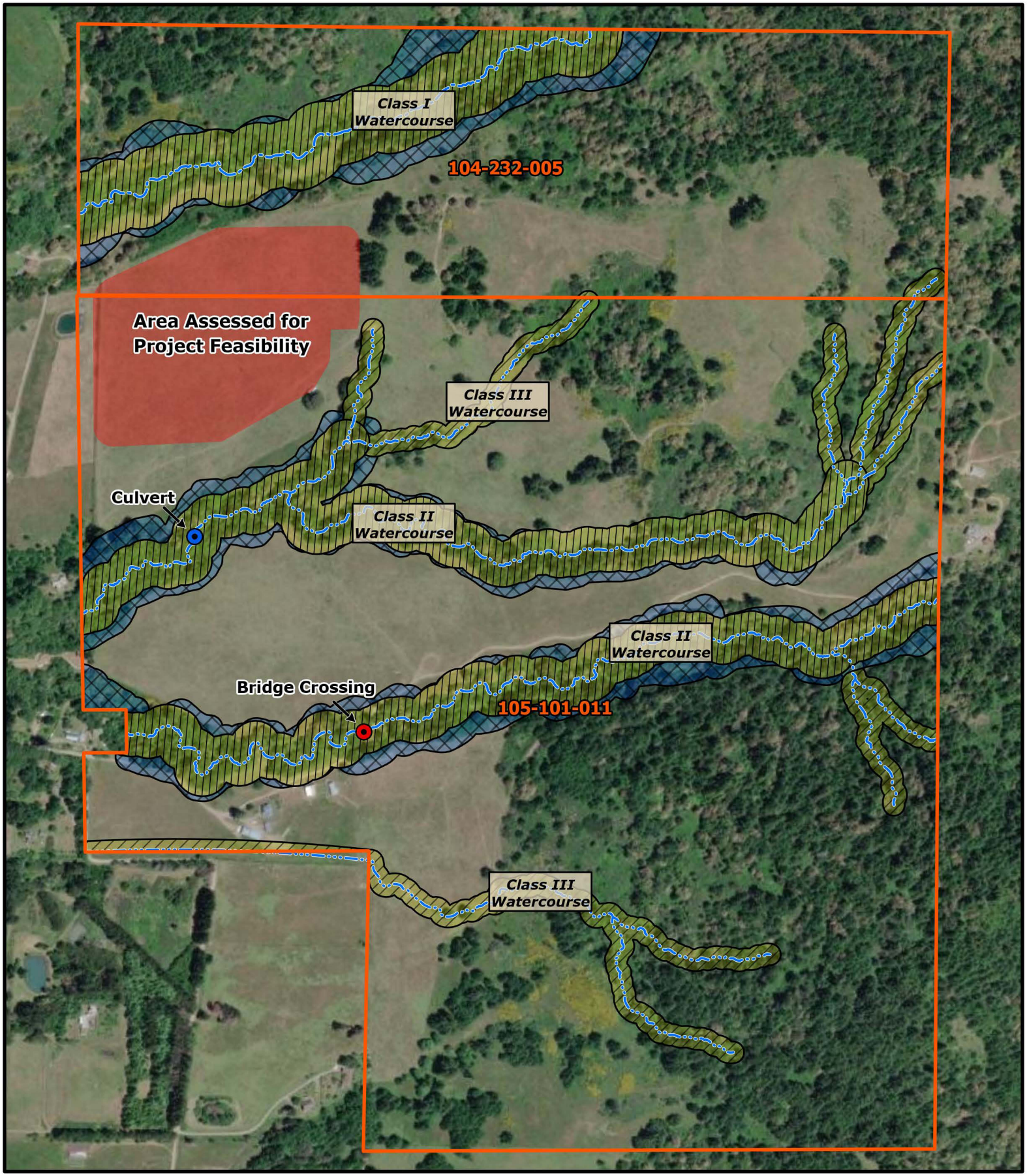
Scale: 1:24,000

Study Area

0 1,000 2,000 4,000 Feet

Source: Petrolia 7.5-Minute USGS Quadrangle

Naiad Biological Consulting



Map 2: Area Assessed for Project Feasibility

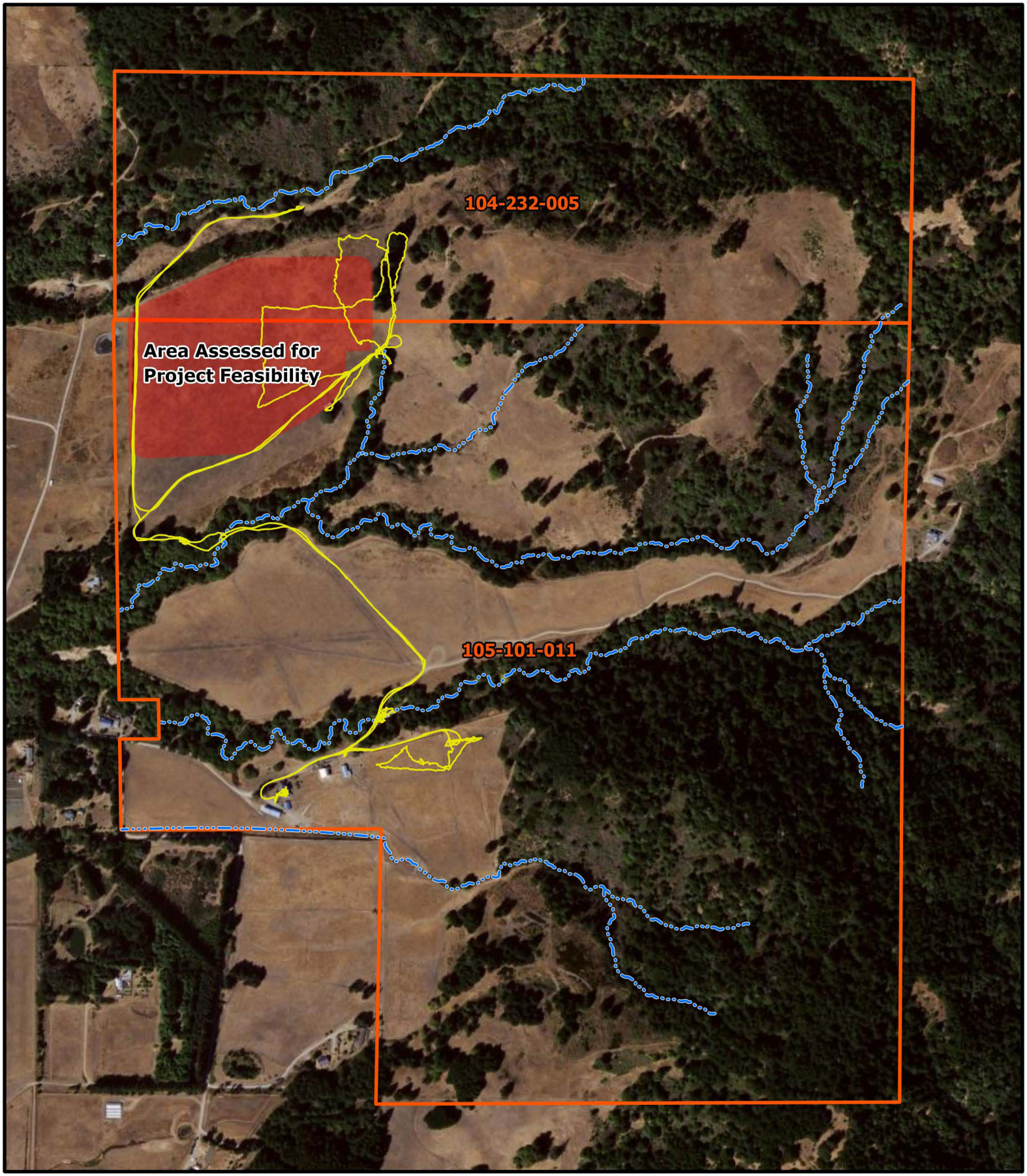
Scale: 1:7,000

0 250 500 1,000 Feet

Source: Petrolia 7.5-Minute USGS Quadrangle

- Study Area
- Area Assessed for Project Feasibility
- Class I Watercourse
- Class II Watercourse
- Class III Watercourse
- County Aquatic Resource Buffer
- State Aquatic Resource Buffer
- Bridge
- Culvert

Naiad Biological Consulting



Map 3: Biological Survey Path

Scale: 1:7,639

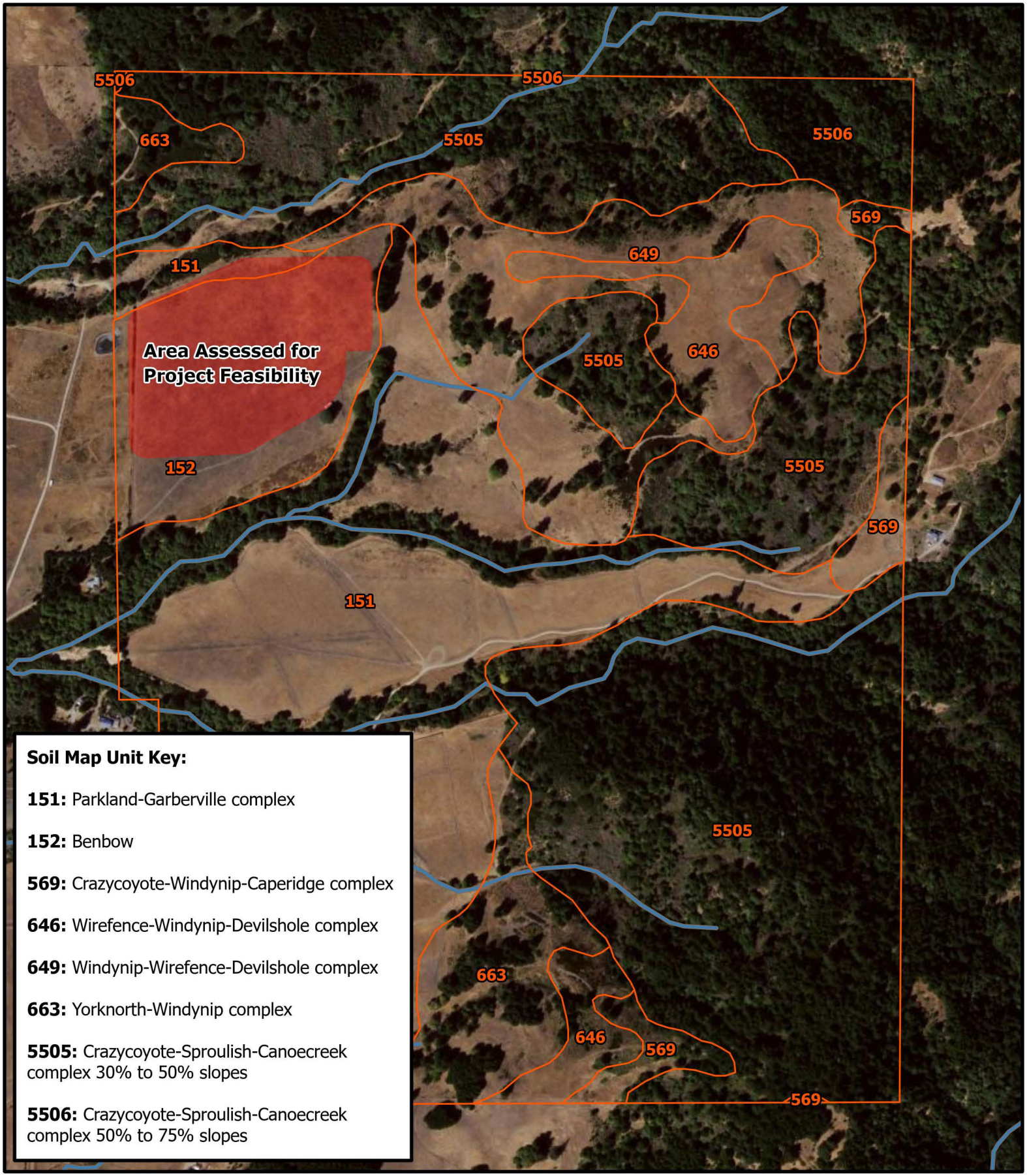
N

0 250 500 1,000 Feet

Source: Petrolia 7.5-Minute USGS Quadrangle

- Study Area
- Area Assessed for Project Feasibility
- Biological Survey Path (7/3/20)
- Class I Watercourse
- Class II Watercourse
- Class III Watercourse

Naiad Biological Consulting



Map 4: Web Soil Survey and NWI

Scale: 1:7,639

0 250 500 1,000 Feet

Source: Petrolia 7.5-Minute USGS Quadrangle

Area Assessed for Project Feasibility

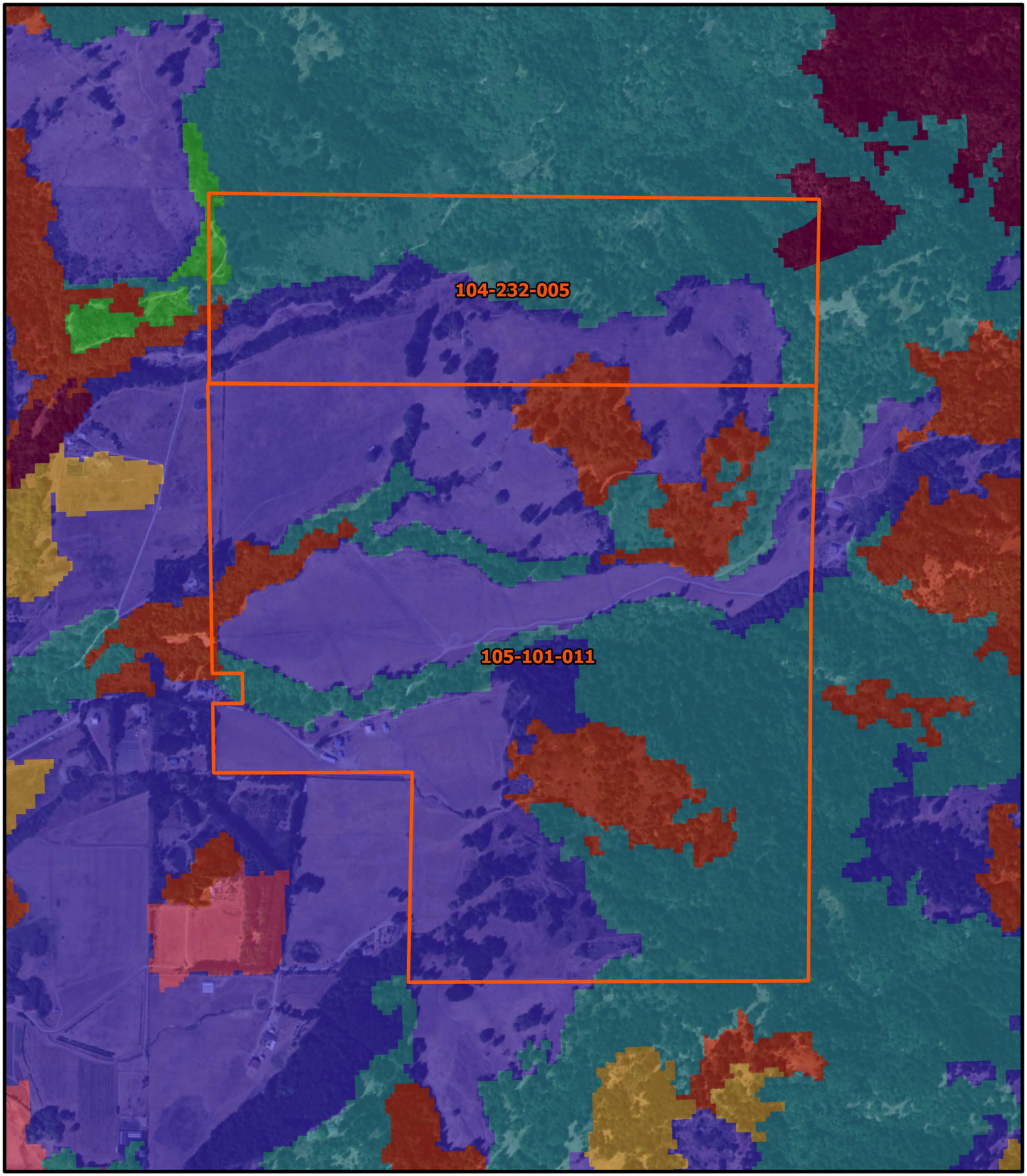
NRCS Web Soil Survey

Soil Map Units Within Study Area

USFS National Wetlands Inventory (NWI)

Riverine

Naiad Biological Consulting



Map 5: CalVeg Alliances

Scale: 1:10,000

0 250 500 1,000 Feet

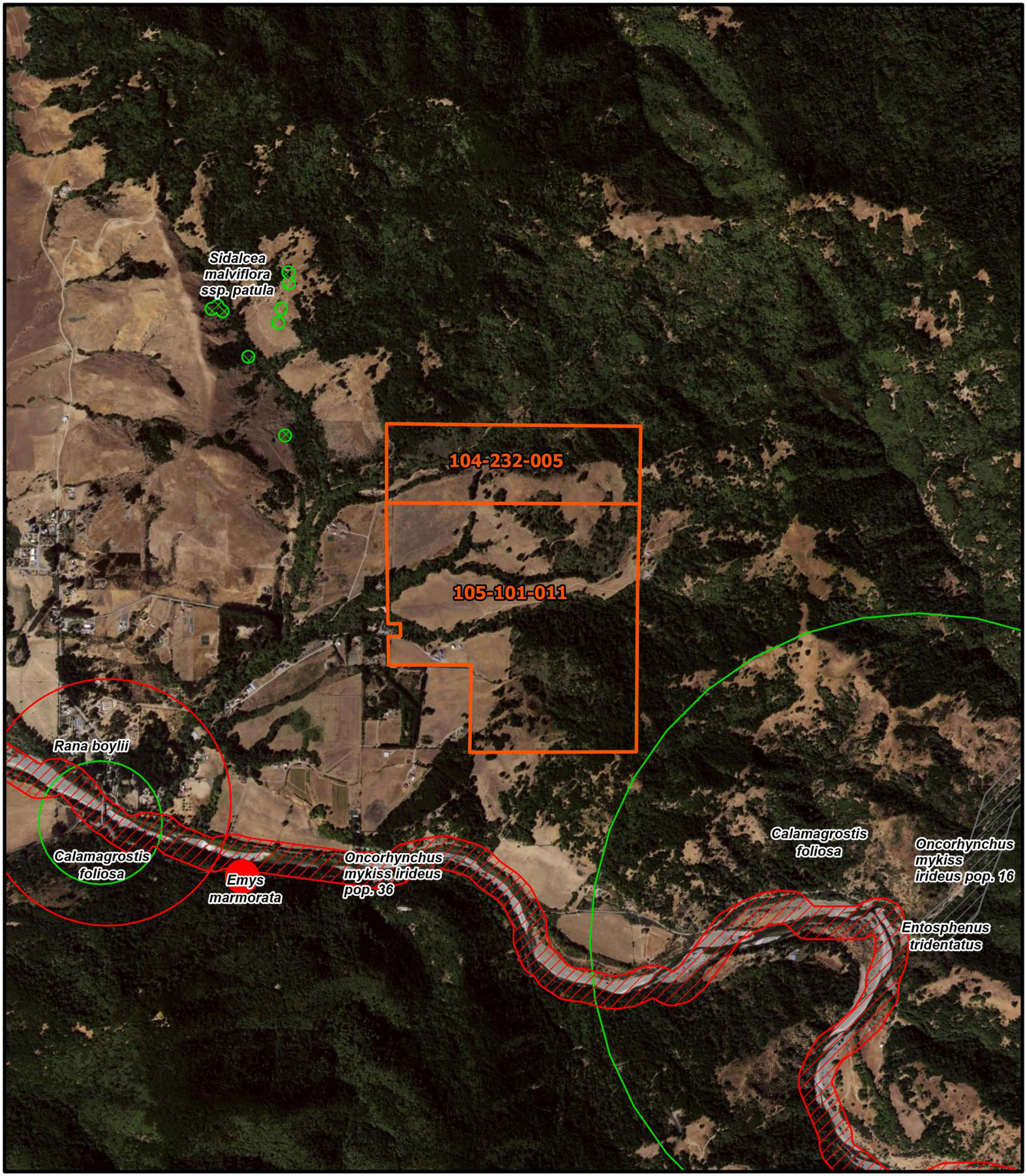
Source: Petrolia 7.5-Minute USGS Quadrangle

Study Area

Regional Dominant Alliance

- Agricultural
- Coyote Brush Alliance
- Pacific Douglas-Fir Alliance
- Annual Grasses and Forbs Alliance
- North Coastal Scrub Alliance
- California Bay Alliance
- Tanoak (Madrone) Alliance
- Black Cottonwood Alliance

Naiad Biological Consulting



Map 6: CNDDB Special Status Species

Scale: 1:24,000

0 500 1,000 2,000 Feet

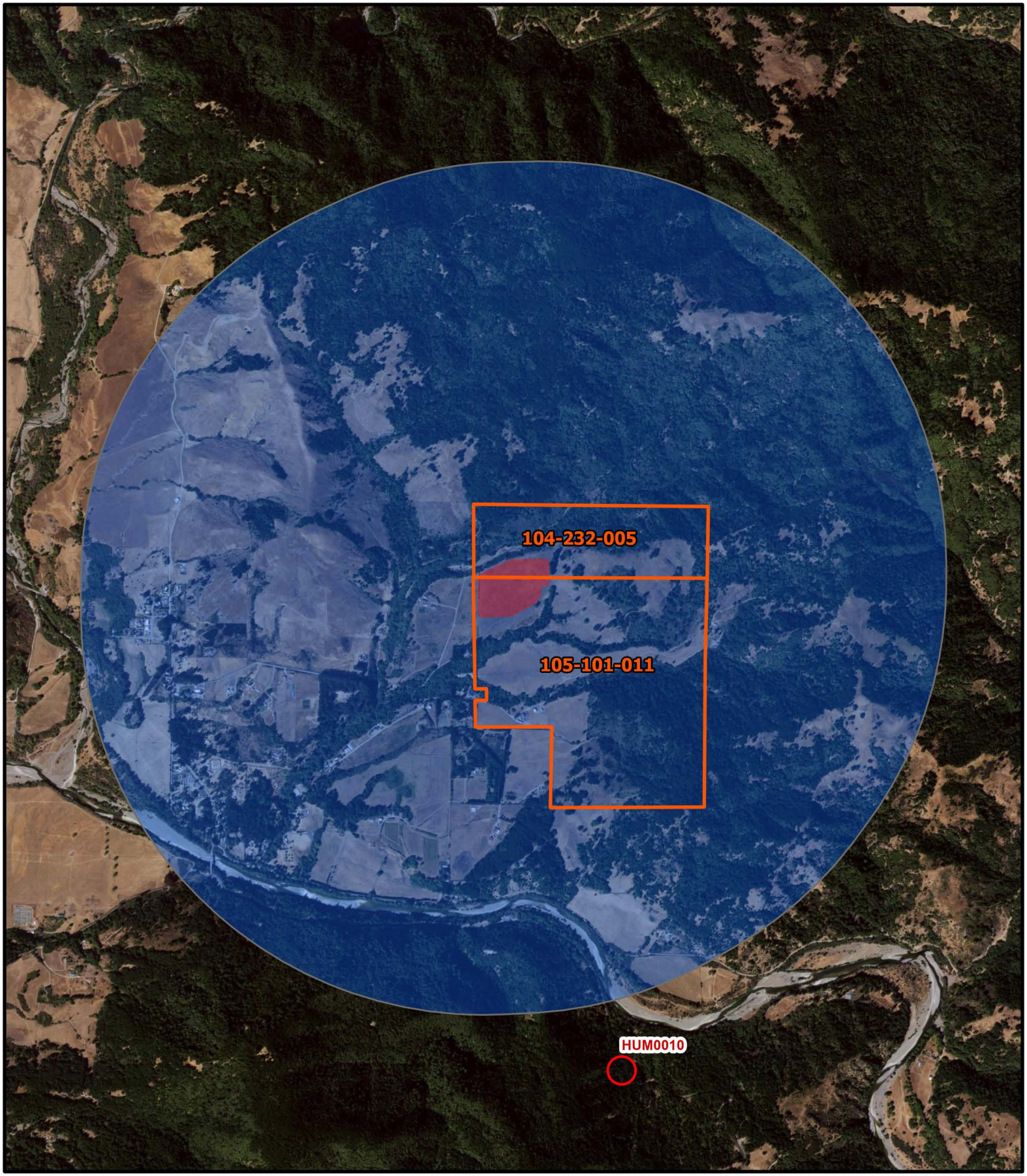
Source: Petrolia 7.5-Minute USGS Quadrangle

Study Area

CNDDB Symbology

- Plant (specific)
- Plant (circular)
- Animal (80m)
- Animal (non-specific)
- Animal (circular)
- Multiple (non-specific)

Naiad Biological Consulting



Map 7: Spotted Owl Observations

Scale: 1:26,000

0 1,000 2,000 4,000 Feet

Source: Petrolia 7.5-Minute USGS Quadrangle

Study Area

Area Assessed for Project Feasibility

1.3 Mile Buffer from Area Assessed

Spotted Owl Observations

Activity Center

Naiad Biological Consulting

Appendix D

Special-Status Species Occurrence Reports

BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Cisco Farms, LLC

Assessor Parcel Number (APN):
APN: 105 – 101 – 011 & 104 – 232 – 005

September 2021

Naiad Biological Consulting

Data Version Date:
01/02/2020

Report Generation Date:
1/25/2020

Report #2 - Observations Reported

List of observations reported by site.

Meridian, Township, Range, Section (MTRS) searched:

H_02S_02W Sections(11,14);

Type	*Date*	*Time*	*#Adults*	*Age/Sex*	*Pair*	*Nest*	*#Young*	*Latitude DD NAD83*	*Longitude DD NAD83*	*MTRS*	*Coordinate Source*
Masterowl: HUM0010 Subspecies: NORTHERN											
AC	1974-07-10		1	UU				40.304075	-124.257643	H 02S 02W 11	Contributor

Appendix E

NRCS Web Soil Survey Reports

BIOLOGICAL RECONNAISSANCE AND
PROJECT FEASIBILITY ASSESSMENT REPORT

Cisco Farms, LLC

Assessor Parcel Number (APN):
APN: 105 – 101 – 011 & 104 – 232 – 005

September 2021

Humboldt County, South Part, California

151—Parkland-Garberville complex, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: v79t
Elevation: 60 to 460 feet
Mean annual precipitation: 49 to 90 inches
Mean annual air temperature: 55 to 59 degrees F
Frost-free period: 240 to 280 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Parkland and similar soils: 45 percent
Garberville and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parkland

Setting

Landform: Alluvial fans, stream terraces
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Parent material: Alluvium derived from mixed sedimentary sources

Typical profile

Ap - 0 to 5 inches: loam
ABt - 5 to 7 inches: loam
Bt1 - 7 to 18 inches: silt loam
Bt2 - 18 to 29 inches: clay loam
Bt3 - 29 to 43 inches: clay loam
Bt4 - 43 to 61 inches: clay loam
Bt5 - 61 to 79 inches: clay loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 20 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Garberville

Setting

Landform: Alluvial fans, stream terraces
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sedimentary sources

Typical profile

Ap - 0 to 12 inches: gravelly loam
A - 12 to 19 inches: gravelly loam
Bt1 - 19 to 28 inches: gravelly clay loam
Bt2 - 28 to 39 inches: gravelly clay loam
Bt3 - 39 to 50 inches: gravelly sandy clay loam
BC - 50 to 59 inches: very gravelly sandy loam
C - 59 to 79 inches: very gravelly sandy loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Grannycreek

Percent of map unit: 5 percent
Landform: Stream terraces, alluvial fans
Landform position (two-dimensional): Backslope, footslope, toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave

Across-slope shape: Linear, concave
Hydric soil rating: Yes

Conklin

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Frenchman

Percent of map unit: 3 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Gschwend

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 9, Jun 1, 2020

Humboldt County, South Part, California

152—Benbow, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: 1nbcx
Elevation: 250 to 710 feet
Mean annual precipitation: 49 to 90 inches
Mean annual air temperature: 55 to 59 degrees F
Frost-free period: 240 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Benbow and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Benbow

Setting

Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

Ap - 0 to 6 inches: very gravelly loam
A1 - 6 to 13 inches: very gravelly loam
A2 - 13 to 27 inches: extremely gravelly loam
A3 - 27 to 34 inches: gravelly loam
A4 - 34 to 41 inches: very gravelly loam
C1 - 41 to 48 inches: extremely gravelly coarse sandy loam
C2 - 48 to 59 inches: very gravelly sandy loam
C3 - 59 to 79 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Conklin

Percent of map unit: 10 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Garberville

Percent of map unit: 5 percent
Landform: Stream terraces, alluvial fans
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 9, Jun 1, 2020

Humboldt County, South Part, California

569—Crazycoyote-Windynip-Caperidge complex, 15 to 50 percent slopes

Map Unit Setting

National map unit symbol: 1lpq6
Elevation: 200 to 3,280 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Crazycoyote and similar soils: 38 percent
Windynip and similar soils: 32 percent
Caperidge, warm, and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crazycoyote

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Linear, concave, convex
Across-slope shape: Linear
Parent material: Colluvium and/or residuum derived from sandstone and mudstone

Typical profile

Oi - 0 to 2 inches: gravelly slightly decomposed plant material
A - 2 to 6 inches: gravelly loam
Bt1 - 6 to 13 inches: gravelly loam
Bt2 - 13 to 39 inches: gravelly clay loam
Bt3 - 39 to 47 inches: very gravelly clay loam
Bt4 - 47 to 79 inches: very gravelly clay loam

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Windynip

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium and residuum derived from sandstone and mudstone

Typical profile

A1 - 0 to 4 inches: loam
A2 - 4 to 10 inches: gravelly clay loam
AB - 10 to 24 inches: gravelly clay loam
Bt1 - 24 to 35 inches: gravelly clay loam
Bt2 - 35 to 51 inches: very gravelly clay loam
Bt3 - 51 to 79 inches: very gravelly clay loam

Properties and qualities

Slope: 15 to 50 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Caperidge, Warm

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Colluvium derived from sandstone and/or residuum weathered from sandstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A1 - 1 to 6 inches: very gravelly loam
A2 - 6 to 23 inches: very gravelly loam
Bt - 23 to 35 inches: extremely gravelly loam
CBt - 35 to 55 inches: extremely gravelly sandy loam
C - 55 to 69 inches: extremely cobbly sandy loam

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Wirefence

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Sproulish

Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear, concave, convex
Hydric soil rating: No

Yorknorth, moist

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Devilshole

Percent of map unit: 2 percent
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 9, Jun 1, 2020

Humboldt County, South Part, California

646—Wirefence-Windynip-Devilshole complex, 5 to 30 percent slopes

Map Unit Setting

National map unit symbol: 1lpq7
Elevation: 200 to 3,280 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Wirefence and similar soils: 35 percent
Windynip and similar soils: 30 percent
Devilshole and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wirefence

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium and residuum derived from sandstone

Typical profile

A1 - 0 to 11 inches: loam
A2 - 11 to 21 inches: loam
A3 - 21 to 33 inches: gravelly loam
AB - 33 to 46 inches: gravelly loam
Bw - 46 to 63 inches: very gravelly fine sandy loam
C - 63 to 79 inches: very gravelly fine sandy loam

Properties and qualities

Slope: 5 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Windynip

Setting

Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium and residuum derived from sandstone and mudstone

Typical profile

A1 - 0 to 5 inches: loam
A2 - 5 to 12 inches: clay loam
A3 - 12 to 20 inches: clay loam
AB - 20 to 33 inches: clay loam
Bt1 - 33 to 59 inches: gravelly clay loam
Bt2 - 59 to 79 inches: very gravelly clay loam

Properties and qualities

Slope: 5 to 30 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Devilshole

Setting

Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex, linear

Across-slope shape: Linear, convex
Parent material: Residuum weathered from sandstone and/or mudstone

Typical profile

A - 0 to 4 inches: gravelly loam
ABt - 4 to 16 inches: very gravelly loam
Bt - 16 to 28 inches: very gravelly loam
BCt - 28 to 47 inches: extremely gravelly loam
C - 47 to 61 inches: gravel

Properties and qualities

Slope: 5 to 30 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 39 to 59 inches to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Yorknorth, moist

Percent of map unit: 6 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Crazycoyote

Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Linear, concave, convex
Across-slope shape: Linear
Hydric soil rating: No

Rainbear

Percent of map unit: 4 percent
Landform: Mountain slopes, ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 9, Jun 1, 2020

Humboldt County, South Part, California

649—Windynip-Wirefence-Devilshole complex, 30 to 50 percent slopes

Map Unit Setting

National map unit symbol: 1lpq9
Elevation: 200 to 3,280 feet
Mean annual precipitation: 49 to 100 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 240 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Windynip and similar soils: 45 percent
Wirefence and similar soils: 25 percent
Devilshole and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windynip

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Shoulder, backslope, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium and residuum derived from sandstone and mudstone

Typical profile

A1 - 0 to 8 inches: loam
A2 - 8 to 16 inches: loam
A3 - 16 to 24 inches: loam
Bt1 - 24 to 45 inches: clay loam
Bt2 - 45 to 63 inches: clay loam
C - 63 to 79 inches: gravelly sandy loam

Properties and qualities

Slope: 30 to 50 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Wirefence

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium and residuum derived from sandstone

Typical profile

A1 - 0 to 4 inches: loam
A2 - 4 to 13 inches: loam
A3 - 13 to 25 inches: loam
AB - 25 to 36 inches: gravelly loam
Bw - 36 to 47 inches: gravelly loam
BC - 47 to 79 inches: paragravelly loam

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Devilshole

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex, linear

Across-slope shape: Linear, convex
Parent material: Residuum weathered from sandstone and/or mudstone

Typical profile

A - 0 to 4 inches: gravelly loam
Bt1 - 4 to 14 inches: very gravelly clay loam
Bt2 - 14 to 29 inches: very gravelly clay loam
CBt - 29 to 46 inches: extremely gravelly loam
C - 46 to 61 inches: gravel
R - 61 to 79 inches: bedrock

Properties and qualities

Slope: 30 to 50 percent
Surface area covered with cobbles, stones or boulders: 0.5 percent
Depth to restrictive feature: 39 to 59 inches to strongly contrasting textural stratification; 49 to 73 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Crazycoyote

Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Linear, concave, convex
Across-slope shape: Linear
Hydric soil rating: No

Coyoterock

Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Linear, concave
Across-slope shape: Concave, linear
Hydric soil rating: No

Yorknorth, moist

Percent of map unit: 4 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 9, Jun 1, 2020

Humboldt County, South Part, California

663—Yorknorth-Windynip complex, 15 to 50 percent slopes

Map Unit Setting

National map unit symbol: 1lpqb
Elevation: 200 to 3,280 feet
Mean annual precipitation: 60 to 90 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 240 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Yorknorth, moist, and similar soils: 70 percent
Windynip and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Yorknorth, Moist

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Parent material: Colluvium derived from sandstone and/or earthflow deposits derived from schist

Typical profile

A - 0 to 10 inches: silt loam
BAt - 10 to 26 inches: silty clay loam
Bt1 - 26 to 35 inches: silty clay loam
Bt2 - 35 to 51 inches: silty clay loam
BCt - 51 to 71 inches: clay loam

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 20 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Windynip

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium and residuum derived from sandstone and mudstone

Typical profile

A1 - 0 to 4 inches: loam
A2 - 4 to 20 inches: loam
Bt1 - 20 to 30 inches: gravelly clay loam
Bt2 - 30 to 43 inches: gravelly clay loam
BCt - 43 to 79 inches: paragravelly clay loam

Properties and qualities

Slope: 15 to 50 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Coyoterock

Percent of map unit: 8 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank

Down-slope shape: Linear, concave
Across-slope shape: Concave, linear
Hydric soil rating: No

Crazycoyote

Percent of map unit: 3 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Linear, concave, convex
Across-slope shape: Linear
Hydric soil rating: No

Devilshole

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 9, Jun 1, 2020

Humboldt County, South Part, California

5505—Crazycoyote-Sproulish-Canoecreek complex, 30 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2mhhg
Elevation: 200 to 3,280 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Crazycoyote and similar soils: 35 percent
Sproulish and similar soils: 30 percent
Canoecreek and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crazycoyote

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex, linear, concave
Across-slope shape: Linear
Parent material: Colluvium derived from sandstone and/or residuum weathered from sandstone

Typical profile

Oi - 0 to 2 inches: gravelly slightly decomposed plant material
A1 - 2 to 5 inches: gravelly loam
A2 - 5 to 15 inches: gravelly loam
Bt1 - 15 to 25 inches: gravelly loam
Bt2 - 25 to 35 inches: very paragravelly loam
BCt - 35 to 52 inches: very paragravelly loam
C - 52 to 79 inches: paragravelly sandy loam

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Sproulish

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium derived from mudstone and/or sandstone and/or residuum weathered from mudstone and/or sandstone

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 4 inches: loam
Bt1 - 4 to 24 inches: loam
Bt2 - 24 to 39 inches: gravelly clay loam
Bt3 - 39 to 55 inches: very gravelly clay loam
BCt - 55 to 79 inches: gravelly clay loam

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Canoecreek

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium derived from mudstone and/or sandstone and/or residuum weathered from mudstone and/or sandstone

Typical profile

Oi - 0 to 2 inches: gravelly slightly decomposed plant material
A - 2 to 12 inches: very gravelly loam
Bw - 12 to 24 inches: very gravelly loam
C1 - 24 to 35 inches: very gravelly loam
C2 - 35 to 71 inches: extremely gravelly loam

Properties and qualities

Slope: 30 to 50 percent
Surface area covered with cobbles, stones or boulders: 1.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Windynip

Percent of map unit: 7 percent
Landform: Mountain slopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Kingrange

Percent of map unit: 6 percent

Landform: Mountain slopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 9, Jun 1, 2020

Humboldt County, South Part, California

5506—Crazycoyote-Sproulish-Canoecreek complex, 50 to 75 percent slopes

Map Unit Setting

National map unit symbol: 2mhhk
Elevation: 200 to 3,280 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Crazycoyote and similar soils: 35 percent
Sproulish and similar soils: 30 percent
Canoecreek and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crazycoyote

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex, linear, concave
Across-slope shape: Linear
Parent material: Colluvium derived from sandstone and/or residuum weathered from sandstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: loam
ABt - 3 to 11 inches: loam
Bt1 - 11 to 24 inches: loam
Bt2 - 24 to 42 inches: loam
Bt3 - 42 to 79 inches: loam

Properties and qualities

Slope: 50 to 75 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Sproulish

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium derived from mudstone and/or sandstone and/or residuum weathered from mudstone and/or sandstone

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 7 inches: gravelly loam
Bt1 - 7 to 11 inches: gravelly loam
Bt2 - 11 to 22 inches: gravelly loam
Bt3 - 22 to 35 inches: gravelly sandy clay loam
Bt4 - 35 to 59 inches: very gravelly sandy clay loam
BCt - 59 to 71 inches: very gravelly loam

Properties and qualities

Slope: 50 to 75 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Canoecreek

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium derived from mudstone and/or sandstone and/or residuum weathered from mudstone and/or sandstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 9 inches: gravelly sandy loam
ABw - 9 to 21 inches: very gravelly sandy loam
Bw1 - 21 to 41 inches: very gravelly sandy loam
Bw2 - 41 to 51 inches: very gravelly sandy loam
BCw - 51 to 71 inches: very gravelly sandy loam

Properties and qualities

Slope: 50 to 75 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Windynip

Percent of map unit: 6 percent
Landform: Mountain slopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Kingrange

Percent of map unit: 6 percent
Landform: Mountain slopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Rock outcrop

Percent of map unit: 3 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 9, Jun 1, 2020

Appendix F

Best Practicable Treatment or Control (BPTC) and Best Management Practices (BMP)

BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Cisco Farms, LLC

Assessor Parcel Number (APN):
APN: 105 – 101 – 011 & 104 – 232 – 005

September 2021

Cannabis Cultivation

Best Practicable Treatment or Control (BPTC) and Best Management Practices (BMP)

Adapted from

State Water Resources Control Board Cannabis General Order WQ 2017-0023-DWQ Attachment A

BBTCs and BMPs are designed to prevent, minimize, and control the discharge of waste and pollutants associated with site operations and maintenance for the aforementioned project. Many of these BMPs are considered enforceable conditions under State Water Resources Control Board *Cannabis* General Order No. WQ 2017-0023-DWQ.

No.	TERM
Land Development and Maintenance, Erosion Control, and Drainage Features	
Limitations on Earthmoving	
1.	Landowners shall not conduct grading activities for land development or alteration on slopes exceeding 50 percent grade, or as restricted by local county or city permits, ordinances, or regulations for grading, or agriculture; whichever is more stringent shall apply. The grading prohibition on slopes exceeding 50 percent does not apply to site mitigation or remediation if the landowner is issued separate WDRs or an enforcement order for the activity by the Regional Water Board Executive Officer.
2.	Finished cut and fill slopes, including side slopes between terraces, shall not exceed slopes of 50 percent and should conform to the natural pre-grade slope whenever possible.
3.	Landowners shall not drive or operate vehicles or equipment within the riparian setbacks or within waters of the state unless authorized under 404/401 CWA permits, a CDFW LSA Agreement, coverage under a water quality certification, or site-specific WDRs issued by the Regional Water Board. This requirement does not prohibit driving on established, maintained access roads that are in compliance with this various agency standards.
4.	Land development and access road construction shall be designed by qualified professionals. Landowners shall conduct all construction or land development activities to minimize grading, soil disturbance, and disturbance to aquatic and terrestrial habitat.
5.	The landowner shall control all dust related to operation activities to ensure dust does not produce sediment-laden runoff. The landowner shall implement dust control measures, including, but not limited to, pre-watering of excavation or grading sites, use of water trucks, track-out prevention, washing down vehicles or equipment before leaving a site, and prohibiting land disturbance activities when instantaneous wind speeds (gusts) exceed 25 miles per hour. Landowners shall grade access roads in dry weather while moisture is still present in soil to minimize dust and to achieve design soil compaction, or when needed use a water truck to control dust and soil moisture.
Construction Equipment Use and Limitations	
6.	Landowners shall employ spill control and containment practices to prevent the discharge of fuels, oils, solvents and other chemicals to soils and waters of the state.

7.	Landowners shall stage and store equipment, materials, fuels, lubricants, solvents, or hazardous or toxic materials in locations that minimize the potential for discharge to waters of the state. At a minimum, the following measures shall be implemented: 1. Designate an area outside the riparian setback for equipment storage, short-term maintenance, and refueling. Landowner shall not conduct any maintenance activity or refuel equipment in any location where the petroleum products or other pollutants may enter waters of the state as per Fish and Game Code section 5650 (a)(1). 2. Frequently inspect equipment and vehicles for leaks. 3. Immediately clean up leaks, drips, and spills. Except for emergency repairs that are necessary for safe transport of equipment or vehicles to an appropriate repair facility, equipment or vehicle repairs, maintenance, and washing onsite is prohibited. 4. If emergency repairs generate waste fluids, ensure they are contained and properly disposed or recycled off-site. 5. Properly dispose of all construction debris off-site. 6. Use dry cleanup methods (e.g., absorbent materials, cat litter, and/or rags) whenever possible. Sweep up, contain, and properly dispose of spilled dry materials.
Erosion Control	
8.	The landowner shall use appropriate erosion control measures to minimize erosion of disturbed areas, potting soil, or bulk soil amendments to prevent discharges of waste. Fill soil shall not be placed where it may discharge into surface water. If used, weed-free straw mulch shall be applied at a rate of two tons per acre of exposed soils and, if warranted by site conditions, shall be secured to the ground.
9.	The landowner shall not plant or seed noxious weeds. Prohibited plant species include those identified in the California Invasive Pest Plant Council's database, available at: www.cal-ipc.org/paf/. Locally native, non-invasive, and non-persistent grass species may be used for temporary erosion control benefits to stabilize disturbed land and prevent exposure of disturbed land to rainfall.
10.	Landowners shall incorporate erosion control and sediment detention devices and materials into the design, work schedule, and implementation of the project activities. The erosion prevention and sediment capture measures shall be effective in protecting water quality. • Interim erosion prevention and sediment capture measures shall be implemented within seven days of completion of grading and land disturbance activities, and shall consist of erosion prevention measures and sediment capture measures including: ○ Erosion prevention measures are required for any earthwork that uses heavy equipment (e.g., bulldozer, compactor, excavator, etc.). Erosion prevention measures may include surface contouring, slope roughening, and upslope storm water diversion. Other types of erosion prevention measures may include mulching, hydroseeding, tarp placement, revegetation, and rock slope protection. ○ Sediment capture measures include the implementation of measures such as gravel bag berms, fiber rolls, straw bale barriers, properly installed silt fences, and sediment settling basins. • Long-term erosion prevention and sediment capture measures shall be implemented as soon as possible and prior to the onset of fall and winter precipitation. Long-term measures may include the use of heavy equipment to reconfigure access roads or improve access road drainage, installation of properly-sized culverts, gravel placement on steeper grades, and stabilization of previously disturbed land. • Maintenance of all erosion protection and sediment capture measures is required year round. Early monitoring allows for identification of problem areas or underperforming erosion or sediment control measures. Verification of the effectiveness of all erosion prevention and sediment capture measures is required as part of winterization activities.
11.	Landowners shall only use geotextiles, fiber rolls, and other erosion control measures made of loose-weave mesh (e.g., jute, coconut (coir) fiber, or from other products without welded weaves). To minimize the risk of ensnaring and strangling wildlife, Landowners shall not use synthetic (e.g., plastic or nylon) monofilament netting materials for erosion control for any project activities. This prohibition includes photo- or bio-degradable plastic netting.

12.	Cultivation sites constructed on or near slopes with a slope greater than or equal to 30 percent shall be inspected for indications of instability. Indications of instability include the occurrence of slope failures at nearby similar sites, weak soil layers, geologic bedding parallel to slope surface, hillside creep (trees, fence posts, etc. leaning downslope), tension cracks in the slope surface, bulging soil at the base of the slope, and groundwater discharge from the slope. If indicators of instability are present, the landowner shall consult with a qualified professional to design measures to stabilize the slope to prevent sediment discharge to surface waters.
13.	For areas outside of riparian setbacks or for upland areas, Landowners shall ensure that rock placed for slope protection is the minimum amount necessary and is part of a design that provides for native plant revegetation. If retaining walls or other structures are required to provide slope stability, they shall be designed by a qualified professional.
14.	Landowners shall monitor erosion control measures during and after each storm event that produces at least 0.5 in/day or 1.0 inch/7 days of precipitation, and repair or replace, as needed, ineffective erosion control measures immediately.
Access Road/Land Development and Drainage	
15.	Access roads shall be constructed consistent with the requirements of California Code of Regulations Title 14, Chapter 4. The Road Handbook describes how to implement the regulations and is available at <http://www.pacificwatershed.com/PWA-publications- library>. Existing access roads shall be upgraded to comply with the Road Handbook.
16.	Landowners shall obtain all required permits and approvals prior to the construction of any access road constructed for project activities. Permits may include section 404/401 CWA permits, Regional Water Board WDRs (when applicable), CDFW LSA Agreement, and county or local agency permits.
17.	Landowners shall ensure that all access roads are hydrologically disconnected to receiving waters to the extent possible by installing disconnecting drainage features, increasing the frequency of (inside) ditch drain relief as needed, constructing out-sloped roads, constructing energy dissipating structures, avoiding concentrating flows in unstable areas, and performing inspection and maintenance as needed to optimize the access road performance.
18.	New access road alignments should be constructed with grades (slopes) of 3- to 8- percent, or less, wherever possible. Forest access roads should generally be kept below 12-percent except for short pitches of 500 feet or less where road slopes may go up to 20- percent. These steeper access road slopes should be paved or rock surfaced and equipped with adequate drainage. Existing access roads that do not comply with these limits shall be inspected by a qualified professional to determine if improvements are needed.
19.	Landowners shall decommission or relocate existing roads away from riparian setbacks whenever possible. Roads that are proposed for decommissioning shall be abandoned and left in a condition that provides for long-term, maintenance-free function of drainage and erosion controls. Abandoned roads shall be blocked to prevent unauthorized vehicle traffic.
20.	If site conditions prohibit drainage structures (including rolling dips and ditch-relief culverts) at adequate intervals to avoid erosion, the landowner shall use bioengineering techniques[12] as the preferred measure to minimize erosion (e.g., live fascines). If bioengineering cannot be used, then engineering fixes such as armoring (e.g., rock of adequate size and depth to remain in place under traffic and flow conditions) and velocity dissipaters (e.g., gravel-filled "pillows" in an inside ditch to trap sediment) may be used for problem sites. The maximum distance between water breaks shall not exceed those defined in the Road Handbook.
21.	Landowners shall have a qualified professional design the optimal access road alignment, surfacing, drainage, maintenance requirements, and spoils handling procedures.
22.	Landowners shall ensure that access road surfacing, especially within a segment leading to a waterbody, is sufficient to minimize sediment delivery to the wetland or waterbody and maximize access road integrity. Road surfacing may include pavement, chip-seal, lignin, rock, or other material appropriate for timing and nature of use. All access roads that will be used for winter or wet weather hauling/traffic shall be surfaced. Steeper access road grades require higher quality rock (e.g., crushed angular versus river-run) to remain in place. The use of asphalt grindings is prohibited.
23.	Landowners shall install erosion control measures on all access road approaches to surface water diversion sites to reduce the generation and transport of sediment to streams.

24.	Landowners shall ensure that access roads are out-sloped whenever possible to promote even drainage of the access road surface, prevent the concentration of storm water flow within an inboard or inside ditch, and to minimize disruption of the natural sheet flow pattern off a hill slope to a stream.
25.	If unable to eliminate inboard or inside ditches, the landowner shall ensure adequate ditch relief culverts to prevent down-cutting of the ditch and to reduce water runoff concentration, velocity, and erosion. Ditches shall be designed and maintained as recommended by a qualified professional. To avoid point-source discharges, inboard ditches and ditch relief culverts shall be discharged onto vegetated or armored slopes that are designed to dissipate and prevent runoff channelization. Inboard ditches and ditch relief culverts shall be designed to ensure discharges into natural stream channels or watercourses are prevented.
26.	Landowners shall ensure that access roads are not allowed to develop or show evidence of significant surface rutting or gullying. Landowners shall use water bars and rolling dips as designed by a qualified professional to minimize access road surface erosion and dissipate runoff.
27.	Landowners shall only grade ditches when necessary to prevent erosion of the ditch, undermining of the banks, or exposure of the toe of the cut slope to erosion. Landowners shall not remove more vegetation than necessary to keep water moving, as vegetation prevents scour and filters out sediment.
28.	Access road storm water drainage structures shall not discharge onto unstable slopes, earthen fills, or directly to a waterbody. Drainage structures shall discharge onto stable areas with straw bales, slash, vegetation, and/or rock riprap.
29.	Sediment control devices (e.g., check dams, sand/gravel bag barriers, etc.) shall be used when it is not practical to disperse storm water before discharge to a waterbody. Where potential discharge to a wetland or waterbody exists (e.g., within 200 feet of a waterbody) access road surface drainage shall be filtered through vegetation, slash, other appropriate material, or settled into a depression with an outlet with adequate drainage. Sediment basins shall be engineered and properly sized to allow sediment settling, spillway stability, and maintenance activities.
Drainage Culverts (See also Watercourse Crossings)	
30.	Landowners shall regularly inspect ditch-relief culverts and clear them of any debris or sediment. To reduce ditch-relief culvert plugging by debris, Landowners shall use 15- to 24-inch diameter pipes, at minimum. In forested areas with a potential for woody debris, a minimum 18-inch diameter pipe shall be used to reduce clogging. Ditch relief culverts shall be designed by a qualified professional based on site-specific conditions.
31.	Landowners shall ensure that all permanent watercourse crossings that are constructed or reconstructed are capable of accommodating the estimated 100-year flood flow, including debris and sediment loads. Watercourse crossings shall be designed and sized by a qualified professional.
Cleanup, Restoration, and Mitigation	
32.	Landowners shall limit disturbance to existing grades and vegetation to the actual site of the cleanup or remediation and any necessary access routes.
33.	Landowners shall avoid damage to native riparian vegetation. All exposed or disturbed land and access points within the stream and riparian setback with damaged vegetation shall be restored with regional native vegetation of similar native species. Riparian trees over four inches diameter at breast height shall be replaced by similar native species at a ratio of three to one (3:1). Restored areas must be mulched, using at least 2 to 4 inches of weed-free, clean straw or similar biodegradable mulch over the seeded area. Mulching shall be completed within 30 days after land disturbance activities in the areas cease. Revegetation planting shall occur at a seasonally appropriate time until vegetation is restored to pre-operation or pre-Legacy condition or better. Landowners shall stabilize and restore any temporary work areas with native vegetation to pre-operation or pre-Legacy conditions or better. Vegetation shall be planted at an adequate density and variety to control surface erosion and re-generate a diverse composition of regional native vegetation of similar native species.
34.	Landowners shall avoid damage to oak woodlands. Landowner shall plant three oak trees for every one oak tree damaged or removed. Trees may be planted in groves in order to maximize wildlife benefits and shall be native to the local county.

35.	Landowners shall develop a revegetation plan for: • All exposed or disturbed riparian vegetation areas, • any oak trees that are damaged or removed, and • temporary work areas. Landowners shall develop a monitoring plan that evaluates the revegetation plan for five years. Landowners shall maintain annual inspections for the purpose of assessing an 85 percent survival and growth of revegetated areas within a five-year period. The presence of exposed soil shall be documented for three years following revegetation work. If the revegetation results in less than an 85 percent success rate, the unsuccessful vegetation areas shall be replanted. Landowners shall identify the location and extent of exposed soil associated with the site; pre- and post-revegetation work photos; diagram of all areas revegetated, the planting methods, and plants used; and an assessment of the success of the revegetation program. Landowners shall maintain a copy of the revegetation plan and monitoring results onsite and make them available, upon request, to Water Boards staff or authorized representatives. An electronic copy of monitoring results is acceptable in Portable Document Format (PDF).
36.	Landowners shall revegetate soil exposed as a result of project activities with native vegetation by live planting, seed casting, or hydroseeding within seven days of exposure.
37.	Landowners shall prevent the spread or introduction of exotic plant species to the maximum extent possible by cleaning equipment before delivery to the Site and before removal, restoring land disturbance with appropriate native species, and post-project activities monitoring and control of exotic species.
Stream Crossing Installation and Maintenance	
Limitations on Work in Watercourses and Permanently Ponded Areas	
38.	Landowners shall obtain all applicable permits and approvals prior to doing any work in or around waterbodies or within the riparian setbacks. Permits may include section 404/401 CWA permits, Regional Water Board WDRs (when applicable), and a CDFW LSA Agreement.
39.	Landowners shall avoid or minimize temporary stream crossings. When necessary, temporary stream crossings shall be located in areas where erosion potential and damage to the existing habitat is low. Landowners shall avoid areas where runoff from access roadway side slopes and natural hillsides will drain and flow into the temporary crossing. Temporary stream crossings that impede fish passage are strictly prohibited on permanent or seasonal fish-bearing streams.
40.	Landowners shall avoid or minimize use of heavy equipment[13] in a watercourse. If use is unavoidable, heavy equipment may only travel or work in a waterbody with a rocky or cobbled channel. Wood, rubber, or clean native rock temporary work pads shall be used on the channel bottom prior to use of heavy equipment to protect channel bed and preserve channel morphology. Temporary work pads and other channel protection shall be removed as soon as possible once the use of heavy equipment is complete.
41.	Landowners shall avoid or minimize work in or near a stream, creek, river, lake, pond, or other waterbody. If work in a waterbody cannot be avoided, activities and associated workspace shall be isolated from flowing water by directing the water around the work site. If water is present, then the landowner shall develop a site-specific plan prepared by a qualified professional. The plan shall consider partial or full stream diversion and dewatering. The plan shall consider the use of coffer dams upstream and downstream of the work site and the diversion of all flow from upstream of the upstream dam to downstream of the downstream dam, through a suitably sized pipe with intake screens that protect and prevent impacts to fish and wildlife. Project activities and associated work shall be performed outside the waterbody from the top of the bank to the maximum extent possible.
Temporary Watercourse Diversion and Dewatering: All Live Watercourses	
42.	Landowners shall ensure that coffer dams are constructed prior to commencing work and as close as practicable upstream and downstream of the work area. Cofferdam construction using offsite materials, such as clean gravel bags or inflatable dams, is preferred. Thick plastic may be used to minimize leakage but shall be completely removed and properly disposed of upon work completion. If the coffer dams or stream diversion fail, the landowner shall repair them immediately.

43.	When any dam or other artificial obstruction is being constructed, maintained, or placed in operation, the landowner shall allow sufficient water at all times to pass downstream to maintain aquatic life below the dam pursuant to Fish and Game Code section 5937.
44.	If possible, gravity flow is the preferred method of water diversion. If a pump is used, the landowner shall ensure that the pump is operated at the rate of flow that passes through the site. Pumping rates shall not dewater or impound water on the upstream side of the coffer dam. When diversion pipe is used it shall be protected from project activities and maintained to prevent debris blockage.
45.	Landowners shall only divert water such that water does not scour the channel bed or banks at the downstream end. Landowner shall divert flow in a manner that prevents turbidity, siltation, and pollution and provides flows to downstream reaches. Landowners shall provide flows to downstream reaches during all times that the natural flow would have supported aquatic life. Flows shall be of sufficient quality and quantity, and of appropriate temperature to support fish and other aquatic life both above and below the diversion. Block netting and intake screens shall be sized to protect and prevent impacts to fish and wildlife.
46.	Once water has been diverted around the work area, Landowners may dewater the site to provide an adequately dry work area. Any muddy or otherwise contaminated water shall be pumped to a settling tank, dewatering filter bag, or upland area, or to another location approved by CDFW or the appropriate Regional Water Board Executive Officer prior to re-entering the watercourse.
47.	Upon completion of work, Landowners shall immediately remove the flow diversion structure in a manner that allows flow to resume with a minimum of disturbance to the channel substrate and that minimizes the generation of turbidity.
Watercourse Crossings	
48.	Landowners shall ensure that watercourse crossings are designed by a qualified professional.
49.	Landowners shall ensure that all access road watercourse crossing structures allow for the unrestricted passage of water and shall be designed to accommodate the estimated 100-year flood flow and associated debris (based upon an assessment of the streams potential to generate debris during high flow events). Consult CAL FIRE 100-year Watercourse Crossings document for examples and design calculations, available at: http://calfire.ca.gov/resource_mgt/downloads/100%20yr%20revised%208-08-17%20(final-a).pdf.
50.	Landowners shall ensure that watercourse crossings allow migration of aquatic life during all life stages supported or potentially supported by that stream reach. Design measures shall be incorporated to ensure water depth and velocity does not inhibit migration of aquatic life. Any access road crossing structure on watercourses that supports fish shall be constructed for the unrestricted passage of fish at all life stages, and should use the following design guidelines: • CDFW's *Culvert Criteria for Fish Passage;* • CDFW's *Salmonid Stream Habitat Restoration Manual, Volume 2, Part IX: Fish Passage Evaluation at Stream Crossings; and* • National Marine Fisheries Service, Southwest Region *Guidelines for Salmonid Passage at Stream Crossings.*
51.	Landowners shall conduct regular inspection and maintenance of stream crossings to ensure crossings are not blocked by debris. Refer to California Board of Forestry Technical Rule No. 5 available at: http://www.calforests.org/wp- content/uploads/2013/10/Adopted-TRA5.pdf.
52.	Landowners shall only use rock fords for temporary seasonal crossings on small watercourses where aquatic life passage is not required during the time period of use. Rock fords shall be oriented perpendicular to the flow of the watercourse and designed to maintain the range of surface flows that occur in the watercourse. When constructed, rock shall be sized to withstand the range of flow events that occur at the crossing and rock shall be maintained at the rock ford to completely cover the channel bed and bank surfaces to minimize soil compaction, rutting, and erosion. Rock must extend on either side of the ford up to the break in slope. The use of rock fords as watercourse crossings for all-weather access road use is prohibited.
53.	Landowners shall ensure that culverts used at watercourse crossings are designed to direct flow and debris toward the inlet (e.g., use of wing-walls, pipe beveling, rock armoring, etc.) to prevent erosion of road fill, debris blocking the culvert, and watercourses from eroding a new channel.

54.	Landowners shall regularly inspect and maintain the condition of access roads, access road drainage features, and watercourse crossings. At a minimum, Landowners shall perform inspections prior to the onset of fall and winter precipitation and following storm events that produce at least 0.5 in/day or 1.0 inch/7 days of precipitation. Landowners are required to perform all of the following maintenance: • Remove any wood debris that may restrict flow in a culvert. • Remove sediment that impacts access road or drainage feature performance. • Place any removed sediment in a location outside the riparian setbacks and stabilize the sediment. • Maintain records of access road and drainage feature maintenance and consider redesigning the access road to improve performance and reduce maintenance needs.
55.	Landowners shall compact access road crossing approaches and fill slopes during installation and shall stabilize them with rock or other appropriate surface protection to minimize surface erosion. When possible, Landowners shall ensure that access roads over culverts are equipped with a critical dip to ensure that, if the culvert becomes blocked or plugged, water can flow over the access road surface without washing away the fill prism. Access road crossings where specific conditions do not allow for a critical dip or in areas with potential for significant debris accumulation, shall include additional measures such as emergency overflow culverts or oversized culverts that are designed by a qualified professional.
56.	Landowners shall ensure that culverts used at watercourse crossings are: 1) installed parallel to the watercourse alignment to the extent possible, 2) of sufficient length to extend beyond stabilized fill/sidecast material, and 3) embedded or installed at the same level and gradient of the streambed in which they are being placed to prevent erosion.
Soil Disposal and Spoils Management	
57.	Landowners shall store soil, construction, and waste materials outside the riparian setback except as needed for immediate construction needs. Such materials shall not be stored in locations of known slope instability or where the storage of construction or waste material could reduce slope stability.
58.	Landowners shall separate large organic material (e.g., roots, woody debris, etc.) from soil materials. Landowners shall either place the large organic material in long-term, upland storage sites, or properly dispose of these materials offsite.
59.	Landowners shall store erodible soil, soil amendments, and spoil piles to prevent sediment discharges in storm water. Storage practices may include use of tarps, upslope land contouring to divert surface flow around the material, or use of sediment control devices (e.g., silt fences, straw wattles, etc.).
60.	Landowners shall contour and stabilize stored spoils to mimic natural slope contours and drainage patterns (as appropriate) to reduce the potential for fill saturation and slope failure.
61.	For soil disposal sites Landowners shall: • revegetate soil disposal sites with a mix of native plant species, • cover the seeded and planted areas with mulched straw at a rate of two tons per acre, and • apply non-synthetic netting or similar erosion control fabric (e.g., jute) on slopes greater than 2:1 if the site is erodible.
62.	Landowners shall haul away and properly dispose of excess soil and other debris as needed to prevent discharge to waters of the state.
Riparian and Wetland Protection and Management	
63.	Landowners shall not disturb aquatic or riparian habitat, such as pools, spawning sites, large wood, or shading vegetation unless authorized under a CWA section 404 permit, CWA section 401 certification, Regional Water Board WDRs (when applicable), or a CDFW LSA Agreement.
64.	Landowners shall maintain existing, naturally occurring, riparian vegetative cover (e.g., trees, shrubs, and grasses) in aquatic habitat areas to the maximum extent possible to maintain riparian areas for streambank stabilization, erosion control, stream shading and temperature control, sediment and chemical filtration, aquatic life support, wildlife support, and to minimize waste discharge.
Water Storage and Use	
Water Supply, Diversion, and Storage	

65.	Landowners shall only install, maintain, and destroy wells in compliance with county, city, and local ordinances and with California Well Standards as stipulated in California Department of Water Resources Bulletins 74-90 and 74-81.
66.	All water diversions for project activities from a surface stream, subterranean stream flowing through a known and definite channel (e.g., groundwater well diversions from subsurface stream flows), or other surface waterbody are subject to the surface water Numeric and Narrative Instream Flow Requirements. This includes lakes, ponds, and springs (unless the spring is deemed exempt by the Deputy Director). See Section 3. Numeric and Narrative Instream Flow Requirements of this Attachment A for more information.
67.	Groundwater diversions may be subject to additional requirements, such as a forbearance period, if the State Water Board determines those requirements are reasonably necessary.
68.	Landowners are encouraged to use appropriate rainwater catchment systems to collect from impermeable surfaces (e.g., roof tops, etc.) during the wet season and store storm water in tanks, bladders, or off-stream engineered reservoirs to reduce the need for surface water or groundwater diversions.
69.	Landowners shall not divert surface water unless it is diverted in accordance with an existing water right that specifies, as appropriate, the source, location of the point of diversion, purpose of use, place of use, and quantity and season of diversion. Landowners shall maintain documentation of the water right at the project site. Documentation of the water right shall be available for review and inspection by the Water Boards, CDFW, and any other authorized representatives of the Water Boards or CDFW.
70.	Landowners shall ensure that all water diversion facilities are designed, constructed, and maintained so they do not prevent, impede, or tend to prevent the passing of fish, as defined by Fish and Game Code section 45, upstream or downstream, as required by Fish and Game Code section 5901. This includes but is not limited to the supply of water at an appropriate depth, temperature, and velocity to facilitate upstream and downstream aquatic life movement and migration. Landowners shall allow sufficient water at all times to pass past the point of diversion to keep in good condition any fish that may be planted or exist below the point of diversion as defined by Fish and Game Code section 5937. Landowners shall not divert water in a manner contrary to or inconsistent with these Requirements.
71.	Landowners issued an SIUR by the State Water Board shall not divert surface water unless in compliance with all additional SIUR conditions required by CDFW.
72.	Water diversion facilities shall include satisfactory means for bypassing water to satisfy downstream prior rights and any requirements of policies for water quality control, water quality control plans, water quality certifications, waste discharge requirements, or other local, state or federal instream flow requirements. Landowners shall not divert in a manner that results in injury to holders of legal downstream senior rights. Landowners may be required to curtail diversions should diversion result in injury to holders of legal downstream senior water rights or interfere with maintenance of downstream instream flow requirements.
73.	Fuel powered (e.g., gas, diesel, etc.) diversion pumps shall be located in a stable and secure location outside of the riparian setbacks unless authorized under a 404/401 CWA permits, a CDFW LSA Agreement, coverage under a water quality certification, or site-specific WDRs issued by the Regional Water Board. Use of non-fuel powered diversion pumps (solar, electric, gravity, etc.) is encouraged. In all cases, all pumps shall: 1. be properly maintained, 2. have suitable containment to ensure any spills or leaks do not enter surface waterbodies or groundwater, and 3. have sufficient overhead cover to prevent exposure of equipment to precipitation.
74.	No water shall be diverted unless the landowner is operating the water diversion facility with a CDFW-approved water-intake screen (e.g. fish screen). The water intake screen shall be designed and maintained in accordance with screening criteria approved by CDFW. The screen shall prevent wildlife from entering the diversion intake and becoming entrapped. The landowner shall contact the regional CDFW Office, LSA Program for information on screening criteria for diversion(s).[15] The landowner shall provide evidence that demonstrates that the water intake screen is in good condition whenever requested by the Water Boards or CDFW. Points of re-diversion from off-stream storage facilities that are open to the environment shall have a water intake screen, as required by CDFW.
75.	Landowners shall inspect, maintain, and clean water intake screens and bypass appurtenances as directed by CDFW to ensure proper operation for the protection of fish and wildlife.

76.	Landowners shall not obstruct, alter, dam, or divert all or any portion of a natural watercourse prior to obtaining all applicable permits and approvals. Permits may include a valid water right, 404/401 CWA permits, a CDFW LSA Agreement, coverage under a water quality certification, or site-specific WDRs issued by the Regional Water Board.
77.	Landowners shall plug, block, cap, disconnect, or remove the diversion intake associated with project activities during the surface water forbearance period, unless the diversion intake is used for other beneficial uses, to ensure no water is diverted during that time.
78.	Landowners shall not divert from a surface water or from a subterranean stream for the project site at a rate more than a maximum instantaneous diversion rate of 10 gallons per minute, unless authorized under an existing appropriative water right.
82.	Onstream storage reservoirs are prohibited unless either: · The landowner has an existing water right with irrigation as a designated use, issued prior to October 31, 2017, that authorizes the onstream storage reservoir, or · The landowner obtains an appropriative water right permit with irrigation as a designated use prior to diverting water from an onstream storage reservoir for the project site. Landowners with a pending application or an unpermitted onstream storage reservoir shall not divert for project activities until the landowner has obtain a valid water right.
83.	Landowners are encouraged to install separate storage systems for water diverted for irrigation and water diverted for any other beneficial uses,[16] or otherwise shall install separate measuring devices to quantify diversion to and from each storage facility, including the quantity of water diverted and the quantity, place, and purpose of use (e.g., crop irrigation, domestic, etc.) for the stored water.
84.	The landowner shall install and maintain a measuring device(s) for surface water or subterranean stream diversions. The measuring device shall be, at a minimum equivalent to the requirements for direct diversions greater than 10 acre-feet per year in California Code of Regulations, Title 23, Division 3, Chapter 2.7. The measuring device(s) shall be located as close to the point of diversion as reasonable. Landowners shall maintain daily diversion records for water diverted. Landowners shall maintain separate records that document the amount of water used for project activities separated out from the amount of water used for other irrigation purposes and other beneficial uses of water (e.g., domestic, fire protection, etc.). Landowners shall maintain daily diversion records at the site and shall make the records available for review or by request by the Water Boards CDFW, or any other authorized representatives of the Water Boards or CDFW. Daily diversion records shall be retained for a minimum of five years. Compliance with this term is required for any surface water diversion, even those under 10 acre-feet per year.
85.	The State Water Board intends to develop and implement a basin-wide program for real- time electronic monitoring and reporting of diversions, withdrawals, releases and streamflow in a standardized format if and when resources become available. Such real- time reporting will be required upon a showing by the State Water Board that the program and the infrastructure are in place to accept real-time electronic reports. Implementation of the reporting requirements shall not necessitate amendment to this Requirement.
86.	Landowners shall not use off-stream storage reservoirs and ponds to store water for irrigation unless they are sited and designed or approved by a qualified professional in compliance with Division of Safety of Dams (DSOD), county, and/or city requirements, as applicable. If the DSOD, county, and/or city do not have established requirements they shall be designed consistent with the Natural Resource Conservation Service National Engineering Manual. Reservoirs shall be designed with an adequate overflow outlet that is protected and promotes the dispersal and infiltration of flow and prevents channelization. All off-stream storage reservoirs and ponds shall be designed, managed, and maintained to accommodate average annual winter period precipitation and storm water inputs to reduce the potential for overflow. Landowners shall plant native vegetation along the perimeter of the reservoir in locations where it does not impact the structural integrity of the reservoir berm or spillway. The landowner shall control vegetation around the reservoir berm and spillway to allow for visual inspection of berm and spillway condition and control burrowing animals as necessary.

87.	Landowners shall implement an invasive species management plan prepared by a Qualified Biologist for any existing or proposed water storage facilities that are open to the environment. The plan shall include, at a minimum, an annual survey for bullfrogs and other invasive aquatic species. If bullfrogs or other invasive aquatic species are identified, eradication measures shall be implemented under the direction of a qualified biologist, if appropriate after consultation with CDFW (pursuant to Fish and Game Code section 6400). Eradication methods can be direct or indirect. Direct methods may include hand- held dip net, hook and line, lights, spears, gigs, or fish tackle under a fishing license (pursuant to Fish and Game Code section 6855). An indirect method may involve seasonally timed complete dewatering and a drying period of the off-stream storage facility under a Permit to Destroy Harmful Species (pursuant to Fish and Game Code section 5501) issued by CDFW.
88.	Water storage bladders are not encouraged for long-term use. If bladders are used, the landowner shall ensure that the bladder is designed and properly installed to store water and that the bladder is sited to minimize the potential for water to flow into a watercourse in the event of a catastrophic failure. If a storage bladder has been previously used, the landowner shall carefully inspect the bladder to confirm its integrity and confirm the absence of any interior residual chemicals prior to resuming use. Landowners shall periodically inspect water storage bladders and containment features to ensure integrity. Water storage bladders shall be properly disposed of or recycled and not resold when assurance of structural integrity is no longer guaranteed.
89.	Landowners shall not use water storage bladders unless the bladder is safely contained within a secondary containment system with sufficient capacity to capture 110 percent of a bladder's maximum possible contents in the event of bladder failure (i.e., 110 percent of bladder's capacity). Secondary containment systems shall be of sufficient strength and stability to withstand the forces of released contents in the event of catastrophic bladder failure. In addition, secondary containment systems that are open to the environment shall be designed and maintained with sufficient capacity to accommodate precipitation and storm water inputs from a 25-year, 24-hour storm event.
90.	Landowners shall not cause or allow any overflow from off-stream water storage facilities that are closed to the environment (e.g., tanks and bladders) if the off-stream facilities are served by a diversion from surface water or groundwater. Landowners shall regularly inspect for and repair all leaks of the diversion and storage system.
91.	Water storage tanks, bladders, and other off-stream water storage facilities that are closed to the environment shall not be located in a riparian setback or next to equipment that generates heat. Landowners shall place water storage tanks, bladders, and other off-stream water storage facilities that are closed to the environment in areas that allow for ease of installation, access, maintenance, and minimize road development.
92.	Landowners shall install vertical and horizontal tanks according to manufacturer's specifications and shall place tanks on properly compacted soil that is free of rocks and sharp objects and capable of bearing the weight of the tank and its maximum contents with minimal settlement. Tanks shall not be located in areas of slope instability. Landowners shall install water storage tanks capable of containing more than 8,000 gallons only on a reinforced concrete pad providing adequate support and enough space to attach a tank restraint system (anchor using the molded-in tie down lugs with moderate tension, being careful not to over-tighten) per the recommendations of a qualified professional.
93.	To prevent rupture or overflow and runoff, Landowners shall only use water storage tanks and bladders equipped with a float valve, or equivalent device, to shut off diversion when storage systems are full. Landowners shall install any other measures necessary to prevent overflow of storage systems to prevent runoff and the diversion of more water than can be used and/or stored.
94.	Landowners shall ensure that all vents and other openings on water storage tanks are designed to prevent the entry and/or entrapment of wildlife.
95.	Landowners shall retain, for a minimum of five years, appropriate documentation for any hauled water[18] used for irrigation. Documentation for hauled water shall include, for each delivery, all of the following: 1. A receipt that shows the date of delivery and the name, address, license plate number, and license plate issuing state for the water hauler, 2. A copy of the Water Hauler's License (California Health and Safety Code section 111120), 3. A copy of proof of the Water Hauler's water right, groundwater well, or other authorization to take water, and the location of the water source, and 4. The quantity of water delivered or picked up from a water source, in gallons. Documentation shall be made available, upon request, to Water Boards or CDFW staff and any other authorized representatives of the Water Boards or CDFW.

Water Conservation and Use	
96.	Landowners shall regularly inspect their entire water delivery system for leaks and immediately repair any leaky faucets, pipes, connectors, or other leaks.
97.	Landowners shall use weed-free mulch in cultivation areas that do not have ground cover to conserve soil moisture and minimize evaporative loss.
98.	Landowners shall implement water conserving irrigation methods (e.g., drip or trickle irrigation, micro-spray, or hydroponics).
99.	Landowners shall maintain daily records of all water used for irrigation. Daily records may be calculated by the use of a measuring device or, if known, by calculating the irrigation system rates and duration of time watered (e.g., irrigating for one hour twice per day using 50 half-gallon drips equates to 50 gallons per day (1*2*50*0.5) of water used for irrigation). Landowners shall retain, for a minimum of 5 years, irrigation records at the site and shall make all irrigation records available for review by the Water Boards, CDFW and any other authorized representatives of the Water Boards or CDFW.
Irrigation Runoff	
100.	Landowners shall regularly inspect for leaks in mainlines[19], laterals[20], in irrigation connections, sprinkler heads, or at the ends of drip tape and feeder lines and immediately repair any leaks found upon detection.
101.	The irrigation system shall be designed to include redundancy (e.g., safety valves) in the event that leaks occur, so that waste of water and runoff is prevented and minimized.
102.	Landowners shall regularly replace worn, outdated, or inefficient irrigation system components and equipment to ensure a properly functioning, leak-free irrigation system at all times.
103.	Landowners shall minimize irrigation deep percolation[21] by applying irrigation water at agronomic rates.
Fertilizers, Pesticides, and Petroleum Products	
104.	Landowners shall not mix, prepare, over apply, or dispose of agricultural chemicals/products (e.g., fertilizers, pesticides, and other chemicals as defined in the applicable water quality control plan) in any location where they could enter the riparian setback or waters of the state. The use of agricultural chemicals inconsistently with product labeling, storage instructions, or DPR requirements for pesticide applications is prohibited. Disposal of unused product and containers shall be consistent with labels.
105.	Landowners shall keep and use absorbent materials designated for spill containment and spill cleanup equipment on-site for use in an accidental spill of fertilizers, petroleum products, hazardous materials, and other substances which may degrade waters of the state. The landowner shall immediately notify the California Office of Emergency Services at 1-800-852-7550 and immediately initiate cleanup activities for all spills that could enter a waterbody or degrade groundwater.
106.	Landowners shall establish and use a separate storage area for pesticides, and fertilizers, and another storage area for petroleum or other liquid chemicals (including diesel, gasoline, oils, etc.). All such storage areas shall comply with the riparian setback Requirements, be in a secured location in compliance with label instructions, outside of areas of known slope instability, and be protected from accidental ignition, weather, and wildlife. All storage areas shall have appropriate secondary containment structures, as necessary, to protect water quality and prevent spillage, mixing, discharge, or seepage. Storage tanks and containers must be of suitable material and construction to be compatible with the substances stored and conditions of storage, such as pressure and temperature.
107.	Throughout the wet season, Landowners shall ensure that any temporary storage areas have a permanent cover and side-wind protection or be covered during non-working days and prior to and during rain events.
108.	Landowners shall only use hazardous materials in a manner consistent with the product's label.
109.	Landowners shall only keep hazardous materials in their original containers with labels intact and shall store hazardous materials to prevent exposure to sunlight, excessive heat, and precipitation. Landowners shall provide secondary containment for hazardous materials to prevent possible exposure to the environment. Disposal of unused hazardous materials and containers shall be consistent with the label.

110.	Landowners shall only mix, prepare, apply, or load hazardous materials outside of the riparian setbacks.
111.	Landowners shall not apply agricultural chemicals within 48 hours of a predicted rainfall event of 0.25 inches or greater with a probability greater than 50-percent. In the Lake Tahoe Hydrologic Unit, Landowners shall not apply agricultural chemicals within 48 hours of any weather pattern that is forecast to have a 30 percent or greater chance of precipitation greater than 0.1 inch per 24 hours. This requirement may be updated based on amendments to the Lahontan Regional Water Board construction storm water general order.
Fertilizers and Soils	
112.	To minimize infiltration and water quality degradation, Landowners shall irrigate and apply fertilizer to consistent with the crop need (i.e., agronomic rate).
113.	When used, Landowners shall apply nitrogen to cultivation areas consistent with crop need (i.e., agronomic rate). Landowners shall not apply nitrogen at a rate that may result in a discharge to surface water or groundwater that causes or contributes to exceedance of water quality objectives, and no greater than 319 pounds/acre/year unless plant tissue analysis performed by a qualified individual demonstrates the need for additional nitrogen application. The analysis shall be performed by an agricultural laboratory certified by the State Water Board's Environmental Laboratory Accreditation Program.
114.	Landowners shall ensure that potting soil or soil amendments, when not in use, are placed and stored with covers, when needed, to protect from rainfall and erosion, to prevent discharge to waters of the state, and to minimize leaching of waste constituents into groundwater.
Pesticides and Herbicides	
115.	Landowners shall not apply restricted materials, including restricted pesticides, or allow restricted materials to be stored at the site.
116.	Landowners shall implement integrated pest management strategies where possible to reduce the need and use of pesticides and the potential for discharges to waters of the state.
Petroleum Products and Other Chemicals	
117.	Landowners shall only refuel vehicles or equipment outside of riparian setbacks. Landowners shall inspect all equipment using oil, hydraulic fluid, or petroleum products for leaks prior to use and shall monitor equipment for leakage. Stationary equipment (e.g., motors, pumps, generators, etc.) and vehicles not in use shall be located outside of riparian setbacks. Spill and containment equipment (e.g., oil spill booms, sorbent pads, etc.) shall be stored onsite at all locations where equipment is used or staged.
118.	Landowners shall store petroleum, petroleum products, and similar fluids in a manner that provides chemical compatibility, provides secondary containment, and protection from accidental ignition, the sun, wind, and rain.
119.	Use of an underground storage tank(s) for the storage of petroleum products is allowed if compliant with all applicable federal, state, and local laws; regulations; and permitting requirements.
Cultivation-Related Waste	
120.	Landowners shall contain and regularly remove all debris and trash associated with cultivation activities from the cultivation site. Landowners shall only dispose of debris and trash at an authorized landfill or other disposal site in compliance with state and local laws, ordinances, and regulations. Landowners shall not allow litter, plastic, or similar debris to enter the riparian setback or waters of the state. Plant material may be disposed of onsite in compliance with any applicable CDFA license conditions.
121.	Landowners shall only dispose or reuse spent growth medium (e.g., soil and other organic media) in a manner that prevents discharge of soil and residual nutrients and chemicals to the riparian setback or waters of the state. Spent growth medium shall be covered with plastic sheeting or stored in water tight dumpsters prior to proper disposal or reuse. Spent growth medium should be disposed of at an authorized landfill or other disposal site in compliance with state and local laws, ordinances, and regulations. Proper reuse of spent growth medium may include incorporation into garden beds or spreading on a stable surface and revegetating the surface with native plants. Landowners shall use erosion control techniques, as needed, for any reused or stored spent growth medium to prevent polluted runoff.

Refuse and Domestic Waste

122.	Landowners shall ensure that debris, soil, silt, bark, slash, sawdust, rubbish, creosote-treated wood, raw cement and concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to any life stage of fish and wildlife or their habitat (includes food sources) does not contaminate soil or enter the riparian setback or waters of the state.
123.	Landowners shall not dispose of domestic wastewater unless it meets applicable local agency and/or Regional Water Board requirements. Landowners shall ensure that human or animal waste is disposed of properly. Landowners shall ensure onsite wastewater treatment systems (e.g., septic system) are permitted by the local agency or applicable Regional Water Board.
124.	If used, chemical toilets or holding tanks shall be maintained in a manner appropriate for the frequency and conditions of usage, sited in stable locations, and comply with the riparian setback Requirements.

Winterization

125.	Landowners shall implement all applicable Erosion Control and Soil Disposal and Spoils Management Requirements in addition to the Winterization Requirements below by the onset of the winter period.
126.	Landowners shall block or otherwise close any temporary access roads to all motorized vehicles no later than the onset of the winter period each year.
127.	Landowners shall not operate heavy equipment of any kind at the site during the winter period, unless authorized for emergency repairs contained in an enforcement order issued by the State Water Board, Regional Water Board, or other agency having jurisdiction.
128.	Landowners shall apply linear sediment controls (e.g., silt fences, wattles, etc.) along the toe of the slope, face of the slope, and at the grade breaks of exposed slopes to comply with sheet flow length at the frequency specified below.

Slope (percent)	Sheet Flow Length Not to Exceed (feet)
0 – 25	20
25 – 50	15
>50	10

129.	Landowners shall maintain all culverts, drop inlets, trash racks and similar devices to ensure they are not blocked by debris or sediment. The outflow of culverts shall be inspected to ensure erosion is not undermining the culvert. Culverts shall be inspected prior to the onset of fall and winter precipitation and following precipitation events that produce at least 0.5 in/day or 1.0 inch/7 days of precipitation to determine if maintenance or cleaning is required.
130.	Landowners shall stabilize all disturbed areas and construction entrances and exits to control erosion and sediment discharges from land disturbance.
131.	Landowners shall cover and berm all loose stockpiled construction materials (e.g., soil, spoils, aggregate, etc.) that are not actively (scheduled for use within 48 hours) being used as needed to prevent erosion by storm water. The landowner shall have adequate cover and berm materials available onsite if the weather forecast indicates a probability of precipitation.
132.	Landowners shall apply erosion repair and control measures to the bare ground (e.g., cultivation area, access paths, etc.) to prevent discharge of sediment to waters of the state.
133.	As part of the winterization plan approval process, the Regional Water Board may require Landowners to implement additional site-specific erosion and sediment control requirements if the implementation of the Requirements in this section do not adequately protect water quality.

Appendix G

Protocol-level Botanical Survey Report

BIOLOGICAL RECONNAISSANCE AND PROJECT FEASIBILITY ASSESSMENT REPORT

Cisco Farms, LLC

Assessor Parcel Number (APN):
APN: 105 – 101 – 011 & 104 – 232 – 005

September 2021

Naiad Biological Consulting

BOTANICAL REPORT OF SPECIAL STATUS NATIVE PLANT POPULATIONS AND NATURAL COMMUNITIES

APN: 105-101-011 & 104-232-005

1414 Chambers Road
Petrolia, CA 95558

Prepared For:

Cisco Farms, LLC
PO Box 1083
Trinidad, CA 95570

Prepared by:

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Consulting Botanist
1158 P Street, Arcata, CA 95521
(406) 499-1075

In Conjunction with:

Naiad Biological Consulting
www.naiadbiological.com

PO Box 121
Samoa, CA 95564

Date Prepared:

September 21st, 2021

Table of Contents

Summary Information

Legal description:	Portion of section 2 of T2S, R2W, H.B.&M.
APN:	105-101-011 & 104-232-005
USGS 7.5' Quad:	Petrolia (4012433)
Parcel size:	436 Acres
Dates of survey:	March 21st and June 21st, 2021
Surveyed by:	Georgia Hamer and Sarah Mason
Field survey effort:	7 hours
Results:	**No CRPR 1 or 2 plants were observed**

Introduction, Background, and Project Understanding

Purpose and Need

This botanical survey report was prepared to assess potential impacts to botanical resources and summarizes the results of a survey conducted in Humboldt County near Petrolia, California (APN: 105-101-011 and 104-232-005). The survey was performed to identify special status plants and sensitive plant communities that could be impacted by operations associated with the cultivation of cannabis within the parcels in accordance with the California Environmental Quality Act (CEQA) using the California Department of Fish and Wildlife's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018).

Project Description and Setting

The proposed project is for approximately 5 acres of cannabis cultivation, 3 acres of full sun outdoor and 2 acres of greenhouses, within two parcels totaling to 436 acres. The land was historically utilized for grazing and is dominated by several invasive grass species.

The parcel address is located at 1414 Chambers Road, Petrolia, CA, 95558-0029. The parcels are approximately 1.8 miles east of downtown Petrolia, California within the Petrolia USGS 7.5-minute quadrangle (Quad code: 4012433), section 2, T2S, R2W, H.B.&M. The center location of the project area is 40°19'34.91" N 124°15'51.51"W at an elevation of 289 feet (88 meters) above sea level (Google Earth Pro, 2021).

Soil, Topography, and Hydrology

Data from *Web Soil Survey* for the project area do not indicate any unique soil types that would provide habitat for rare plants such as serpentinite or peat.

The project area is situated within the lower foothills of the North Coast Ranges approximately 1.0 mile north of the Mattole River. The project area lies within the Mill Creek watershed which drains into the Pacific Ocean via the Mattole River. Refer to Figure 1 (Appendix C) for locator map.

The project area is on a very slight west facing aspect ranging from ~260 to ~315 feet in elevation.

Definitions

Special Status Plants and Plant Communities

Special status plants include taxa that are listed under the Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA) in addition to plants which meet the definition of rare or endangered under the California Environmental Quality Act (CEQA). CDFW recommends that plants on California Rare Plant Ranks (CRPR) Lists 1A (presumed extinct or extirpated), 1B (rare, threatened, or endangered in California and elsewhere), 2A (presumed extirpated) and 2B (rare, threatened, or endangered in California but more common elsewhere), or other species that warrant consideration based on local or biological significance, be addressed during California Environmental Quality Act (CEQA) review of proposed projects. Plants of rank 3 and 4, which are under review and watch lists respectively, are addressed by Naiad Biological Consulting, and may warrant consideration under CEQA if potential or cumulative impacts to the plant exist.

CDFW's natural community rarity rankings follow NatureServes's 2012 *NatureServe Conservation Status Assessment: Methodology for Assigning Ranks*, in which all alliances are listed with a global (G) and (S) rank. NCSC are those natural communities that are ranked S1 to S3 (CDFW, 2020), where 1 is critically imperiled, 2 is imperiled, and 3 is vulnerable. However, they may not warrant protection under CEQA unless they are considered high quality. Human disturbance, invasive species, logging, and grazing are common factors considered when judging whether the stand is high quality and warrants protection.

Methods

Pre-Site Visit Data Compilation and Preparation

Prior to conducting the field surveys, the following database information was reviewed to determine the location and types of botanical resources that possibly exist in the survey area. This pre-field investigation included searches of the California Natural Diversity Database (CNDDB, 2021) and the California Native Plant Society's *Inventory of Rare and Endangered Plants* (CNPS, 2021). This list includes CRPR (California Rare Plant Rank) 1 and 2 plants that have been observed within a 9-quad search centered on the Petrolia quadrangle. Because this quadrangle is coastal, only 7 quadrangles lie within the 9-quad search. USGS quadrangles within the search area include: Buckeye Mtn. (4012432), Cape Mendocino (4012444), Capetown (4012443), Cooskie Creek (4012423), Petrolia (4012433), Shubrick Peak (4012422), and Taylor Peak (4012442). The results of the project scoping are presented below in Table 1 (Appendix A).

Botanical Field Survey and Habitat Investigation

The early season, March 21st, botanical field survey for this project was completed by Georgia Hamer. Georgia holds a BS in Biology with a concentration in Ecology from Humboldt State University (HSU). Georgia has worked professionally as a Botanist for the Native Land Trust of New England, the Lakeview, OR district Bureau of Land Management (BLM), and for the last 3 years at Pacific Watershed Associates in Humboldt County. Georgia specializes in botanical inventories, environmental restoration plans, and rare plant identification and protection.

The late season, June 21st, botanical field survey for this project was completed by Sarah Mason. Sarah holds a BS in Botany from Humboldt State University. Sarah has worked as an assistant botanist and biologist with Caltrans, as a Botanical Technician for the Klamath and Bitterroot National Forests, and is currently working towards receiving her MSc in Biology with a concentration in bumblebee ecology. Sarah has experience in rare plant identification, invasive species removal, protection and monitoring of rare plants, and teaching plant taxonomy at the university level.

Surveys were floristic in nature and conducted in a manner consistent with the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018). Plants were identified to the lowest taxonomic level necessary to ensure that they were not a species of concern. Plants not identifiable in the field were identified off site with the use of *The Jepson Manual, Vascular Plants of California*. Other resources used to identify plants can be found in the reference section towards the end of this report.

Botanical surveys were conducted throughout the areas proposed for cultivation operations and the associated road system. Surveys were conducted in an intuitive meander focused on areas likely to provide habitat for rare plant species and/or potentially affected (directly or indirectly) by cultivation operations. These areas include but are not limited to: existing permanent and seasonal roads, new road construction, road points and crossings, forest openings (i.e., meadows, landings, and cut banks), springs and watercourses. Refer to Figure 2 (Appendix C) for the survey routes.

Results

Habitats Observed

No special-status vegetation communities or habitats were observed during the botanical survey of the project area. The project area habitat is typical of valley and foothill grasslands and coastal prairie within the lower foothills of the Northern Coast Ranges. The surrounding areas are typical of North Coast coniferous forest and mixed evergreen forest, dominated by Douglas-fir (*Pseudotsuga menziesii*) and tanoak (*Notholithocarpus densiflorus*). There is a small stretch of riparian woodland, where a portion of Mill creek runs through, just south of the project area and along the road leading to the pasture. There is no canopy or shrub layer within the project area. Some native grasses are present, including *Festuca idahoensis,* but no sensitive natural communities could be established during surveys due to the large amount of invasive grasses present, consistent with historic grazing. No watercourses exist within the project area. See figures 3, 4, and 5 (Appendix D) for example photos of project area and habitats present.

Species Observed

No CRPR 1 or 2 plants were encountered in the project area. *Hesperocyparis macrocarpa* (Monterey cypress), a CRPR of 1B.2 in its natural range, was observed during surveys but is believed to be a planted ornamental and should not be impacted by cultivation operations. See figure 4 (Appendix D) for photo of planted Monterey cypress.

Refer to Table 2 (Appendix B) for a list of species observed in the project area. A total of 82 plant taxa were observed in the project area, of which approximately 48% are non-native and 27% are invasive. Several invasive grass species, such as slender wild oat (*Avena barbata*), Italian rye grass (*Festuca perennis*), and soft chess (*Bromus hordeaceus*), dominate the project area.

Conclusion and Discussion

Conclusion

Results of the botanical field survey indicate that negative impacts to sensitive species or sensitive habitats will not occur as a result of the development of cannabis cultivation at the particular site investigated and surveyed.

Although no listed species were observed during the field survey, it is possible that previous ground disturbances, existing drought conditions, which may alter bloom times and durations, as well as herbivory by deer could have affected the survey results.

Recommendations

Due to the low quality of habitat, from historic grazing and high numbers of invasive grasses present, no sensitive plant species, communities, or habitats were encountered during the botanical field survey. It is not expected that cultivation operations will impact habitats further. No further botanical surveys are recommended.

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Appendix A. Results from database search

Table 1. Target special-status plants of the project area

Petrolia and surrounding 7.5 min quadrangles							
Scientific Name	**Common Name**	**CRPR**	**Bloom Period**	**Lifeform**	**Habitat**	**Micro Habitat**	**Elevation (m)**
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	1B.2	Mar-Jun	annual herb	Coastal Strand, Northern Coastal Scrub	dunes, coastal	0 - 215 meters
Layia carnosa	beach layia	1B.1	Mar-Jul	annual herb	Coastal Strand, Northern Coastal Scrub (sandy)	dunes, coastal	0 - 60 meters
Packera bolanderi var. *bolanderi*	seacoast ragwort	2B.2	May-Jul	perennial rhizomatous herb	Coastal scrub; North Coast coniferous forest	Sometimes roadsides.	30 - 650 meters
Erysimum concinnum	bluff wallflower	1B.2	Feb-Jul	annual / perennial herb	Coastal bluff scrub, coastal dunes, coastal prairie	dunes, coastal	0 - 185 meters
Astragalus pycnostachyus var. *pycnostachyus*	coastal marsh milk-vetch	1B.2	(Apr)Jun-Oct	perennial herb	Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt, streamsides)	dunes, coastal	0 - 30 meters
Romanzoffia tracyi	Tracy's romanzoffia	2B.3	Mar-May	perennial herb	Coastal bluff scrub. Coastal scrub	rocky	15 -30 meters
Sisyrinchium hitchcockii	Hitchcock's blue-eyed grass	1B.1	Jun	perennial rhizomatous herb	Cismontane woodland (openings), Valley and foothill grassland	Known in CA from only one occurrence near Cape Ridge.	NA
Erythronium oregonum	giant fawn lily	2B.2	Mar-Jun	perennial bulbiferous herb	Cismontane woodland	sometimes serpentinite, rocky, openings; Meadows and seeps	100 - 1150 meters
Erythronium revolutum	coast fawn lily	2B.2	Mar-Jul	perennial bulbiferous herb	Broadleafed upland forest; North Coast coniferous forest	Mesic, streambanks; Bogs and fens	0 - 1600 meters
Sidalcea malviflora ssp. *patula*	Siskiyou checkerbloom	1B.2	May-Aug	perennial rhizomatous herb	Coastal bluff scrub; Coastal prairie; North Coast coniferous forest	often roadcuts.	15 - 880 meters

Montia howellii	Howell's montia	2B.2	Mar-May	annual herb	North Coast coniferous forest	Vernally mesic, sometimes roadsides; Meadows and seeps; Vernal pools	0 - 835 meters
Oenothera wolfii	Wolf's evening-primrose	1B.1	May-Oct	perennial herb	Coastal bluff scrub, Coastal dunes, Coastal prairie, Lower montane coniferous forest	sandy, usually mesic.	3 - 800 meters
Piperia candida	white-flowered rein orchid	1B.2	May-Sep	perennial herb	Broadleafed upland forest; Lower montane coniferous forest; North Coast coniferous forest	sometimes serpentinite	30 - 1310 meters
Castilleja litoralis	Oregon coast paintbrush	2B.2	Jun-Jul	perennial herb (hemiparasitic)	Coastal bluff scrub, Coastal dunes, Coastal scrub	Sandy	15 - 100 meters
Gilia capitata ssp. *pacifica*	Pacific gilia	1B.2	Apr-Aug	annual herb	Coastal bluff scrub; Chaparral (openings); Coastal prairie; Valley and foothill grassland	NA	5 - 1665 meters
Gilia millefoliata	dark-eyed gilia	1B.2	Apr - Jul	annual herb	Coastal Dunes	Sandy	0 - 30 meters
Polemonium carneum	Oregon polemonium	2B.2	Apr-Sep	perennial herb	Coastal prairie, Coastal scrub, Lower montane coniferous forest	NA	0 - 1830 meters

Appendix B. Plant Species Observed

Table 2. List of plant species encountered during surveys

Genus	Common Name	Origin
Trees		
Abies grandis	grand fir	Native
Alnus rubra	red alder	Native
Arbutus menziesii	Pacific madrone	Native
Hesperocyparis macrocarpa	Montery cypress	Native (planted)
Notholithocarpus densiflorus	tan aok	Native
Picea sitchensis	sitka spruce	Native
Pseudotsuga menziesii	Douglas-fir	Native
Sequoia sempervirens	coast redwood	Native
Tsuga heterophylla	Western hemlock	Native
Umbellularia californica	bay laurel	Native
Shrubs		
Baccharis pilularis	coyote brush	Native
Ceanothus thrysiflorus	blueblossom	Native
Frangula californica	coffee berry	Native
Genista monspessulana	French broom	Cal-IPC High
Lonicera hispidula	pink honeycuckle	Native
Oemleria cerasiformis	oso berry	Native
Ribes bracteosum	stink currant	Native
Rosa pisocarpa	cluster rose	Native
Rubus parviflus	thimble berry	Native
Rubus ursinus	California blackberry	Native
Sambucus racemosa	red elderberry	Native
Toxicodendron diversilobum	poison oak	Native
Grass & Graminoids		
Agrostis stolonifera	creeping bentgrass	Cal-IPC Limited
Avena barbata	slender oat	Cal-IPC Moderate
Cynosurus echinatus	dogtail grass	Cal-IPC Moderate
Festuca idahoensis	Idaho fescue	Native
Holcus lanatus	velvet grass	Cal-IPC Moderate
Poa annua	annual bluegrass	Non-native
Briza maxima	rattlesnake grass	Cal-IPC Limited
Aira caryophyllea	silver hair grass	Non-native
Festuca perennis	Italian rye grass	Cal-IPC Moderate
Anthoxanthum odoratum	sweet vernal grass	Cal-IPC Limited
Hordeum marinum	Mediterranean barley	Cal-IPC Moderate
Bromus hordeaceus	soft chess	Cal-IPC Limited
Festuca subuliflora	crinkle-awn fescue	Native
Poa pratensis	Kentucky blue grass	Cal-IPC Limited
Bromus diandrus	ripgut brome	Cal-IPC Moderate
Dactylis glomerata	orchard grass	Cal-IPC Limited

Luzula subsessilis	Pacific woodrush	Native
Forbs		
Adenocaulon bicolor	trail plant	Native
Aquilegia formosa	Western columbine	Native
Bellis perennis	English daisy	Non-native
Cichorium intybus	chicory	Non-native
Clinopodium douglasii	yerba buena	Native
Conium maculatum	poison hemlock	Cal-IPC Moderate
Crepis capillaris	hawksbeard	Non-native
Daucus carota	Queen Anne's lace	Non-native
Digitalis purpurea	foxglove	Cal-IPC Limited
Erodium botrys	long beaked filaree	Non-native
Galium aparine	goose grass	Native
Galium muricatum	Humboldt bedstraw	Native
Geranium molle	crane's bill geranium	Non-native
Heuchera micrantha	alumroot	Native
Hypochaeris glabra	smooth cat's ear	Cal-IPC Limited
Hypochaeris radicata	rough cat's ear	Cal-IPC Moderate
Iris sp.	Iris	Native
Lisichiton americanus	yellow skunk cabbage	Native
Lupinus bicolor	annual lupine	Native
Lysimachia arvensis	scarlet pimpernel	Non-native
Marah oregana	man root	Native
Matricaria discoidea	pineapple weed	Native
Mentha pulegium	pennyroyal	Cal-IPC Moderate
Osmorhiza berteroi	sweet cicely	Native
Oxalis corniculata	creeping wood sorrel	Non-native
Plantago lanceolata	English plantain	Cal-IPC Limited
Rumex acetosella	sheep sorrel	Cal-IPC Limited
Rumex crispus	curly dock	Cal-IPC Moderate
Sanicula crassicaulis	Pacific sanicle	Native
Scrophularia californica	California bee plant	Native
Silybym marianum	milk thistle	Cal-IPC Limited
Spergula arvensis	corn spurry	Non-Native
Stachys bullata	Southern hedge nettle	Native
Stellaria media	chickweed	Non-native
Torilis nodosa	short sock-destroyer	Non-native
Trifolium dubium	little hop clover	Non-native
Trifolium repens	white clover	Non-native
Vicia sativa	spring vetch	Non-native
Ferns & Allies		
Equisetum arvense	common horsetail	Native
Pentagramma triangularis	gold back fern	Native
Polystichum munitum	Western swordfern	Native
Pteridium aquilinum	Western bracken fern	Native

Appendix C. Maps

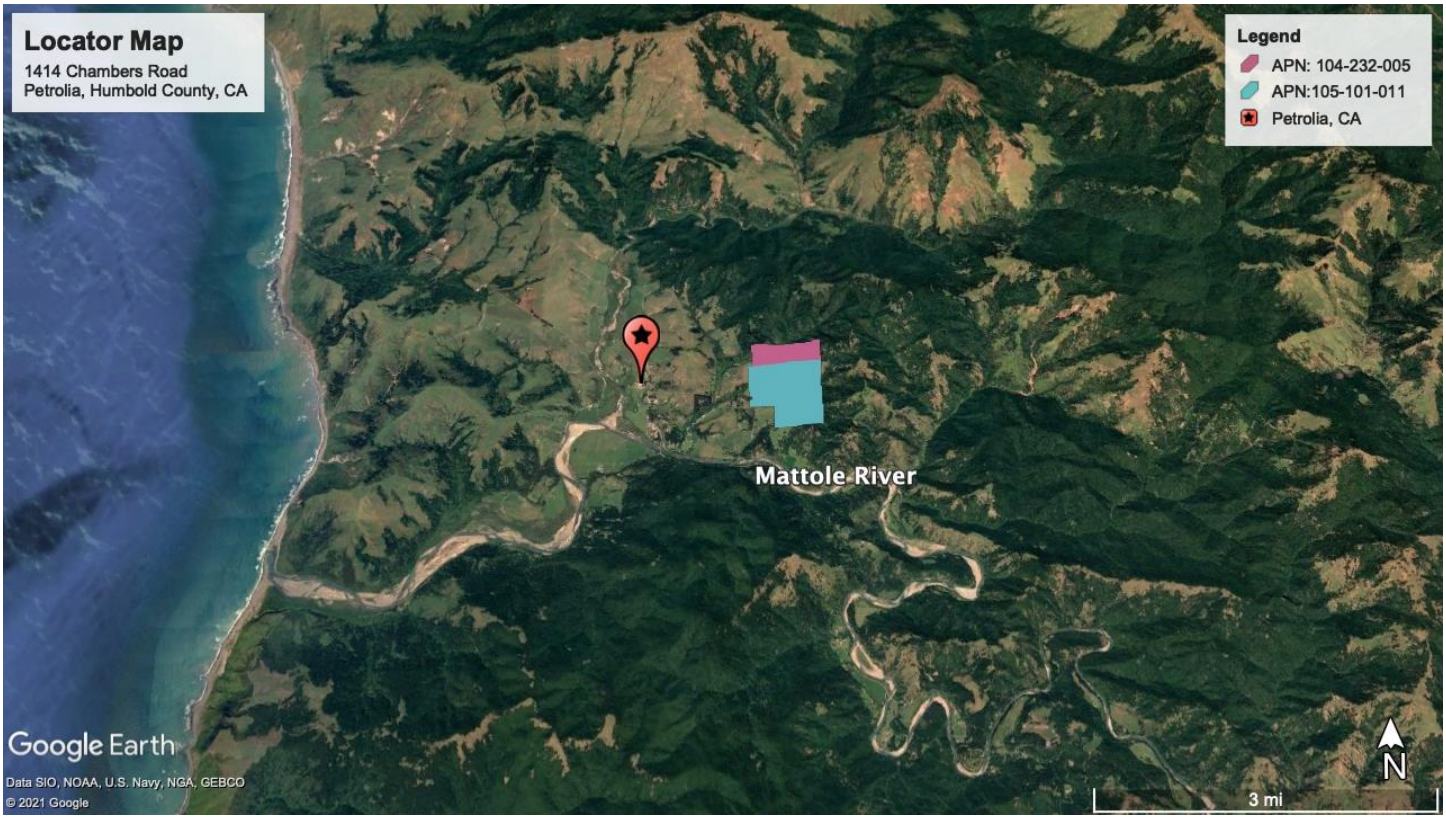


Figure 1. Locator Map of Project Area (blue and pink polygons) and the nearest town of Petrolia, CA (red star).

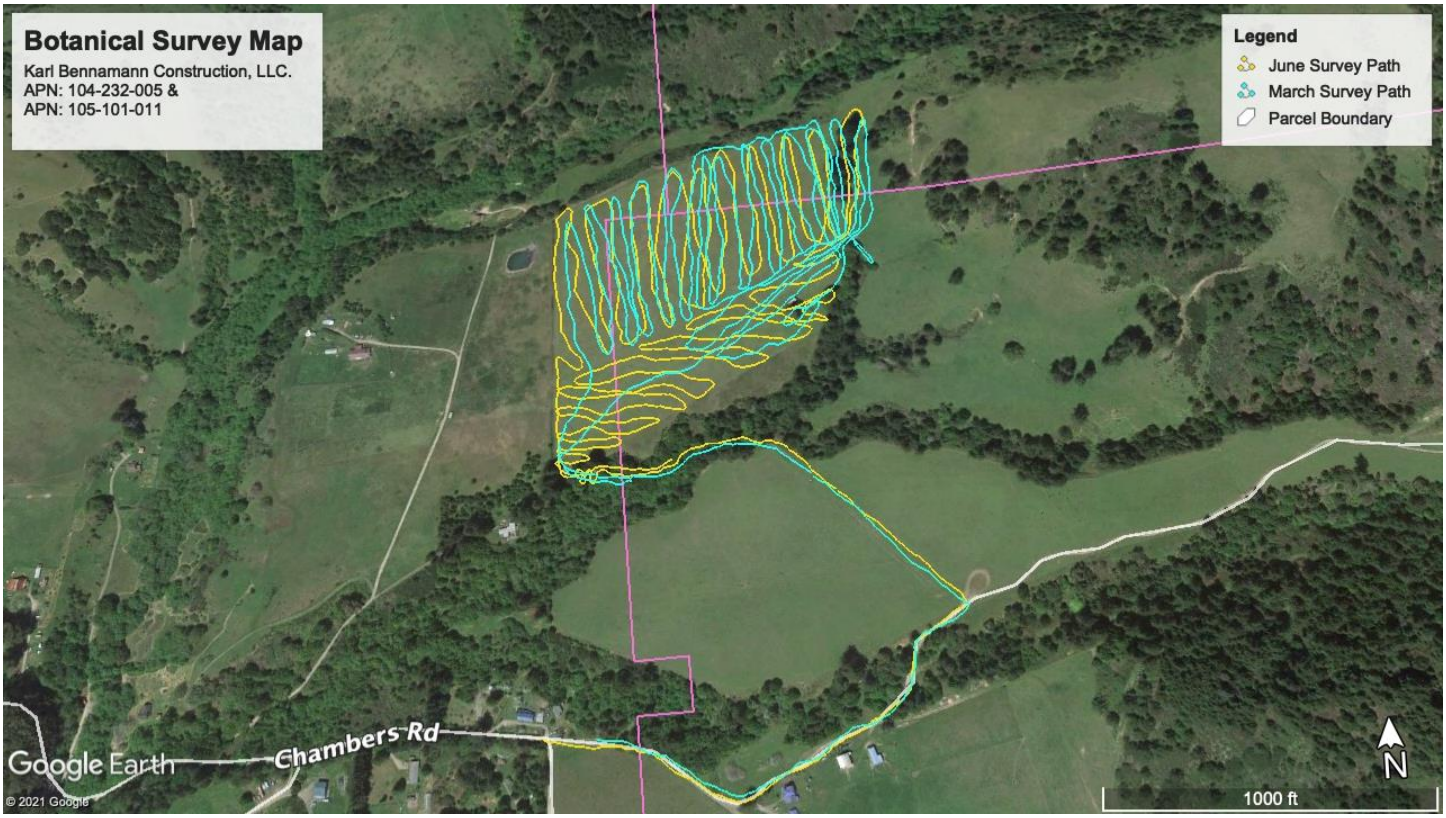


Figure 2. Map of project area and survey routes.

Appendix D. Project Area and Habitats

Figure 3. Project area in coastal prairie habitat, dominated by several invasive grasses, and mixed evergreen forest in background.

Figure 4. Planted Monterey Cypress.

Figure 5. Riparian woodland within northern portion of Mill Creek. Location south, and outside, of project area.

Appendix H

Golden Eagle Survey Interim Report

BIOLOGICAL RECONNAISSANCE AND
PROJECT FEASIBILITY ASSESSMENT REPORT

Cisco Farms, LLC

Assessor Parcel Number (APN):
APN: 105 – 101 – 011 & 104 – 232 – 005

September 2021

Naiad Biological Consulting

GOLDEN EAGLE SURVEY
INTERIM REPORT

August 22nd, 2021

1414 Chambers Road
Petrolia, CA, 95536

Survey conducted and report prepared by Phil Johnston. Phil Johnston is a contracted professional Wildlife Tracker and Researcher. Phil received his BS in Wildlife Management and Conservation from HSU and is currently employed as a Mountain Lion and Fisher Biologist for Hoopa Tribal Forestry. Phil has extensive experience working with carnivores in Northern California and is also trained to do Northern Spotted Owl Surveys, Willow Flycatcher surveys, nesting bird surveys and Peregrine Falcon nest surveys.

NESTING BIRD SURVEY: The project area was surveyed for soaring and perched golden eagles from a nearby hill (393328, 4464949) with an excellent view on the morning of 8/22/2021 from 08:30 am until 12:30 pm. Visibility was excellent and raptors could be identified up to 2.5 miles away. The surveyor identified a pair of red-tailed hawks, a pair of red-shouldered hawks, a pair of ravens, and dozens of turkey vultures from this observation point. No golden eagles were observed at any time. Using binoculars and a 600mm lens, mature firs and oaks which would be most likely to house a golden eagle nest,\ were closely inspected and no evidence of eagle nests of any kind was observed. The pairs of *Buteo* hawks observed were still engaged in territorial nesting behavior and were quite obvious in their activities through vocalizations and soaring. A follow up survey for 4-8 hours starting at dawn in mid February will detect any golden eagles that may be nesting in the area but were not present for this survey, as well as any eagles that may discover the area this winter and establish a new breeding area. The habitat within one mile of the proposed project area contains many mature fir, redwood and oak trees with decent features which would be suitable for a golden eagle nest, but there is no evidence of nesting eagles at the time of this report.

PREY SURVEY: The 10 acre meadow outlined for development in the proposed project was surveyed for presence/abundance of important golden eagle prey species, focusing on black-tailed jackrabbits and California ground squirrels. Black-tailed jackrabbits defecate while feeding and piles of pellets accumulate where the animals spend time. Assessing density from pellet counts is complicated, but transects for pellets are effective in determining presence/absence. California ground squirrels make conspicuous burrows wherever they live, and counting burrows has been used as a method for estimating population density. The 10 acre project area was surveyed in 27 transects totaling 3.8 miles, and the transects were conducted by a Cybertracker Certified “Track and Sign Specialist” with expertise in identifying and interpreting wildlife sign. The surveyor walked slowly and studied the ground for ground squirrel burrows and jackrabbit pellets. The transects encountered zero jackrabbit pellets and zero ground squirrel burrows. The lack of ground squirrel burrows decisively indicates a complete absence of ground squirrels from the project area. Pellets are more difficult to observe, and easier to overlook, but the lack of presence on the transects strongly indicates either very low jackrabbit presence/use or absence all together. Pocket gopher sign was abundant in the meadow, as was sign of at least one American badger hunting pocket gophers. Pocket gophers are not considered an important part of golden eagle diet. California quail and wild turkey sign was present in and around the project area, and both species are considered prey for golden eagles. No small mammals were visibly observed during the transects.

GPS tracks from golden eagle prey species surveys

Left: view from observation point. Right: Gopher sign in the project area.

Left: Turkey vultures soaring, photographed from 2 miles away.

Appendix I

Project Plot Plan

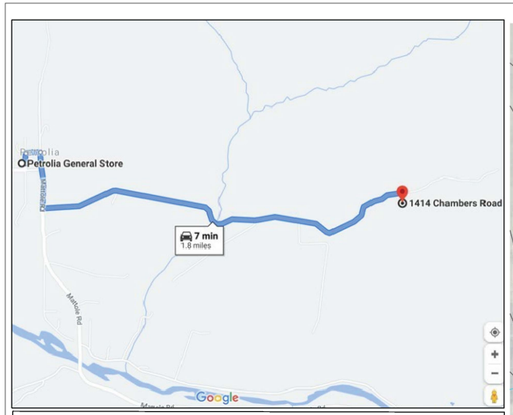
BIOLOGICAL RECONNAISSANCE AND
PROJECT FEASIBILITY ASSESSMENT REPORT

Cisco Farms, LLC

Assessor Parcel Number (APN):
APN: 105 – 101 – 011 & 104 – 232 – 005

September 2021

Naiad Biological Consulting



DRIVING DIRECTIONS FROM PETROLIA GENERAL STORE

1. HEAD NORTH ON SHERMAN AVENUE
2. TURN RIGHT ON GRANT STREET
3. CONTINUE ONTO OLD COAST WAGON ROAD
4. CONTINUE ONTO MATTOLE ROAD (0.2 MILES)
5. TURN LEFT ONTO CHAMBERS ROAD (1.5 MILES TO GATE)

PROJECT INFORMATION

APPLICANT: CISCO FARMS, INC.
PROPERTY OWNER OF RECORD: BENEMANN FAMILY TRUST
OWNER ADDRESS: PO BOX 1083, TRINIDAD, CA 95570
APN: 105-101-011, 104-232-005 & 104-191-001
PROPERTY ADDRESS: 1414 CHAMBERS ROAD, PETROLIA, CA 95558
HUMBOLDT COUNTY CANNABIS PERMIT APPLICATION:TBD
MERGED PROPERTY SIZE: 517 ACRES
HUMBOLDT COUNTY ZONING: AE-B-5(160)

GENERAL NOTES

1. NO SCHOOLS, SCHOOL BUS STOPS, PLACES OF WORSHIP, PUBLIC PARKS, OR KNOWN TRIBAL CULTURAL RESOURCES WITHIN 600 FEET OF CULTIVATION SITES.
2. NO OFF-SITE RESIDENCES WITHIN 300 FEET OF CULTIVATION SITE.
3. NO UNDEVELOPED PARCEL BOUNDARY WITHIN 300' OF CULTIVATION SITE.
4. NO CULTIVATION OR OPERATIONS WITHIN STREAMSIDE MANAGEMENT AREAS.
5. ALL KNOWN WATERCOURSES SHOWN WITH STREAMSIDE MANAGEMENT AREA BUFFERS.
6. APNS 104-232-005, 104-191-001 & 105-101-011 CONSTITUTE ONE LEGAL PARCEL.
7. CALFIRE WATER STORAGE TANKS TO BE EQUIPPED WITH 2.5" OUTLET W/MALE AMERICAN NATIONAL FIRE HOSE SCREW THREADS.
8. PROPERTY BOUNDARIES SHOWN ARE BASED ON HUMBOLDT COUNTY GIS AND MERGER SURVEY MAPS COMPLETED BY ED GORGE JR., PLS

CULTIVATION WATER SOURCE & STORAGE

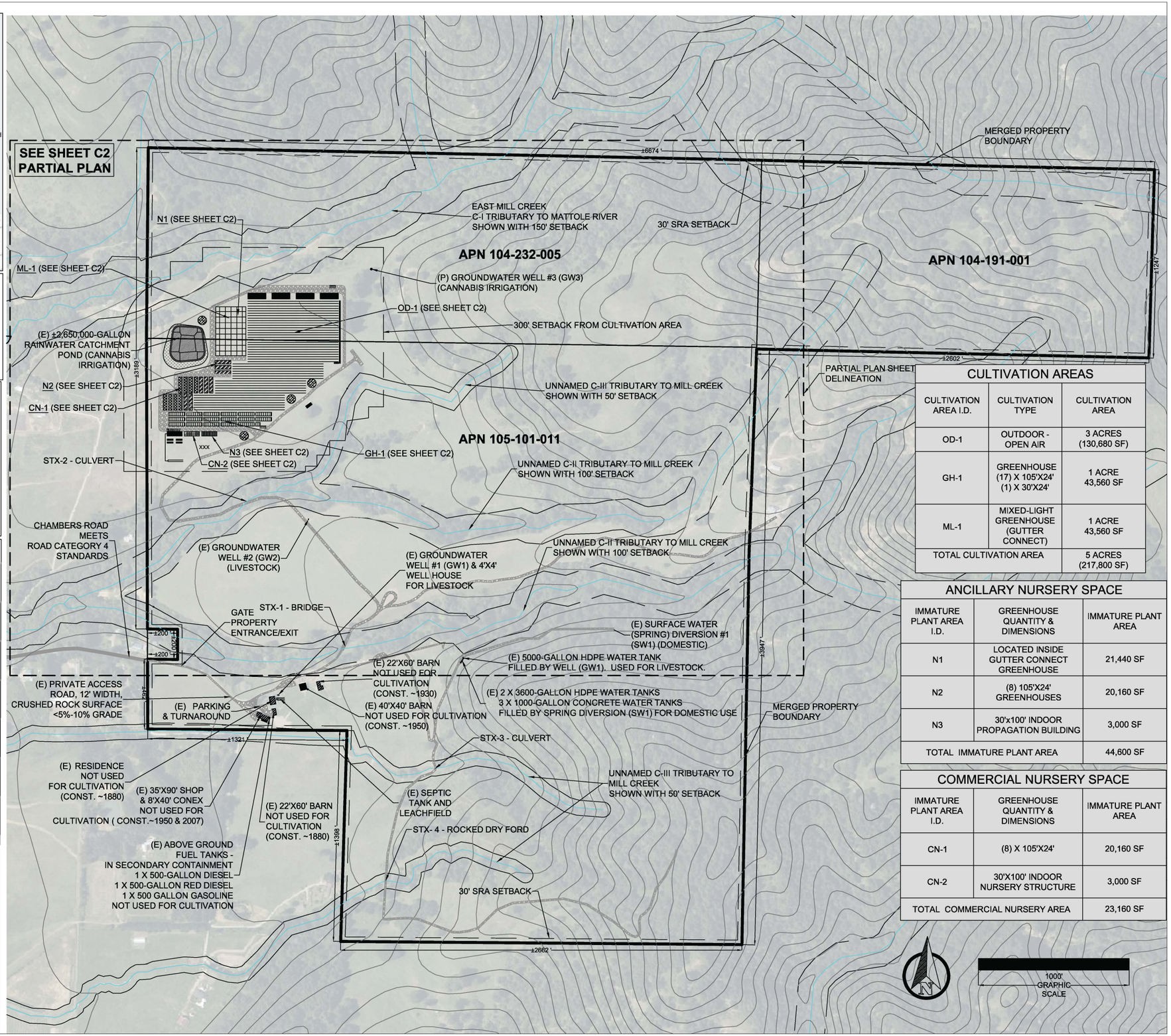
1. (P) RAINWATER CATCHMENT
2. (P) GROUNDWATER WELL (GW3)

WATER STORAGE

1. (P) 40 X 5,000 GALLON HDPE WATER STORAGE TANKS - 200,000 GALLONS
2. (P) RAINWATER CATCHMENT POND - 2,650,000 GALLONS

TOTAL WATER STORAGE: 2,850,000 GALLONS

10,000 GALLONS TO BE HELD IN RESERVE FOR FIRE SUPPRESSION WITH CALFIRE SRA STANDPIPE AND TURNAROUND AREA AS NOTED ON C2.



CULTIVATION AREAS

CULTIVATION AREA I.D.	CULTIVATION TYPE	CULTIVATION AREA
OD-1	OUTDOOR - OPEN AIR	3 ACRES (130,680 SF)
GH-1	GREENHOUSE (17) X 105'X24' (1) X 30'X24'	1 ACRE 43,560 SF
ML-1	MIXED-LIGHT GREENHOUSE (GUTTER CONNECT)	1 ACRE 43,560 SF
TOTAL CULTIVATION AREA		5 ACRES (217,800 SF)

ANCILLARY NURSERY SPACE

IMMATURE PLANT AREA I.D.	GREENHOUSE QUANTITY & DIMENSIONS	IMMATURE PLANT AREA
N1	LOCATED INSIDE GUTTER CONNECT GREENHOUSE	21,440 SF
N2	(8) 105'X24' GREENHOUSES	20,160 SF
N3	30'x100' INDOOR PROPAGATION BUILDING	3,000 SF
TOTAL IMMATURE PLANT AREA		44,600 SF

COMMERCIAL NURSERY SPACE

IMMATURE PLANT AREA I.D.	GREENHOUSE QUANTITY & DIMENSIONS	IMMATURE PLANT AREA
CN-1	(8) X 105'X24'	20,160 SF
CN-2	30'X100' INDOOR NURSERY STRUCTURE	3,000 SF
TOTAL COMMERCIAL NURSERY AREA		23,160 SF

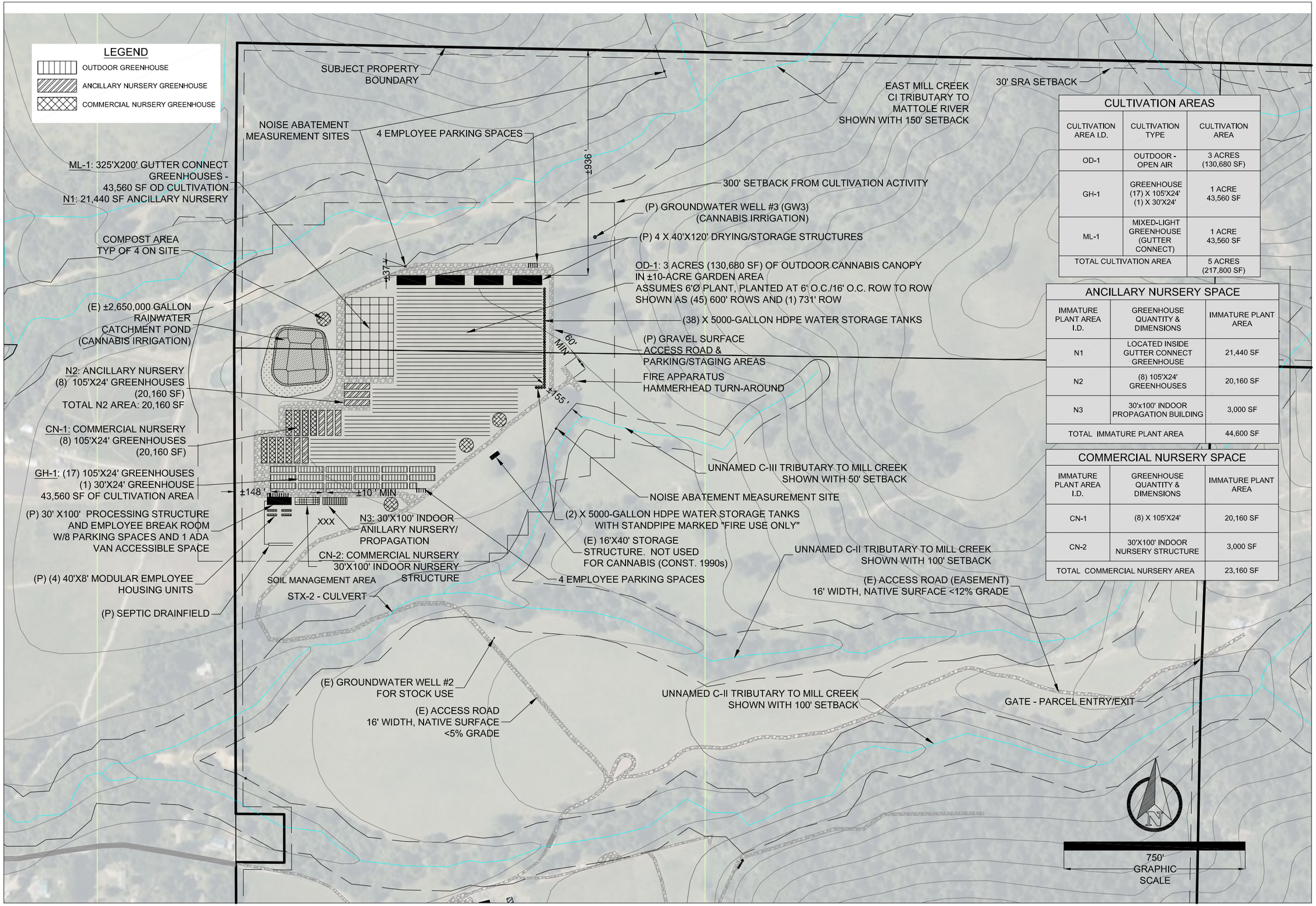
OUREVOLUTION ENGINEERING, INC.
1821 BUTTERMILK LANE
ARCATA, CA 95521
360.791.3259
ANDY@OUREVOLUTION.COM

NO.	HISTORY / REVISION	BY	CHK.	DATE

CISCO FARMS, INC.
MERGED PROPERTY APNs 105-101-011, 104-232-005 & 104-191-001
1414 CHAMBERS ROAD, PETROLIA, CA 95558

CULTIVATION SITE PLAN OVERVIEW

DRAWN	ACS
CHECK	GAC
APPROVED	ACS
DATE	06/27/2021
JOB NUMBER	CF-001
SHEET	C1



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360.791.3259
ANDY@OUREVOLUTION.COM

NO.	HISTORY / REVISION	BY CHK.	DATE

CISCO FARMS, INC.
MERGED PROPERTY APNs 105-101-011, 104-232-005 &104-191-001
1414 CHAMBERS ROAD, PETROLIA, CA 95558

PARTIAL SITE PLAN

DRAWN	ACS
CHECK	GAC
APPROVED	ACS
DATE	06/27/2021
JOB NUMBER	CF-001
SHEET	C2

INVASIVE SPECIES CONTROL PLAN

Assessor Parcel Numbers (APNs):
105 – 101 – 011 & 104 – 232 – 005

Prepared For:

Karl Benemann Construction, LLC
PO Box 1083
Trinidad, CA 95570

Prepared By:

Naiad Biological Consulting
www.naiadbiological.com
PO Box 121
Samoa, CA 95564
naiadbiological@gmail.com

Date Prepared:

October 16th, 2020

Certification: I hereby certify that the statements furnished in this report present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

X _____.

Mason London, MS Biology
Naiad Biological Consulting Principal Biologist

Table of Contents

Section 1 Introduction

1.1 Purpose and Need

Section 55.4.12.16 of the Humboldt County Commercial Cannabis Land Use Ordinance (CCLUO), Ordinance 2599, states that "[i]t is the responsibility of a certificate or permit holder to work to eradicate invasive species. As part of any application, the existence of invasive species on the project parcel need to be identified, including the type(s) of invasive plant species, where they are located, and a plan to control their spread. All invasive plant species shall be removed from the cultivation site and associated infrastructure using measures appropriate to the species. Removal shall be confirmed during subsequent annual inspection. Corrective action may be required if invasive species are found to have returned."

1.2 Biologist's Qualifications

The Invasive Species Control Plan was prepared by Mason London. Mason is the primary biological consultant of Naiad Biological Consulting. Mason holds a Master of Science Degree in Biology with a concentration in aquatic ecology from Humboldt State University. Mason has 11 years of experience working professionally as a botanist, wildlife biologist, aquatic ecological research scientist, and has instructed ecological field and classroom courses at the university level. Mason has worked in both Northern California and Southern Oregon targeting and eradicating invasive species for nonprofit land stewardship councils and government agencies.

1.3 Invasive Species Information

Not all non-native species are necessarily invasive species. For a species to be considered non-native, it means it has been introduced with human help (intentionally or accidentally) to a new place or new type of habitat where it was not previously found. Whereas, according to the USDA National Invasive Species Information Center, Executive Order 13112 (February 1999), "[a]n invasive species is defined as a species that is 1) non-native (or alien) to an ecosystem under consideration ***and*** 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health."

The invasive species list used for this Invasive Species Control Plan was derived from the California Invasive Plant Council (Cal-IPC), as required by the Humboldt County Board of Supervisors, in the Mitigation Monitoring and Reporting Program – Proposed Amendments to Humboldt County Code Regulating Commercial Cannabis Activities (Mitigation 3.4-3b: Invasive plant species).

1.4 Assessment and Control Options

A physical survey of the parcels, to determine the scope of the present invasive species, will create a comprehensive starting point for management techniques. Several control options exist for eradicating invasive species; including biological, mechanical and chemical.

1.4.1 Biological Eradication

This option is generally used as a first line of defense for control of invasive species. The reintroduction of native species can, in some cases, create a host for insects and microorganisms which will feed on the invasive species and/or create an environment which will discourage new growth of the invasive planet. Because of this, competitive planting of non-invasive species can help to cultivate an environment which will discourage new growth of invasive plants.

Many invasive species become introduced to an area after a recent disturbance. By using native grasses or plants, in a restoration style planting or seeding, many invasive species will become unable to establish and entrench the exposed soils.

1.4.2 Mechanical Eradication

This option is the most common short-term option for the eradication of invasive species. Hand pulling, or with use of tools such as a weed wrench, can be done easily during certain times of year when the soils are still moist, and roots are easily removed. Depending on the species, it can be important to remove the entire root because some species can regenerate from roots left in the soil. Other species need to be removed before their seeds fully mature in order to not promote aerial spreading of fertile seeds. In some of these cases, the removed plant matter will need to be removed from the property since some seeds are able to mature on a plant even when the plant has been removed from the ground. This method is ideal for populations of invasive plants that are smaller and can be easily managed with hands or hand tools.

For populations of invasive plants that cannot be easily or affectively managed by hand, use of weed whackers, tractors, or cutting tools may be required to eradicate or control the spread of certain species.

1.4.3 Chemical Eradication

This method is considered only as a last resort, if at all, since most commercial cannabis projects are operating under organic and/or natural growing techniques that never include the use of chemicals.

1.5 Project Description

The proposed project, responsible for this Invasive Species Control Plan request, consists of the cultivation of approximately 5 acres of cannabis in two locations within open pasture fields which have been used to graze cattle for the last 150 years or more (Map 2).

Section 2 Methods

2.1 Field Observations and Parcel Description

On July 3, 2020 the parcels of proposed cultivation (APNs: 105-101-011 and 104-232-005) were visited in order to observe the presence of invasive species (Map 1). The project area is located in Section 2, Township 2 South, Range 2 West (S2, T2S, R2W) of the Humboldt Base and Meridian (HBM) and in the Petrolia 7.5-minute USGS quadrangle (Quad code: 4012433). The parcel occurs within the Mill Creek watershed, which is a tributary to the Mattole River (CDFW Region: 1). The center location of the parcels is 40°19'26.9"N 124°15'36.1"W. The elevation range of the parcels is a high elevation of approximately 860 feet (approx. 262 meters) and a low elevation of approximately 225 feet (approx. 68 meters) (Google Earth Pro, 2020).

2.2 Invasive Species Assessment

The Cal-IPC Inventory was used to determine invasive species of concern for the site visit investigation. The *Weed Control in Natural Areas in the Western United States* (UC Davis Weed Research and information Center, 2013) was utilized to determine specific species information and adequate eradication and management methods, as recommended by Cal-IPC.

Section 3 Results

3.1 Parcel Habitat

The main habitat investigated within the parcel for the project area consists of large open upland grassland fields, open pasture for cattle grazing, riparian corridors, watercourses and a potential wetland feature. During the field survey other surrounding habitats on the parcel, described in more detail in *Section 4.1.1*, were also investigated for habitat quality and species presence. A wetland feature and watercourses on the parcel were also investigated and measured for adequate buffered setback from the proposed project site.

3.2 Observed Invasive Species

Many non-native species were observed during the site visit investigation throughout the project sites and the surrounding area, however, only a few invasive species were observed.

The invasive species observed in the parcels where the projects occur, listed on the CAL-IPC inventory, were:

Scientific Name	Common Name	CAL-IPC Invasiveness Rank
Cirsium vulgare	bull thistle	Moderate
Rubus armeniacus	Himalaya blackberry	High
Carduus pycnocephalus	Italian thistle	Moderate
Rumex acetosella	sheep sorrel	Moderate
Cytisus scoparius	Scotch broom	High
Cynosurus echinatus	hedgehog dogtail	Moderate
Briza maxima	big quaking-grass	Limited
Mentha pulegium	pennyroyal	High
Brassica rapa	field mustard	Limited

3.3 Invasive Species Information, Management and Removal Recommendations

3.3.1 Bull thistle (*Cirsium vulgare*)

Cirsium vulgare (Photo 1) was observed in isolated populations throughout the margins of the open field habitat and within portions of the riparian habitat (Map 2). *Cirsium vulgare* is found everywhere in the

United States, favors disturbed areas including rangeland, pastures, forest clear-cuts, roadsides and waste areas, and can also be seen in foothills, dry meadows and riparian areas. This species was introduced from Europe. *Cirsium vulgare* is not palatable to livestock and reduces the forage potential of infested pasture. Once *Cirsium vulgare* becomes established it can easily outcompete native plants.

Cirsium vulgare is considered to have ranking of *Moderate Invasiveness* by the Cal-IPC Inventory. The most feasible method of eradication for this species is by mechanical methods. According to the Weed Report from the Weed Control in Natural Areas in the Western United States, Cirsium vulgare can be effectively removed by "[t]illage, hoeing, and hand pulling… as long as they are done before flowering to prevent seed production. Any mechanical or physical control measure that severs the root below the soil surface is very effective…[however], the plant must be cut off below the soil surface and no leaves should remain attached, or the plant will recover."

The removed plants should be bagged up and removed from the property to make sure plant material and fertile seeds do not promote repropagation.

3.3.2 Himalaya blackberry (*Rubus armeniacus*)

Rubus armeniacus (Photo 2) is common throughout the western United States and favors disturbed, open, most sites. This species originally came from Eurasia and is a highly competitive plant with a growth form that allows it to quickly crowd out native species. Its thickets have dense canopies allowing little light penetration and reducing the growth of understory plants. This species is given the ranking of *High Invasiveness* by the Cal-PIC Inventory.

According to the Weed Report, from the Weed Control in Natural Areas in the Western United States, "[h]and pulling can be an effective control method for small populations. To successfully control populations with mechanical removal, it is important to remove the canes, roots and the root crowns to prevent resprouting. A Pulaski, mattock or similar device can be used to remove plants. Bulldozing may cause resprouting and can spread the weed by fragmenting roots and stems."

This species was observed in throughout the riparian habitat. If the applicant plans to attempt to eradicate or control the dominate presence of *Rubus armeniacus*, it is important to remove the entire plant since, according to the Weed Report, "[c]utting and removing only the aboveground biomass will result in the stimulated growth of root sprout. The root sprouts must be controlled and repeated cutting of the above-ground biomass during flowering time will exhaust the root stores."

3.3.3 Italian thistle (*Carduus pycnocephalus*)

Carduus pycnocephalus (Photo 3) was observed in isolated populations throughout the of the open field habitat and the riparian habitat. It is likely that this species exists in greater number throughout the parcel, but was not observed during the site visit. *Carduus pycnocephalus* is native to Europe and the Mediterranean region, and can be found throughout the western United States in disturbed open sites, roadsides, pastures, annual grasslands, and waste areas. This species is given the ranking of *Moderate Invasiveness* by the Cal-PIC Inventory.

The recommended mechanical eradication, by the Weed Report from the Weed Control in Natural Areas in the Western United States, for this species is to remove when they are small "by cutting." To be effective with this method, one must "…use a sharpened shovel at the top of the root crown. Grubbing hoes must cut the plants 2 to 4 inches below ground level to prevent resprouting from dormant axillary buds." It is also noted that "[m]owing the plant during flowering can greatly reduce seed production, though a single mowing is seldom sufficient due to the wide differences in the maturity of plant s in a natural population." If one does plan to control by mowing, this process should "wait till plants bolt and are about the flower."

3.3.4 Sheep sorrel (*Rumex acetosella*)

Rumex acetosella (Photo 4) was observed throughout the grazed field habitats. *Rumex acetosella* is originally native to Europe and favors agricultural lands, pastures, fields, roadsides, garden, landscaped areas, grasslands and open grazed lands. It can be found invading habitats such as riparian corridors, moist woodlands, forest margins, coastal habitats and a wide verity of disturbed sites. *Rumex acetosella* occurs nearly worldwide and can displace native grasses and forbs. This species is given the ranking of *Moderate Invasiveness* by the Cal-PIC Inventory.

The mechanical eradication that is recommended by the Weed Report from the *Weed Control in Natural Areas in the Western United States*, is to clarify remove by hand. The report explains that controlling this species "…can be difficult because of its creeping rhizomes and long-lives seeds, but is most effective when infestations are caught early." The report points out that "[p]lants are too short to be affected by mowing…" so the applicant may need to administer repetitive hand pulling to prioritize eradication efforts and assure that *Rumex acetosella* does not recolonize the grazed fields.

3.3.5 Scotch broom (*Cytisus scoparius*)

Cytisus scoparius (Photo 5) was found throughout the parcel at the perimeter of the forested openings and in the riparian areas. *Cytisus scoparius* is common throughout the western United States and favors

grasslands, shurblands, oak woodlands, forest margins, coastal habitats, riparian corridors; disturbed sites such as roadsides, pasture, gravelly floodplains, burned areas, cleared forests and is typically found in mountain regions and cool coastal areas with dry summers. It is a fast-growing deciduous shrub that can reach 5 to 10 ft tall. *Cytisus scoparius* forms dense stands that most wildlife finds impenetrable and unpalatable. These dense stems limit regeneration of most other plan species and the accumulation of woody biomass creates a dangerous fire hazard. This species is given the ranking of *High Invasiveness* by the Cal-PIC Inventory.

According to the Weed Report, from the *Weed Control in Natural Areas in the Western United States*, "[s]eedlings and small shrubs can be hand pulled. For larger established shrubs, a weed wrench or other woody weed extractor can be used. Extract the entire root or resprouting will occur." The report goes on the point out that the "[b]est results are achieved when soil is moist…" but the technician completing this mechanical control needs to be careful because "[d]isturbing the soil can stimulate the seedbank."

Given the abundant population of *Cytisus scoparius* it is recommended that the applicant focuses on the control of the individuals at the margins of forested areas in order to keep the spread of this population at bay. The Weed Report points out that "[c]utting broom off before it flowers will reduce seed production and will deplete the plant's energy reserves…" and that "[r]sprouting is common after treatment, but can be reduced by cutting broom at the beginning of the dry season." It is recommended that the applicant follows these methods of control in order to keep the spread of *Cytisus scoparius* at bay.

3.3.6 Hedgehog dogtail (*Cynosurus echinatus*)

Cynosurus echinatus (Photo 6) was observed in a few patches in grazed pastures, along the roadsides and within the riparian habitat (Map 2). *Cynosurus echinatus* is a grass (family *Poaceae*) that flowers June through August and can be found at lower elevations along trails and disturbed areas in both open and wooded areas. This species is given the ranking of *Moderate Invasiveness* by the Cal-PIC Inventory.

The recommended mechanical eradication, by the Weed Report from the Weed Control in Natural Areas in the Western United States, for this species is to mow, but must be done "done before seed sets in the early summer." The report goes on to explain how "[h]and pulling of annual grasses such as hedgehog dogtail may be effective early in spring before seed set, but is very labor-intensive and is only used on small infestations." It is also important to "[m]inimize soil disturbance when hand pulling to minimize new seed germination."

3.3.7 Big quaking-grass (*Briza maxima*)

Briza maxima (Figure 7) was observed throughout the open field habitat (Map 2). It is likely that this species exists in greater numbers throughout other habitats on the parcel, but was not observed during the site visit. *Briza maxima* is a winter annual grass and is found in coastal ranges throughout of California. This species is given the ranking of *Limited Invasiveness* by the Cal-PIC Inventory.

The mechanical eradication that is recommended by the Weed Report from the *Weed Control in Natural Areas in the Western United States*, is to till or pull the species "just before viable seed production." This is the only mechanical control recommendation that is considered to be "excellent," meaning that in general its success in eradicating the species is greater than 95%. Other "good" mechanical control recommendations, meaning its success of eradication is 80-95%, include grazing, prescribed burning, and mowing or cutting "...before seed drop[s]."

3.3.8 Pennyroyal (*Mentha pulegium*)

Mentha pulegium (Photo 8) was observed in few numbers in the open pastures and within the riparian areas (Map 2). *Mentha pulegium* is common as an obligate wetland indicator species in seasonally inundated soils of valleys and bottomlands, usually below 1,640 feet elevation. The presence of these species is not always representative of a wetland. This parcel is located within the USACE Land Resource Region A (LRR:A) within the western mountains, valleys and coast region. LRR:A, or the northwest forests and coast sub region, often experiences frequent and heavy rainfall events that create ample opportunities for wetland vegetation to propagate.

Even though pennyroyal is considered uncommon in much of California, it occurs in the sierra foothills, Central Valley, and most coastal counties from the Mexican border to Oregon. Pennyroyal favors disturbed sites, seeps, stream sides, vernal pools, marches and ditches. This species is given the ranking of *High Invasiveness* by the Cal-PIC Inventory.

According to the Weed Report, from the *Weed Control in Natural Areas in the Western United States*, "[p]ennyroyal infestations can be suppressed by manual removal of individual plants and small patches before flowering… below-ground reproductive tissues should be severed approximately 3 inches below the soil surface when the plants are beginning to bolt."

The report goes on to explain that "[t]illage can be an effective control strategy for rosettes and bolting plants." This species should be combated in order to prevent any potential spreading, though is probably not a major concern due to its isolation to the mesic habitat.

It is recommended that this species be left alone in its current habitat in order to not disturb the wetland by any irradiation measures.

3.3.9 Field mustard (*Brassica rapa*)

Brassica rapa (Photo 9) was observed in a few patches along the parcel's roads and within the riparian area. It is likely that this species exists in greater number throughout the margins of the open fields, but was not observed during the site visit. *Brassica rapa* is native to Europe and the Mediterranean region, and can be found throughout the western United States in disturbed open sites, roadsides, pastures, annual grasslands, and waste areas. This species is given the ranking of *Limited Invasiveness* by the Cal-PIC Inventory.

The recommended mechanical eradication, by the Weed Report from the Weed Control in Natural Areas in the Western United States, for this species is to mow or cut and and that "cutting at soil surface should be sufficient." The report also mentions other successful forms of non-chemical control being: "grazing, prescribed burning, tillage and grubbing, digging or hand pulling." For the applicant's cultivation plan, mowing, cutting, tilling or hand pulling would seem to be the most realistic and successful forms of control.

Section 4 Conclusion and Recommendations

The applicant can control the spread of the invasive species previously listed if the recommended mitigation and control methods are followed. If the applicant follows the "early detection rapid response" approach before the plants can flower and seed, the current state of the cultivation area should be easily treatable. Due to the clustering of the invasive species observed within the proposed project site locations, and given that many of these species do not favor the surrounding forested habitat, the applicant can halt the invasion of these species spreading throughout the surrounding habitats if action is taken.

Section 5 References

California Invasive Plant Council (Cal-IPC) Inventory: https://www.cal-ipc.org/plants/inventory/. Accessed September 2020.

Easter, J (2004). California Vegetation/Wildlife Habitat Regions. Accessed September 2020

Ordinance No. 2599, amending sections 314-55.4, 314-55.3.11.7, 314-55.3.7 and 314-55.3.15 of Chapter 4 of Division 1 of Title III of the County Code (CCLUP for Areas Outside the Coastal Zone). Board of Supervisors, County of Humboldt, State of California, May 2018. Accessed June 2020.

Weed Control in Natural Areas in the Western United States. UC Davis Weed Research and Information Center, 2013. Accessed January 2020.

Appendix A

Photo Documentation

APNs: 105 – 101 – 011 & 104 – 232 – 005

Invasive Species Control Plan

July 2020

Photo 1. A dead bull thistle (Cirsium vulgare) within one of the riparian corridors.

Photo 2. Himalaya blackberry (Rubus armeniacus) observed along the riparian area of the most southern Class II watercourse.

Figure 3. Italian thistle (Carduus pycnocephalus) circled in red.

Figure 4. The red buds of sheep sorrel

Figure 5. Scotch broom (Cytisus scoparius) circled in red.

Figure 6. Hedgehog dogtail (Cynosurus echinatus) inflorescences.

Figure 7. Big quaking-grass (Briza maxima) circled in red.

Figure 8. Pennyroyal (Mentha pulegium) circled in red.

Figure 9. Field mustard (Brassica rapa) with the yellow flowers.

Appendix B

Maps

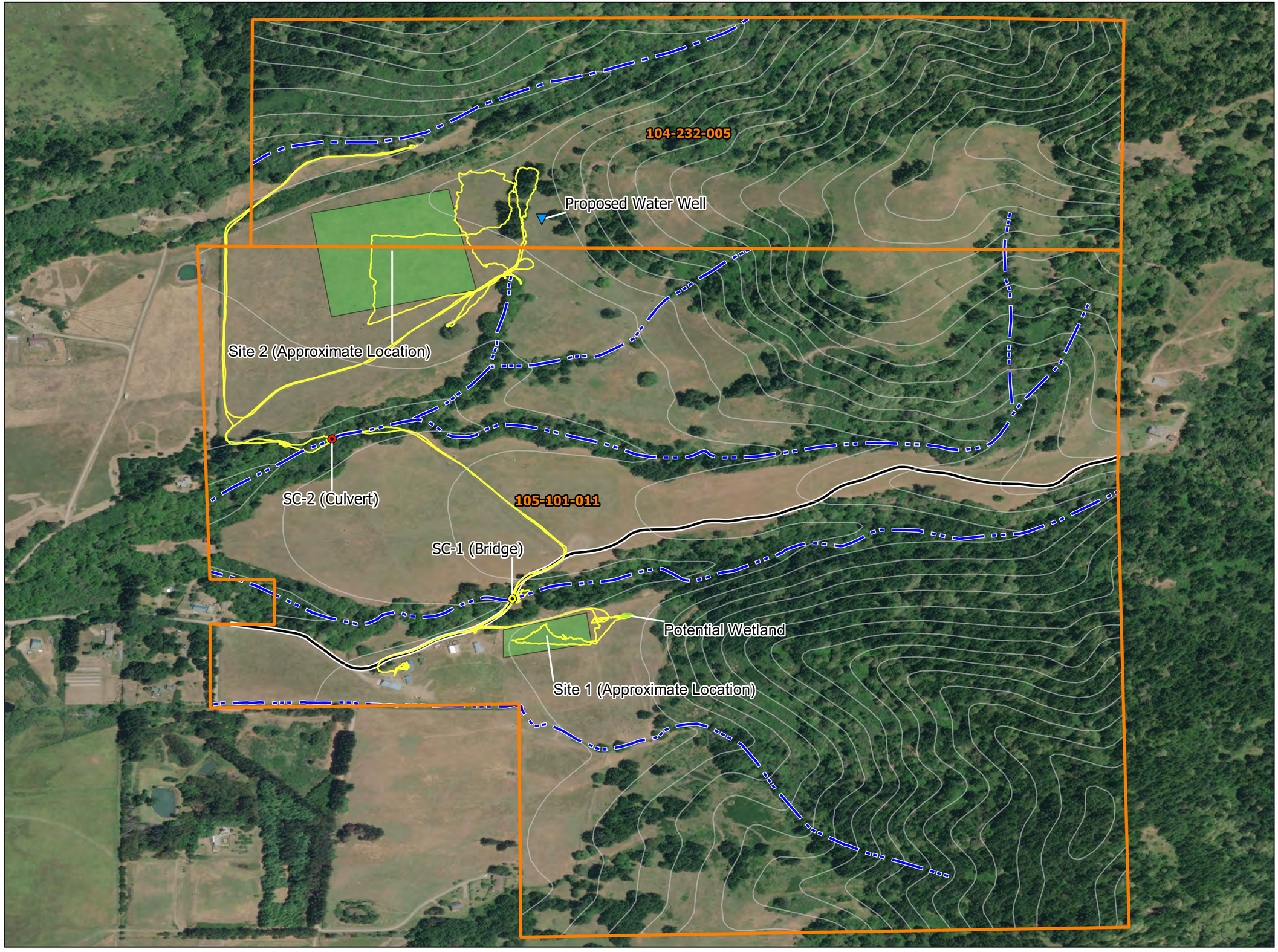
APNs: 105 – 101 – 011 & 104 – 232 – 005

Invasive Species Control Plan

July 2020

Naiad Biological Consulting

MAP 1. BENEMANN INVASIVE SPECIES SURVEY PATH MAP



N

MAP SCALE

0 250 500 ft

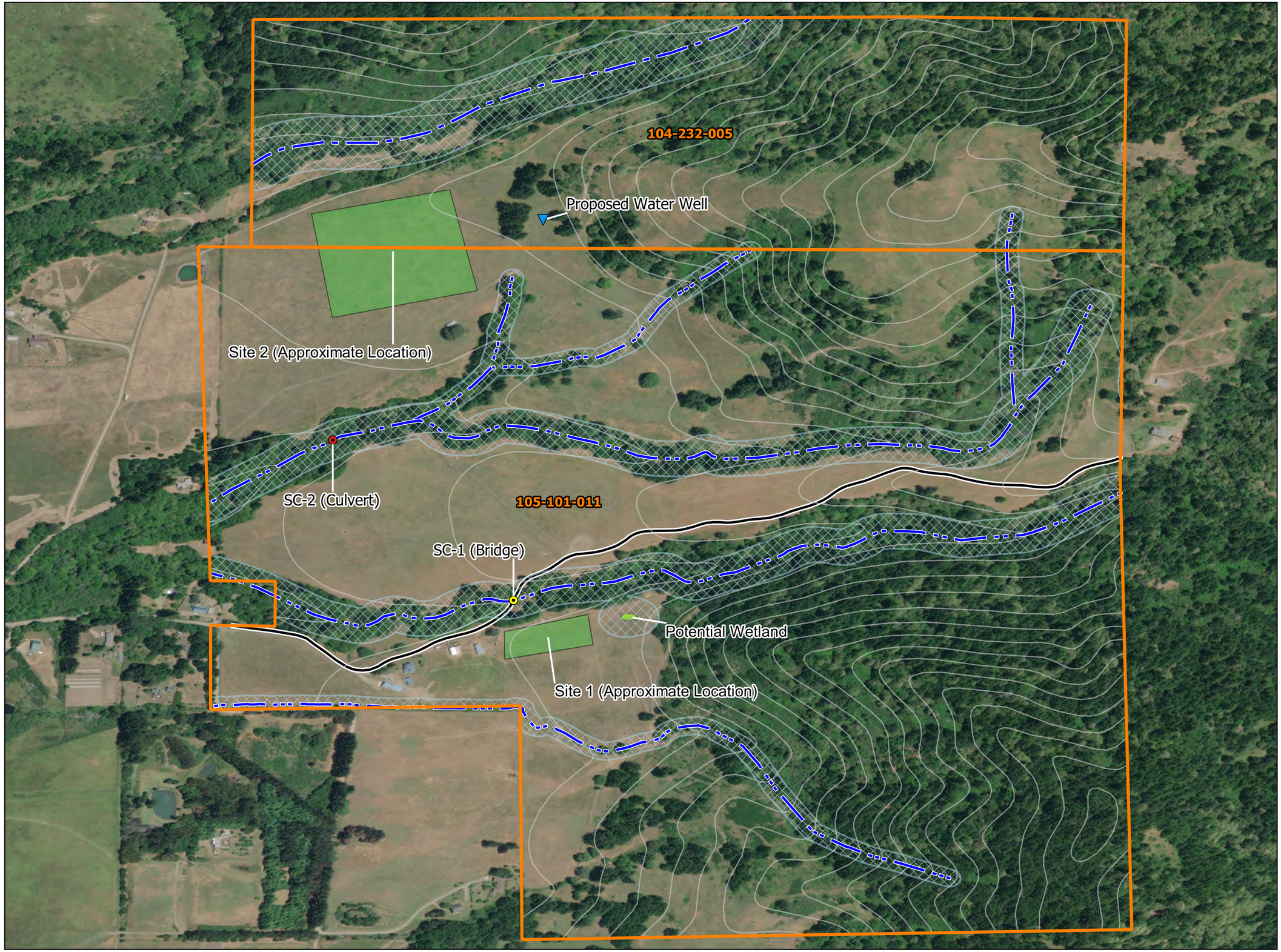
LEGEND

- Humboldt County APN
- USGS 40-ft Contours
- Access Road
- Well
- Bridge Stream Crossing
- Culverted Stream Crossing
- Mill Creek (Class I)
- Class II Stream
- Class III Stream
- Potential Wetland
- Potential Cultivation Site
- Biological Survey Path (7/3/2020)

LOCATED AT:
1414 CHAMBERS ROAD
PETROLIA, CALIFORNIA

Naiad Biological Consulting

MAP 2. BENEMANN BIOLOGICAL RESOURCE ASSESSMENT SITE MAP



N

MAP SCALE

0 250 500 ft

LEGEND

- Humboldt County APN
- USGS 40-ft Contours
- Access Road
- Well
- Bridge Stream Crossing
- Culverted Stream Crossing
- Mill Creek (Class I)
- Class II Stream
- Class III Stream
- Potential Wetland
- Aquatic Resource Buffer
- Potential Cultivation Site

LOCATED AT:
1414 CHAMBERS ROAD
PETROLIA, CALIFORNIA

GOLDEN EAGLE SURVEY REPORT

Assessor Parcel Number (APN):

105 – 101 – 011 & 104 – 232 – 005

1414 Chambers Road
Petrolia, CA 95558

***Prepared For*:**

Cisco Farms Inc.
P.O. Box 1083
Trinidad, CA 95570

***Prepared By*:**

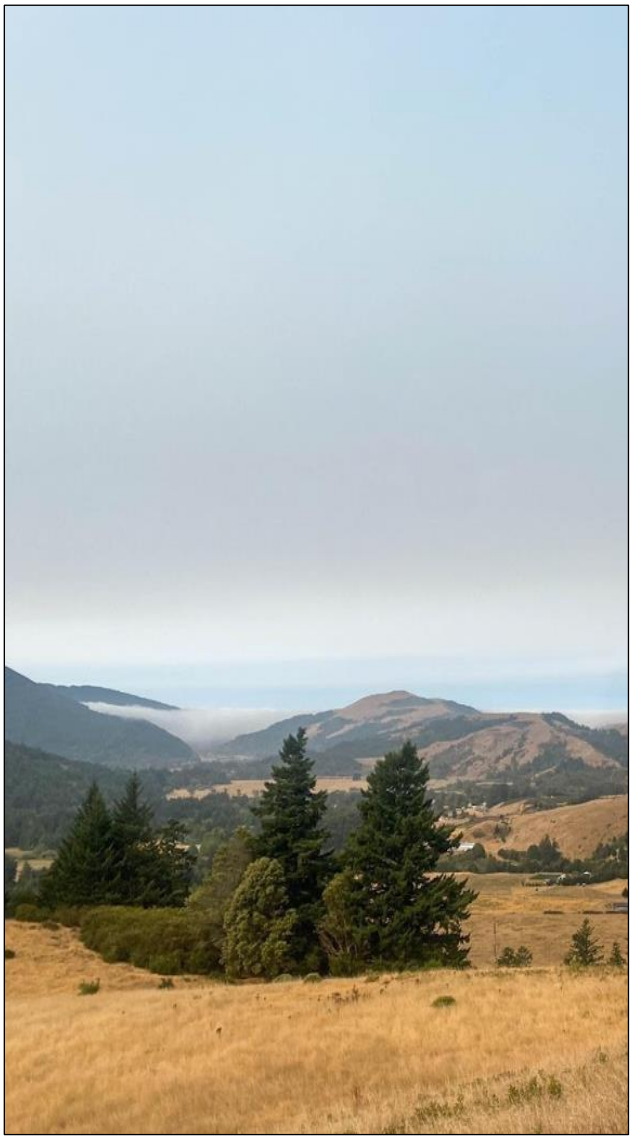
Erin Phillips
Contracted Wildlife Biologist
2086 Old Arcata Rd
Bayside, CA 95524

***In Conjunction With*:**

Naiad Biological Consulting
PO Box 121
Samoa, CA 95564

***Date Prepared*:**

February 15th, 2022



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1.0 SUMMARY OF FINDINGS

In August of 2021 and February of 2022, ground-based eagle and raptor nest surveys were completed following the protocol outlined by the American Eagle Research Institute in 2010 (Driscoll 2010).

No Golden eagles were observed soaring or foraging and no evidence of historical or current Golden eagle nests were observed. Limited prey availability was observed, suggesting that the proposed project site offered few sources of prey for Golden eagles. Based on the results of all three surveys, the project area has not been occupied historically or currently by Golden eagles. Due to the limited prey availability, it seems unlikely Golden eagles will occupy the property in the future, therefore given current mitigation measures, the project will likely have no impact to Golden eagles currently, or in the foreseeable future.

2.0 INTRODUCTION

In August of 2021 and February of 2022, ground-based eagle and raptor nest surveys were completed following the protocol outlined by the American Eagle Research Institute in 2010 (Driscoll 2010). The survey area was comprised of two general locations, the site where construction is proposed, and an observation lookout point with a panoramic view of the proposed project site and the adjacent parcels (Photo 1). These surveys occurred over two parcels, APN 105-101-011 and 104-232-005[1]. The overall topography of the parcel and surrounding land is steep with multiple ridgelines and drainages with sections of generally flat topography throughout the floodplains. The dominant habitats in the survey area are coniferous forests, mixed conifer and oak forests, coastal prairies, riparian, agricultural and rural development.

Golden eagles (*Aquila chrysaetos)* are known to occur in Humboldt County but are rare to uncommon residents and breeders generally observed in southern Humboldt County (Harris 2005, Hunter et al. 2005). Golden eagles are protected under the Bald and Golden Eagle Protection Act (Eagle Act) and Migratory Bird Treaty Act. Both of these acts prohibit take, which is defined as an attempt to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest or disturb. Golden eagles are upper-trophic aerial predators and commonly eat small to mid-sized mammals, birds and reptiles. Humboldt County has limited open and semi-open habitat, therefore Golden eagles' nest in low densities in coniferous habitats, surrounded by open spaces such as pasture-land and coastal prairies. Golden eagle nesting, roosting and foraging habitat occurs throughout the survey area. The surrounding coniferous forest and mixed conifer and oak forests are potential nesting and roosting habitats. The grassland, riparian and agricultural lands are potential foraging habitats.

Golden eagles are large-bodied raptors, as a result, breeding and raising young takes a large investment of energy and time. Generally, courtship begins in December and January. Nest building and egg laying begins in January and continues until March, and hatching and raising young occurs from April to June. Once juveniles have fledged, they will continue to be fed and taught to hunt until late November. Surveys for historical and current nests were conducted during this time period in order to accurately predict occupancy and habitat usage.

An initial eagle and raptor nest survey was conducted in August of 2021 to identify historical nests. This was followed by a prey availability survey to estimate available resources. A second eagle and raptor nest survey was conducted in February of 2022 to identify current nesting, roosting or foraging individuals. No evidence of nesting eagles were found during any of these surveys.

[1] See associated Biological Resource Assessment for complete Study Area site description.

3.0 METHODS

Surveys were conducted in accordance with the California Department of Fish and Wildlife guidance protocol or the Protocol for Golden Eagle Occupancy, Reproduction, and Prey Population Assessment (Driscoll 2010). Three ground-based surveys were conducted by two experienced avian biologists including two nesting surveys and one prey availability survey. In August of 2021, the preliminary eagle nesting survey and prey availability survey was conducted by Phil Johnston, a contracted professional Wildlife Tracker and Researcher. Phil received his BS in Wildlife Management and Conservation from HSU and is currently employed as a Mountain Lion and Fisher Biologist for California Department of Fish and Wildlife. Phil has extensive experience working with carnivores in Northern California and is also trained to do Northern Spotted Owl Surveys, Willow Flycatcher surveys, nesting bird surveys and Peregrine Falcon nest surveys.

The follow-up nesting survey was conducted in February of 2022 by Erin Phillips, a contracted Wildlife Biologist. Erin received her BS in Conservation Biology/Applied Vertebrate Ecology from Humboldt State University in 2017 and is currently employed as an Aquatics Biologist for Green Diamond Resource Company. Erin has 10 years of experience conducting a variety of ornithological surveys such as nesting bird surveys, area searches, and migration censuses. She is a certified NABC bird bander and has been trained to conduct Threatened and Endangered Species Surveys for Marbled Murrelets, Spotted Owls, and Willow Flycatcher. She can identify local species by ear and sight.

The Golden Eagle Predicted Habitat map from the California Department of Fish and Wildlife BIOS was also utilized as a preliminary tool to assess the project areas potential likelihood to support Golden eagles (Map 1).

3.1 Nesting Surveys and Prey Availability Survey

Nesting Surveys

The preliminary nesting survey was conducted on the morning of August, 22nd 2021 from 08:30 am until 12:30 pm. The project area was surveyed for soaring and perched golden eagles from a nearby hill (393328, 4464949) approximately 700 meters from the proposed project site with an aerial view of the project site, the rest of the parcel and adjacent land. Visibility was clear and raptors could be identified up to 2.5 miles away. Using binoculars and a 600mm lens, mature firs and oaks that were quality habitat for golden eagle nests, were closely inspected.

The secondary nesting survey was conducted on February 6th, 2022, the project area and adjacent land were surveyed for nesting, soaring, and roosting Golden eagles and other raptor species. The survey was conducted from 07:20 am until 12:00 pm on the same nearby hill (393328, 4464949) as the previous survey (Photo 2). There was little wind, no fog, and clear visibility. Potential nesting trees, power poles, powerlines, and fence posts were consistently scanned for perched eagles and raptors using Nikon Prostaff 5 binoculars and a spotting scope. Surrounding the project area, mature Douglas firs and oaks were identified as potential nesting trees (Photo 3). These trees were consistently searched for evidence of historical or current nests, roosting raptors, and perched raptors. Following the surveys, the base of potential nesting trees were searched for whitewash, pellets, and other evidence of raptor nests.

Prey Availability Survey

The 10-acre meadow outlined for development for the proposed project was surveyed for presence/abundance of important golden eagle prey species, focusing on black-tailed jackrabbits and California ground squirrels (Photo 4). Black-tailed jackrabbits defecate while feeding and piles of pellets

accumulate where the animals spend time. Assessing density from pellet counts is complicated, but transects for pellets are effective in determining presence/absence. California ground squirrels make conspicuous burrows wherever they live, and counting burrows has been used as a method for estimating population density. The 10-acre project area was surveyed in 27 transects totaling 3.8 miles, and the transects were conducted by a Cybertracker Certified “Track and Sign Specialist” with expertise in identifying and interpreting wildlife sign. The surveyor walked slowly and studied the ground for ground squirrel burrows and jackrabbit pellets.

4.0 RESULTS

Each ground-based nesting survey consisted of approximately 4 hours of survey time. No Golden eagles were observed soaring or foraging and no evidence of historical or current Golden eagle nests were observed. Limited prey availability was observed, suggesting that the proposed project site offered few sources of prey for Golden eagles. Furthermore, the map of Golden Eagle Predicted Habitat, the entire project area was ranked with medium predictability to harbor golden eagle habitat (Map 1).

Based on the results of all three surveys, the project area has not been occupied historically or currently by Golden eagles. Due to the limited prey availability, it seems unlikely Golden eagles will occupy the property in the future, therefore given current mitigation measures, the project will likely have no impact to Golden eagles currently, or in the foreseeable future.

4.1 Nesting Surveys and Prey Availability Survey

Nesting Surveys

During the preliminary survey, the surveyor identified a pair of red-tailed hawks, a pair of red-shouldered hawks, a pair of ravens, and dozens of turkey vultures from this observation point (Photo 5). No golden eagles were observed at any time, and no evidence of eagle nests of any kind was observed. The pairs of *Buteo* hawks observed were engaged in territorial nesting behavior and were quite obvious in their activities through vocalizations and soaring. The habitat within one mile of the proposed project area contains many mature fir, redwood and oak trees with decadent features which would be suitable for a golden eagle nest, but there is no evidence of nesting eagles at the time of this report.

During the secondary nesting survey, the surveyor identified three Red-tailed Hawks, two Red-shouldered Hawks, two American Kestrels, and eight Turkey Vultures. None of the raptors identified were in pairs or displaying nesting or breeding behavior. One adult male American Kestrel chased a second juvenile American Kestrel away from the property boundary. There were no female Kestrels observed and the adult male Kestrel was not displaying nesting or pair-bonding behavior. There were many groups of Steller's Jays, Common Ravens, and American Crows. These species are known to exhibit "mobbing" behavior towards larger-bodied raptors such as eagles, none of this behavior was observed. A snag with a family of woodpeckers was observed directly next to the tree that the adult male Kestrel occupied sporadically. Kestrels are cavity nesters and will normally display territorial behaviors around woodpeckers and other cavity nesters. None of this behavior was observed. No raptor nests, pellets, or whitewash were detected. There were at least ten potential nesting trees an average of 600 meters from the project area. Each tree had wide branches and an average DBH of 55 and a height of 100 ft. All species in Table 1. were identified visually and auditorily throughout the duration of the survey.

Prey Availability Survey

The transects encountered zero jackrabbit pellets and zero ground squirrel burrows. The lack of ground squirrel burrows decisively indicates a complete absence of ground squirrels from the project area. Pellets are more difficult to observe, and easier to overlook, but the lack of presence on the transects strongly indicates either very low jackrabbit presence/use or absence all together. Pocket gopher sign was abundant in the meadow, as was sign of at least one American badger hunting pocket gophers. Pocket gophers are not considered an important part of Golden eagle diet. California quail and wild turkey sign was present in and around the project area, and both species are considered prey for Golden eagles. No small mammals were visibly observed during the transects.

Table 1. Bird species identified and their current Federal and State Conservation Status observed on February 6th 2022 within the parcel and on adjacent land.

Common Name	Scientific Name	State Status (CESA)	Federal Status (ESA)
Red-shouldered Hawk	*Buteo lineatus*	Least Concern	Least Concern
Red-tailed Hawk	*Buteo jamaicensis*	Least Concern	Least Concern
Turkey Vulture	*Cathartes aura*	Least Concern	Least Concern
American Kestrel	*Falco sparverius*	Least Concern	Least Concern
Common Raven	*Corvus corax*	Least Concern	Least Concern
American Crow	*Corvus brachyrhynchos*	Least Concern	Least Concern
Stellar's Jay	*Cyanocitta stelleri*	Least Concern	Least Concern
California Scrub Jay	*Aphelocoma californica*	Least Concern	Least Concern
Red-shafted Flicker	*Colaptes auratus*	Least Concern	Least Concern
Acorn Woodpecker	*Melanerpes formicivorus*	Least Concern	Least Concern
Red-breasted Nuthatch	*Sitta canadensis*	Least Concern	Least Concern
American Robin	*Turdus migratorius*	Least Concern	Least Concern
California Quail	*Callipepla californica*	Least Concern	Least Concern
Greater Yellowlegs	*Tringa melanoleuca*	Least Concern	Least Concern
Wrentit	*Chamaea fasciata*	Least Concern	Least Concern
Black Phoebe	*Sayornis nigricans*	Least Concern	Least Concern
Western Bluebird	*Sialia mexicana*	Least Concern	Least Concern
Golden-crowned Sparrow	*Zonotrichia atricapilla*	Least Concern	Least Concern
Song Sparrow	*Melospiza melodia*	Least Concern	Least Concern
White-crowned Sparrow	*Zonotrichia leucophyrs*	Least Concern	Least Concern
Dark-eyed Junco	*Junco hyemalis*	Least Concern	Least Concern
Yellow-rumped Warbler	*Setophaga coronata*	Least Concern	Least Concern
Hutton's Vireo	*Vireo huttoni*	Least Concern	Least Concern
Ruby-crowned Kinglet	*Regulus calendula*	Least Concern	Least Concern
European Starling	*Sturnus vulgaris*	Least Concern	Least Concern
Anna's Hummingbird	*Calypte anna*	Least Concern	Least Concern

5.0 LITERATURE CITED

Driscoll, D.E. 2010. Protocol for golden eagle occupancy, reproduction, and prey population assessment. American Eagle Research Institute, Apache Jct., AZ. 55pp.

Harris, S. W. 2005. Northwestern California birds: a guide to the status, distribution, and habitats of the birds of Del Norte, Humboldt, Trinity, northern Mendocino, and western Siskiyou counties, California. Living Gold Press, Klamath River, California.

Hunter, J. E., D. Fix, G. A. Schmidt, and J. C. Power. 2005. Atlas of the breeding birds of Humboldt County, California. Redwood Region Audubon Society, Eureka, California.

APPENDIX A
PHOTO DOCUMENTATION

GOLDEN EAGLE SURVEY REPORT

Assessor Parcel Number (APN):
105 – 101 – 011 & 104 – 232 – 005

Photo 1. *View from observation hill (393328, 4464949).*

Photo 2. *February 6, 2022 Nesting survey GPS tracks.*

Photo 3. *Potential nesting trees, Douglas firs.*

Photo 4. *GPS tracks from Prey Availability Survey August 22, 2021.*

Photo 5. *Turkey vultures fly from 2 miles away during preliminary survey.*

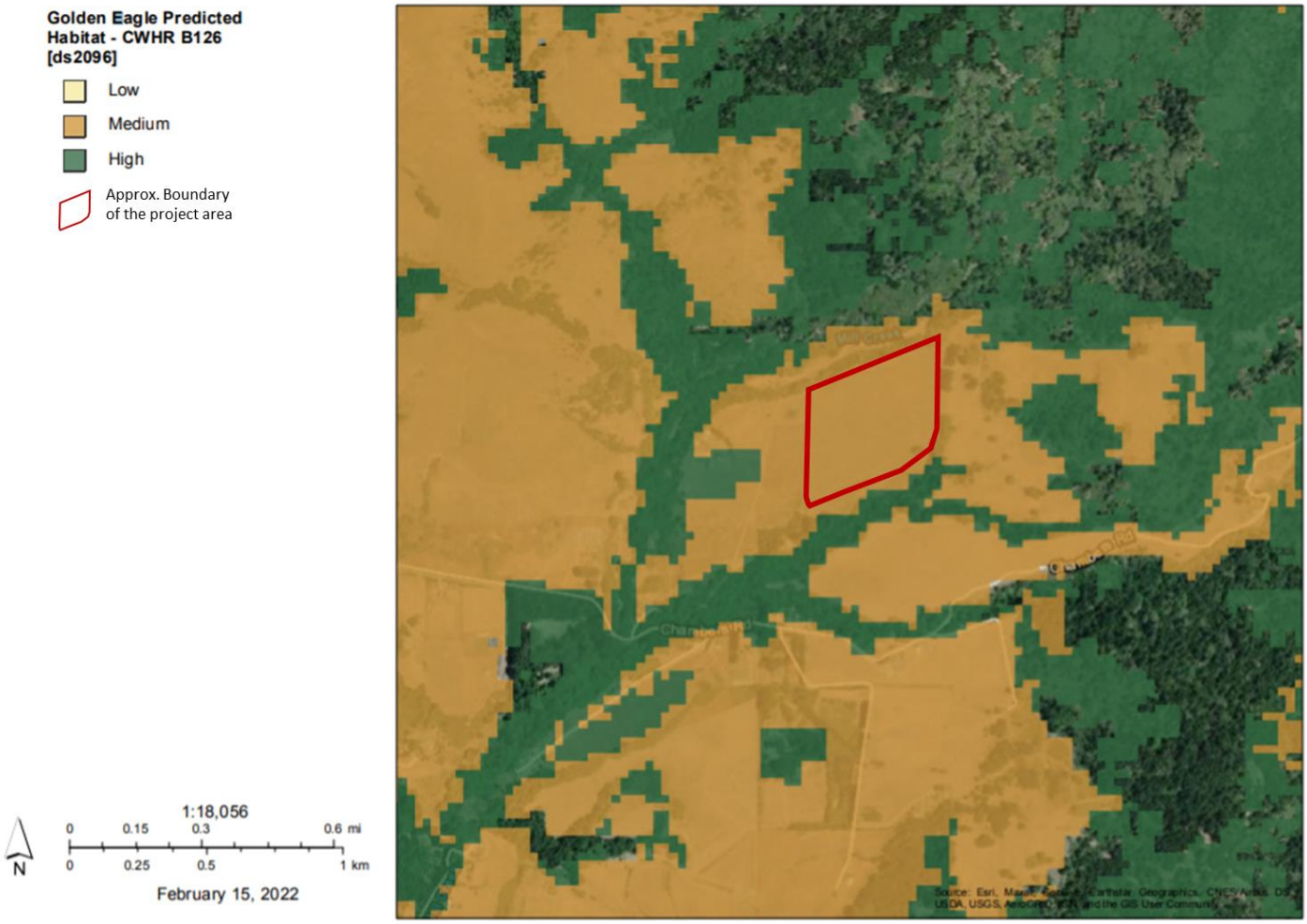
Photo 6. *Pocket Gopher signs in project area.*

APPENDIX B
MAP

GOLDEN EAGLE SURVEY REPORT

Assessor Parcel Number (APN):
105 – 101 – 011 & 104 – 232 – 005

Map of Golden Eagle Predicted Habitat within Project Area



HUMBOLDT COUNTY DEPARTMENT OF PUBLIC WORKS
ROAD EVALUATION REPORT

PART A: *Part A may be completed by the applicant*

Applicant Name: Cisco Farms, Inc.

APN: 104-232-005, 104-191-001 & 105-101-011 (one legal parcel)

Planning & Building Department Case/File No.:

Road Name: Chambers Road *(complete a separate form for each road)*

From Road (Cross street): Mattole Road

To Road (Cross street): Subject Property Gate/Access Point

Length of road segment: 1.1 miles Date Inspected: 11/18/2020

Road is maintained by: [X] County [ ] Other
(State, Forest Service, National Park, State Park, BLM, Private, Tribal, etc)

Check one of the following:

Box 1 [X] The entire road segment is developed to Category 4 road standards (20 feet wide) or better. If checked, then the road is adequate for the proposed use without further review by the applicant.

Box 2 [ ] The entire road segment is developed to the equivalent of a road category 4 standard. If checked, then the road is adequate for the proposed use without further review by the applicant.

An equivalent road category 4 standard is defined as a roadway that is generally 20 feet in width, but has pinch points which narrow the road. Pinch points include, but are not limited to, one-lane bridges, trees, large rock outcroppings, culverts, etc. Pinch points must provide visibility where a driver can see oncoming vehicles through the pinch point which allows the oncoming vehicle to stop and wait in a 20 foot wide section of the road for the other vehicle to pass.

Box 3 [ ] The entire road segment is not developed to the equivalent of road category 4 or better. The road may or may not be able to accommodate the proposed use and further evaluation is necessary. Part B is to be completed by a Civil Engineer licensed by the State of California.

The statements in PART A are true and correct and have been made by me after personally inspecting and measuring the road.

Signature

3/13/21
Date

Andy Sorter, P.E.
Name Printed

Important: Read the instructions before using this form. If you have questions, please call the Dept. of Public Works Land Use Division at 707.445.7205.

TO: County of Humboldt, Department of Public Works
County of Humboldt, Planning and Building Department

FROM: Andy Sorter, P.E., Principal Engineer, OurEvolution Energy & Engineering (OE)

RE: ROAD EVALUATION – Supplemental Information - Chambers Road from Access Point/Property Boundary of Subject Property to Intersection of Chambers Road and Mattole Road

SUBJECT PROPERTY - 1414 Chambers Road, Petrolia, CA 95558, APNs 105-101-011, 104-232-005 & 104-191-001 (constitute one legal parcel)

Completed for Cisco Farms, Inc.

Date: March 13, 2021

OUREVOLUTION ENGINEERING, INC.|1821 BUTTERMILK LANE, ARCATA, CA 95521
OFFICE: 707.633.4210|MOBILE: 360.791.3259
ANDY@OUREVOLUTION.COM

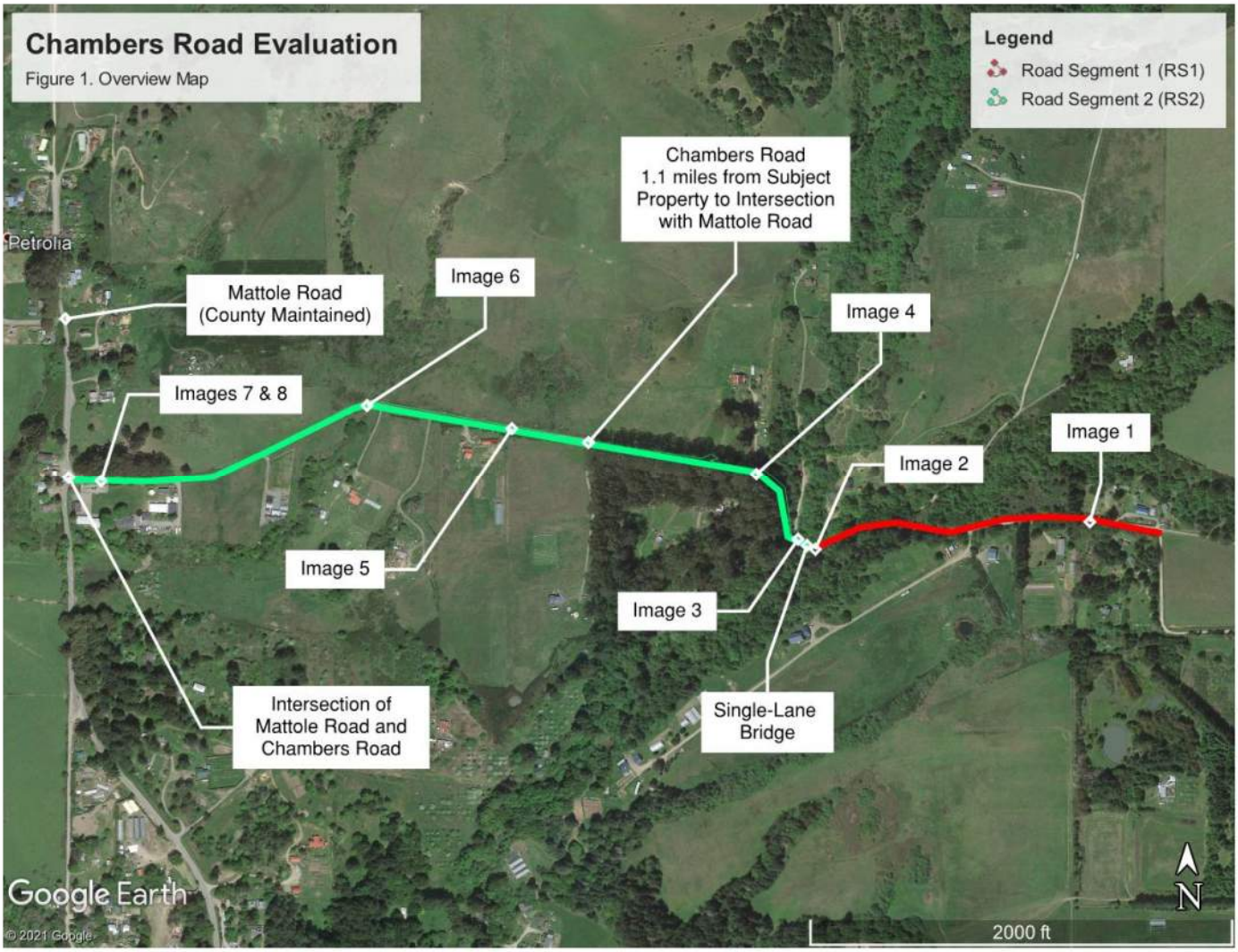


Figure 1. Chambers Road Evaluation – Overview Map

Image 1. RS1 – Representative of RS1 conditions (looking west). Details asphalt road surface, 20’ average road width, crowned geometry and fair road drainage, average slopes <5% - max 10%.

Image 2. Single-Lane Bridge (looking west). Note large turnout at opposite end of bridge.

Image 3. Single-Lane Bridge (looking east). Note large turnout at opposite end of bridge.

Image 4. Representative of RS2 conditions (looking west). Details asphalt surface, 20'+ average road width, shoulders, turnouts, crowned geometry with fair drainage, average slopes <5% - max <12%.

Image 5. Representative of RS2 conditions (looking west). Details asphalt surface, 20'+ average road width, shoulders, turnouts, crowned geometry with fair drainage, average slopes <5%.

Image 6. Representative of RS2 conditions (looking west). Details asphalt surface, 20'+ average road width, shoulders, turnouts, crowned geometry with fair drainage, average slopes <5%.

Image 7. Representative of RS2 conditions (looking west) at intersection of Chambers Road and Mattole Road. Details asphalt surface, 25'+ average road width, shoulders, turnouts, crowned geometry with fair drainage, average slopes <5%.

Image 8. Representative of RS2 conditions (looking east) near intersection of Chambers Road and Mattole Road. Details asphalt surface, 25'+ average road width, shoulders, turnouts, crowned geometry with fair drainage, average slopes <5%.

ourevolution
engineering

August 20, 2021

RE: Septic Feasibility – Cisco Farms, Inc., 1414 Chambers Road, Petrolia, CA 95558 (APNs 105-101-011, 104-232-005 & 104-191-001)

To Whom It May Concern:

As part of our work in developing conceptual site development plans for Cisco Farms, Inc., OurEvolution engineers (OE) oversaw excavation of Onsite Wastewater Treatment System (OWTS) "test pits" at the location of proposed primary and reserve leachfields. No groundwater or impermeable layers were observed in pits that were excavated to a minimum depth of 10'. As determined in coordination with Humboldt County Department of Environmental Health, the location of the proposed OWTS was outside of any Variance Prohibition Area.

In addition to the onsite inspection of the proposed OWTS dispersal locations, OE collected soil samples in the "most restrictive soil group encountered in the 36 inch soil column beneath the [proposed] trench bottom". These samples were submitted to North Coast Laboratories LTD. for bulk density and particle size analyses (BDPSA). Results of these analyses indicate that Zone 2 soils are present at both the proposed primary (TP-2) and reserve (TP-1) locations (See Attached 5/19/21 North Coast Laboratories LTD Lab Results). According to the Humboldt County Onsite Wastewater Treatment System (OWTS) Regulations and Technical Manual, "Sites where sufficient depths of Zone 2 soils occur may not require percolation testing to complete a dispersal system design. The application rates associated with the soil texture as shown in the table below [OWTS Technical Manual Table 2-Soil Application Rates] can be used to calculate dispersal system size.

It is my opinion, based on personal inspection of the test pits and the results of soils analyses, additional percolation testing is not required and the guidance provided by the OWTS Technical Manual Table 2 in conjunction with the soils analyses results is adequate to design a safe and effective OWTS for the subject property

Andy Sorter, P.E.
Principal Engineer
OurEvolution Engineering, Inc.

OUREVOLUTION ENGINEERING, INC
1821 BUTTERMILK LANE
ARCATA, CA 95521
OFFICE: 707.633.4210 | MOBILE: 360.791.3259
ANDY@OUREVOLUTION.COM

NORTH COAST LABORATORIES LTD.

May 19, 2021

Ourevolution
1821 Buttermilk Ln
Arcata, CA 95521

Attn: Andy Sorter

Order No.: 2104272
Invoice No.: 158624
PO No.:
ELAP No.1247-Expires July 2021

RE: Cisco Farms, INC. Septic Evaluation

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	TP 1
02A	TP 2

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

Flag = Explanation in Case Narrative

All solid results are expressed on a wet-weight basis unless otherwise noted.

Approved for release by:

Roxanne Golich, Project Manager

NORTH COAST LABORATORIES LTD.

Date: 05/19/2021

Report to: Our Evolution Engineering Inc.
1821 Buttermilk Lane
Arcata, CA. 95521

Attn: Andy Sorter

NCL#: 2104272-01A

AP#: NA **Hole#:** NA **Depth:** NA **Sample Description:** TP 1
Project Name/Number: Cisco Farms Inc. Septic Evaluation **Sampled by:** Andy Sorter

Date Received: 04/16/21 **Date Sampled:** 04/08/21

SOIL EXAMINATION FOR SOIL PERCOLATION SUITABILITY

Textural Analysis	39 %	Sand
(2 sig. figs.)	26 %	Clay
	35 %	Silt
	21 %	Coarse Fragments by Volume
Bulk density N/Q* g/cc		Zone Classification: 2

Comments:

Zone 1 - Soils in this zone are very high in sand content. They readily accept effluent, but because of their low silt and clay content they provide minimal filtration. These soils demand greater separation distances from ground water.

Zone 2 - Soils in this zone provide adequate percolation rates and filtration to effluent. They are suitable for use of a conventional system without further testing.

Zone 3 - Soils in this zone are expected to provide filtration of effluent, but their ability to accept effluent at a suitable rate is questionable. These soils require wet-weather percolation tests to verify their suitability for effluent disposal by conventional leach field methods.

Zone 4 - Soils in this zone are unsuitable for a conventional leach field because of their severe limitations for accepting effluent.

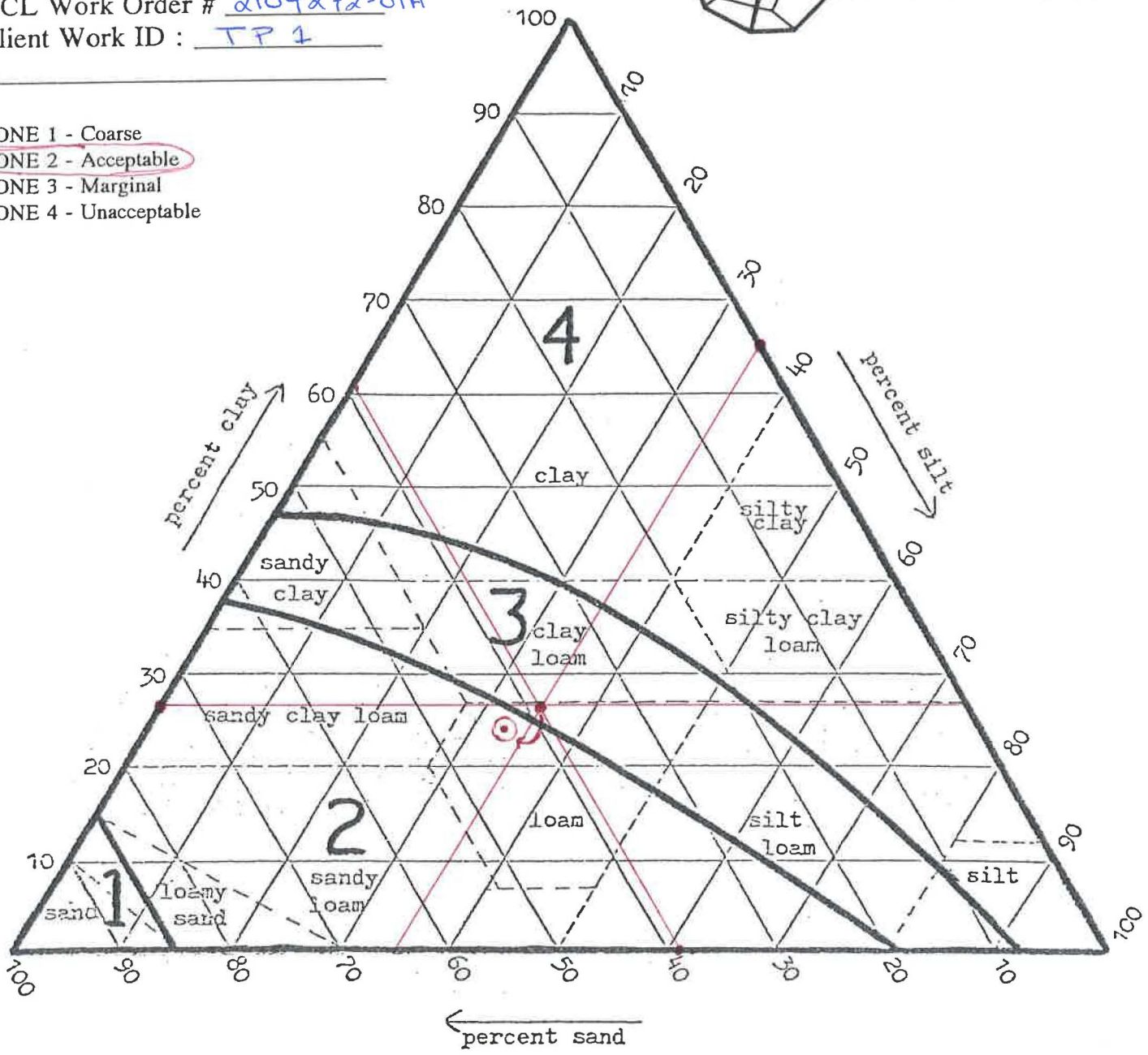
*The bulk densities of the samples were not quantifiable (NQ) due to lack of naturally occurring soil clods.

NORTH COAST LABORATORIES LTD.

SOIL PERCOLATION SUITABILITY CHART

NCL Work Order # 2104272-01A
Client Work ID : TP 1

ZONE 1 - Coarse
ZONE 2 - Acceptable
ZONE 3 - Marginal
ZONE 4 - Unacceptable



1. Plot texture on triangle based on percent sand, silt, and clay as determined by hydrometer analysis.

2. Adjust for coarse fragments by moving the plotted point in the sand direction an additional 2% for each 10% (by volume) of fragments greater than 2mm in diameter.

3. Adjust for compactness of soil by moving the plotted point in the clay direction an additonal 15% for soils having a bulk density greater than 1.7 gm/cc.

4. For soils falling in sand, loamy sand or sandy loam classification bulk density analysis will generally not affect suitability and analysis will not be necessary.

RESULTS

39 % Sand 26 % Clay 35 % Silt 21 % Coarse Fragments Bulk Density: N/A g/cc

5680 West End Road • Arcata California 95521 • 707-822-4649 • FAX 707-822-6831

NORTH COAST LABORATORIES LTD.

Date: 05/19/21

Report to: Our Evolution Engineering Inc.
1821 Buttermilk Lane
Arcata, CA. 95521

Attn: Andy Sorter

NCL#: 2104272-02A

AP#: NA **Hole#:** NA **Depth:** NA **Sample Description:** TP 2
Project Name/Number: Cisco Farms Inc. Septic Evaluation **Sampled by:** Andy Sorter

Date Received: 04/16/21 **Date Sampled:** 04/08/21

SOIL EXAMINATION FOR SOIL PERCOLATION SUITABILITY

Textural Analysis	53 %	Sand
(2 sig. figs.)	27 %	Clay
	20 %	Silt
	32 %	Coarse Fragments by Volume
Bulk density N/Q* g/cc		Zone Classification: 2

Comments:

Zone 1 - Soils in this zone are very high in sand content. They readily accept effluent, but because of their low silt and clay content they provide minimal filtration. These soils demand greater separation distances from ground water.

Zone 2 - Soils in this zone provide adequate percolation rates and filtration to effluent. They are suitable for use of a conventional system without further testing.

Zone 3 - Soils in this zone are expected to provide filtration of effluent, but their ability to accept effluent at a suitable rate is questionable. These soils require wet-weather percolation tests to verify their suitability for effluent disposal by conventional leach field methods.

Zone 4 - Soils in this zone are unsuitable for a conventional leach field because of their severe limitations for accepting effluent.

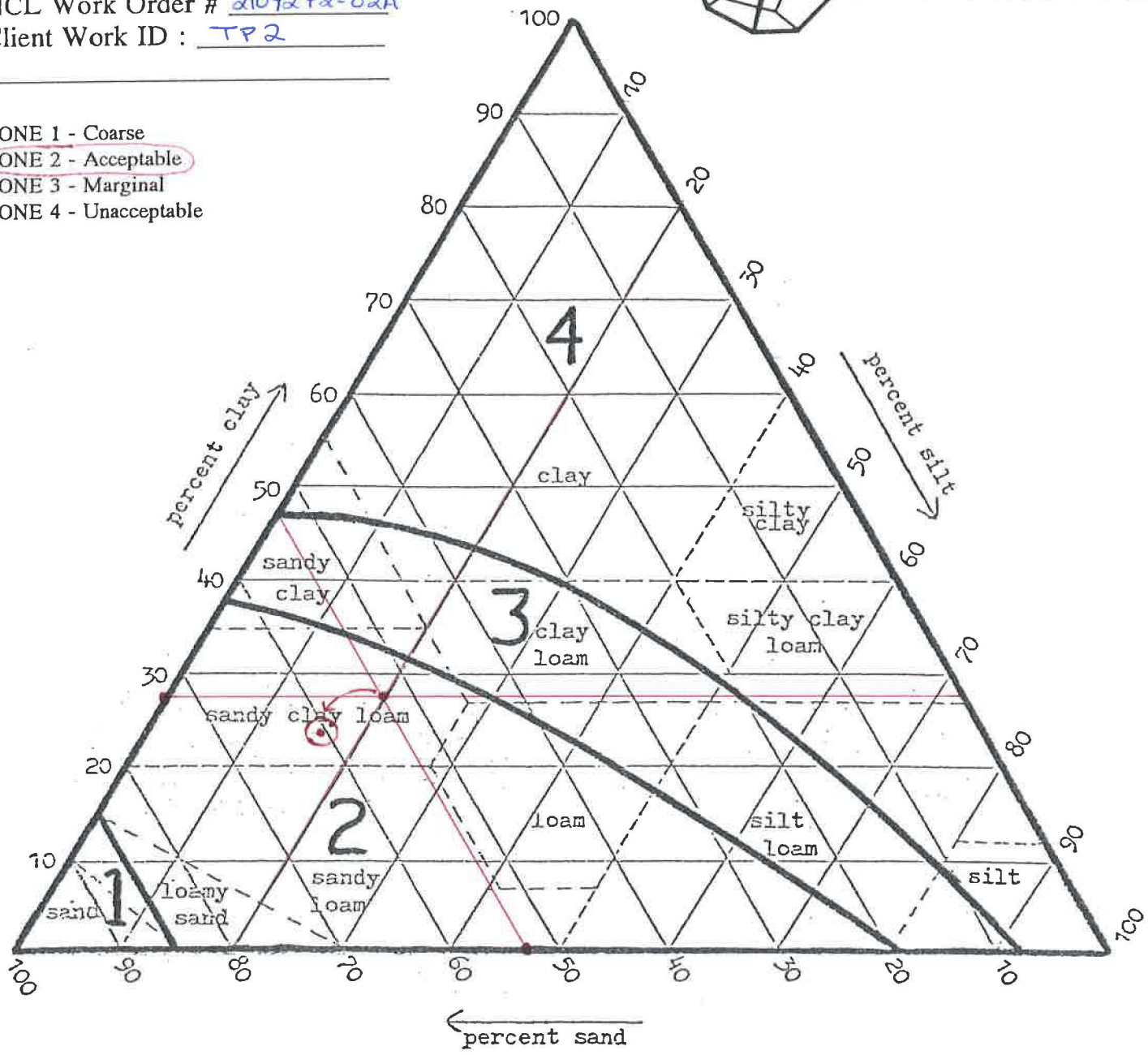
*The bulk densities of the samples were not quantifiable (NQ) due to lack of naturally occurring soil clods.

NORTH COAST LABORATORIES LTD.

SOIL PERCOLATION SUITABILITY CHART

NCL Work Order # 2104272-02A
Client Work ID : TP2

ZONE 1 - Coarse
ZONE 2 - Acceptable
ZONE 3 - Marginal
ZONE 4 - Unacceptable



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2. Adjust for coarse fragments by moving the plotted point in the sand direction an additional 2% for each 10% (by volume) of fragments greater than 2mm in diameter.

3. Adjust for compactness of soil by moving the plotted point in the clay direction an additonal 15% for soils having a bulk density greater than 1.7 gm/cc.

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RESULTS

53 % Sand 27 % Clay 20 % Silt 32 % Coarse Fragments Bulk Density: N/A g/cc

5680 West End Road • Arcata California 95521 • 707-822-4649 • FAX 707-822-6831

P. 1 of 1

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 2104272

Attention:
Results & Invoice to: Our Evolution Engineering Inc.
Address: 1821 Buttermilk Lane
Arcata, CA 95521
Phone: 707-616-5852
Copies of Report to: Andy Sorter - Our Evolution
Sampler (Sign & Print):

PROJECT INFORMATION
Project Number: Cisco Farms, Inc.
Project Name: Septic Evaluation
Purchase Order Number:

TAT: ☐ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☐ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS
	TP1	4/8/21					BOD5A
	TP2	4/8/21					

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 17.4°C
	Received On Ice? Y/N
	Samples Intact? Y/N
	Preserved? Y/N
	Preserved @ NCL? Y/N/NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
	4/16/21		4/16/21 1245

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

ONSITE WASTEWATER TREATMENT SYSTEM DESIGN

CISCO FARMS, INC.
1414 CHAMBERS ROAD
PETROLIA, CA 95558
APNS: 105-101-011, 104-232-005 & 104-191-001

VICINITY MAP (N.T.S.)

PROJECT LOCATION

SUBJECT PARCEL

DRIVING DIRECTIONS FROM PETROLIA GENERAL STORE

1. NORTH ON SHERMAN AVENUE TOWARD GRANT STREET
2. RIGHT ON GRANT STREET
3. CONTINUE ONTO OLD COAST WAGON ROAD
4. CONTINUE ONTO MATTOLE ROAD (0.2 MILES)
5. TURN LEFT ONTO CHAMBERS ROAD (1.5 MILES)

1414 CHAMBERS ROAD ON RIGHT SIDE OF ROAD

PROJECT INFORMATION

APPLICANT: CISCO FARMS, INC.
PROPERTY OWNERS OF RECORD: BENEMANN FAMILY TRUST
OWNER ADDRESS: PO BOX 1083 TRINIDAD, CA 95570
APN: 105-101-011, 1044-232-005, & 104-191-001
(3 APNS CONSTITUTE ONE LEGAL PARCEL)
PROPERTY ADDRESS: 1414 CHAMBERS ROAD, PETROLIA, CA 95558
MERGED PROPERTY SIZE: 517 ACRES
CURRENT GENERAL PLAN: AG
ZONING WITH COMBINING ZONES: AE-B-5(160)

SHEET INDEX

PREPARED BY:
OUREVOLUTION ENGINEERING, INC.
1821 BUTTERMILK LANE
ARCATA, CA 95521
ANDREW SORTER, P.E.
CALIFORNIA PROFESSIONAL ENGINEER # C73810
OCTOBER 26, 2021

GENERAL NOTES:

1) TOPOGRAPHIC AND OTHER EXISTING CONDITIONS PRESENTED WITHIN THIS SHEET SET ARE BASED ON A SURVEY COMPLETED BY OTHERS. TOPOGRAPHIC INFORMATION PROVIDED IS RELATIVE AND BASED ON AN ASSUMED BENCHMARK DATUM OF 217.71' (AS NOTED) AT NW CORNER OF (E) APPROXIMATE PROPERTY/FENCELINE.
2) PROPERTY LINES SHOWN ARE BASED ON HUMBOLDT COUNTY WEBGIS DATA. NO BOUNDARY SURVEY WAS COMPLETED BY OUREVOLUTION ENGINEERING, INC.
3) EXISTING WATERCOURSES ON SUBJECT PROPERTY SHOWN PER NRCS, USGS STREAMLINES AND FIELD OBSERVATIONS.
4) NO PORTION OF THE PROPOSED PROJECT LOCATION IS WITHIN A STREAMSIDE MANAGEMENT AREA.
5) A LEGAL BOUNDARY SURVEY BY A CALIFORNIA LICENSED SURVEYOR IS RECOMMENDED PRIOR TO INITIATION OF CONSTRUCTION.
6) CONTRACTOR TO COMPLETE UNDERGROUND UTILITIES LOCATE THROUGH UNDERGROUND SERVICE ALERT OF NORTHERN CALIFORNIA PRIOR TO ANY EXCAVATION.

EAST MILL CREEK
CI TRIBUTARY TO
MATTOLE RIVER
(150' SETBACK)

(P) GROUNDWATER WELL #3 (GW3)
(CANNABIS IRRIGATION)

PROPOSED COMMERCIAL
CANNABIS OPERATION

(P) GRAVEL SURFACE
ACCESS ROAD &
PARKING/STAGING AREAS

UNNAMED C-II TRIBUTARY
TO MILL CREEK (100' SETBACK)

(P) 30' X100' PROCESSING STRUCTURE
AND EMPLOYEE BREAK ROOM
W/8 PARKING SPACES AND 1 ADA
VAN ACCESSIBLE SPACE
(1 ADA BATHROOM WITH 1 TOILET, 1 SHOWER,
1 BATHROOM WITH 1 TOILET & 1 SINK)

<P> 7,500-GAL SEPTIC TANK
(25-FT MINIMUM SETBACK)

TP-1 LOCATION

TP-2 LOCATION

(P) (4) 40'X8' MODULAR EMPLOYEE
HOUSING UNITS (1 ADA BATHROOM EACH,
1 SHOWER, 1 TOILET, 1 SINK)
DOMESTIC KITCHEN FACILITY
& CLOTHES WASHING MACHINE

<P> PRIMARY DRAINFIELD AREA
(5% AVG. SLOPE)
50-FT MINIMUM SETBACK

(P) 51.5'X148' RESERVE
DRAINFIELD AREA
(±7,622-SF)
AREA (5% AVG. SLOPE)

(E) GROUNDWATER WELL #2
FOR STOCK USE

UNNAMED C-II TRIBUTARY
TO MILL CREEK (100' SETBACK)

(E) ACCESS ROAD
16' WIDTH, NATIVE SURFACE
<5% GRADE

(E) RESIDENCE WITH (E) OWTS

SUBJECT PROPERTY
BOUNDARY
PER HUMBOLDT COUNTY
WEB-GIS

N

0 550 1100 Feet

1" = 275' PRINTED 34" X 22"
1" = 550 PRINTED 17" X 11"

OUREVOLUTION ENGINEERING, INC.
1821 BUTTERMILK LANE
ARCATA, CA 95521
360.791.3259
ANDY@OUREVOLUTION.COM

NO.	HISTORY / REVISION	BY	CHK.	DATE

CISCO FARMS, INC.
APNS: 105-101-011, 104-232-005 & 104-191-001
1414 CHAMBERS ROAD, PETROLIA, CA 95558
ONSITE WASTEWATER TREATMENT SYSTEM

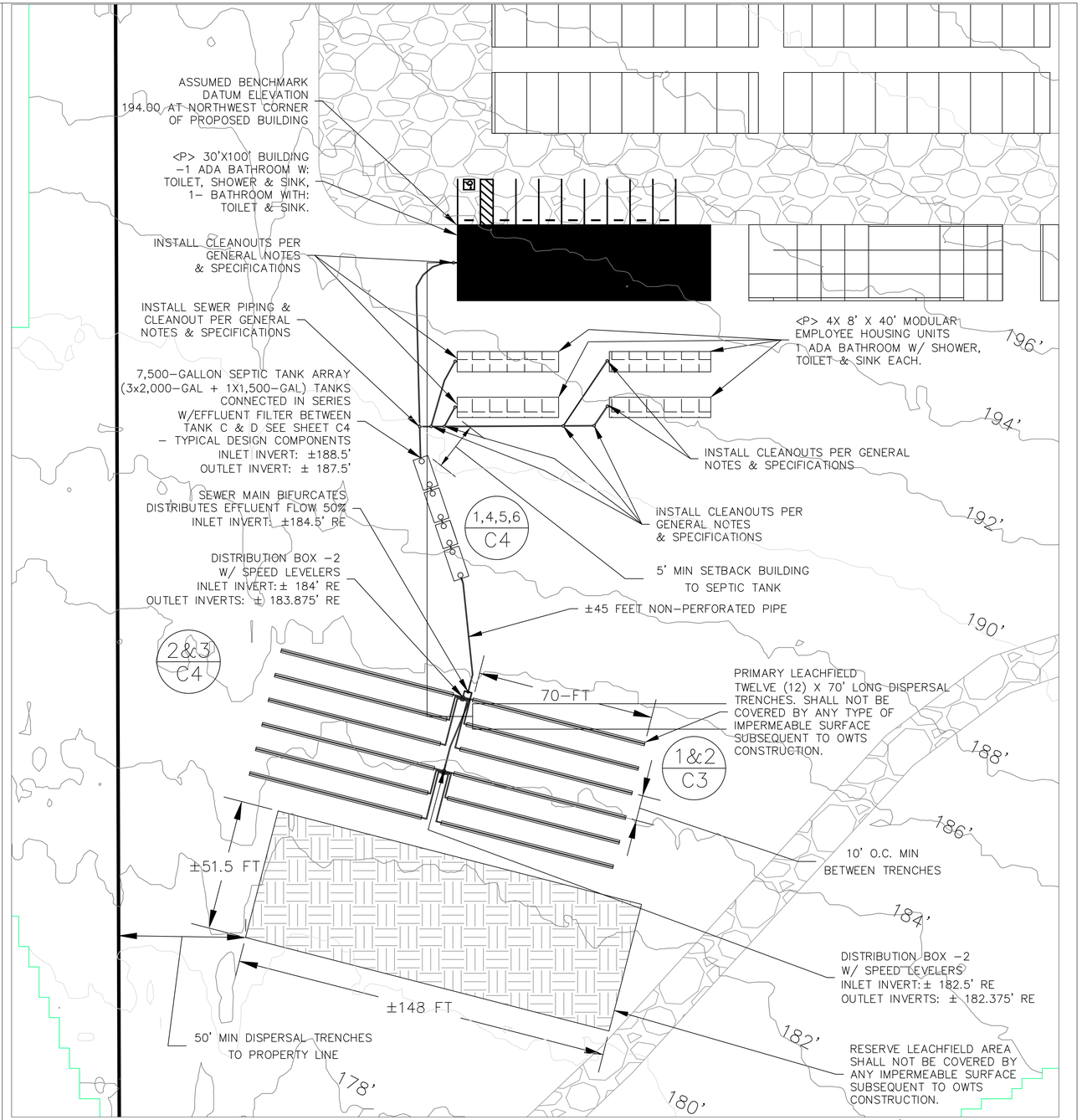
OWTS SITE PLAN

DRAWN	GSA
CHECK	ACS
APPROVED	ACS
DATE	10/26/2021
JOB NUMBER	CF-21

SHEET
C1

GENERAL NOTES AND SPECIFICATIONS

1. ANY VARIATIONS TO THIS DESIGN SHALL FIRST BE APPROVED BY THE ENGINEER OF RECORD AND THE COUNTY PRIOR TO INSTALLATION.
2. OWNER/INSTALLER SHALL NOT REMOVE OR DISTURB TOPSOIL IN THE DISPERSAL AREA PRIOR TO OR SUBSEQUENT TO INSTALLATION. REMOVAL OF TOPSOIL COULD RENDER THE PROPOSED SITE UNUSABLE.
3. ALL CONSTRUCTION MATERIALS AND THE INSTALLATION OF THIS DESIGNED OWTS SHALL CONFORM TO ALL APPLICABLE STATE AND COUNTY HEALTH DEPARTMENT AND MANUFACTURER REQUIREMENTS.
4. NEW AND REPLACEMENT SEPTIC TANKS SHALL BE APPROVED BY THE INTERNATIONAL ASSOCIATED OF PLUMBING AND MECHANICAL OFFICIALS (IAPMO).
5. ALL TWO COMPARTMENT SEPTIC TANKS SHALL BE EQUIPPED WITH AN EFFLUENT FILTER (MEETING ANSI/NSF STANDARD 46) LOCATED IN THE OUTLET COMPARTMENT IN SUCH A MANNER AS TO BE EASILY SERVICED.
6. SEPTIC TANKS SHALL BE INSTALLED IN A LOCATION THAT ALLOWS FOR PRACTICAL ACCESS AND SERVICING.
7. EXCAVATIONS FOR ALL SEPTIC TANKS SHALL PROVIDE A LEVEL, UNIFORM LOAD BEARING SURFACE FREE OF IMBEDDED ROCK OR BOULDERS. WET OR UNSTABLE BEDS SHALL BE OVER-EXCAVATED, BACKFILLED AND COMPACTED WITH AN APPROVED MATERIAL SUITABLE TO STABILIZE AND SUPPORT THE TANK.
8. ALL SEPTIC TANKS SHALL BE WATERTIGHT AND ODOR TIGHT.
9. SEPTIC TANK SHALL BE COMPOSED OF MULTIPLE 2,000-1,500-GALLON CAPACITY TANKS CONNECTED IN SERIES PER THE MANUFACTURERS RECOMMENDATIONS. ONE OF THE FOUR TANKS WILL FEATURE A BAFFLE TO ALLOW THE SYSTEM TO FUNCTION AS A TWO-COMPARTMENT CONSTRUCTION HAVING WATERTIGHT RISERS OVER EACH ACCESS OPENING WITH THE RISER TOPS SET WITHIN 6-INCHES OF FINISHED GRADE. THE FIRST COMPARTMENT SHALL BE TWICE THE CAPACITY OF THE SECOND COMPARTMENT.
10. SEPTIC TANK INLET AND OUTLET SHALL BE AT LEAST EQUAL IN DIAMETER TO THE BUILDING SEWER PIPE.
11. TYPE AND SIZE OF BUILDING SEWERS USED IN OWTS SHALL BE IN ACCORDANCE WITH THE CALIFORNIA UNIFORM PLUMBING CODE AND SHALL BE RUN IN A PRACTICAL ALIGNMENT AND AT A UNIFORM SLOPE OF NOT LESS THAN ¼" PER FOOT TOWARDS DISTRIBUTION BOX AND PERFORATED PIPING.
12. OWTS SEWER PIPNG SHALL BE 4"Ø SCHEDULE 40 PVC THAT MEETS MOST CURRENT ASTM D-2672 STANDARDS OR ASTM SDR35 PIPING WITH SOLVENT WELDED OR RUBBER GASKETED JOINTS.
13. ALL SEWER FITTINGS SHALL BE COMPATIBLE WITH 4"Ø SCHEDULE 40 PVC (ASTM D-2672) OR ASTM SDR35 PIPING AND SHALL BE PLUMBED IN A MANNER THAT RENDERS THEM WATER TIGHT.
14. MINIMUM FIRST FIVE FEET OF PIPE EXTENDING FROM DISTRIBUTION BOX SHALL BE SOLID, NON-PERFORATED PIPE.
15. PERFORATED DISPERSAL LINE SHALL HAVE TWO ROWS OF HOLES SPACED ONE HUNDRED-TWENTY (120) DEGREES APART AND SIXTY (60) DEGREES ON EITHER SIDE OF PIPE INVERT CENTERLINE.
16. INSTALL PERFORATED DISPERSAL LINE SUCH THAT THE HOLES ARE LOCATED AT APPROXIMATELY THE 4:00 AND 8:00 O'CLOCK POSITION.
17. A MINIMUM OF 12" OF EARTH FILL FROM PIPE INVERT SHALL COVER ALL BUILDING AND OWTS SEWER LINES.
18. MAINTAIN MINIMUM 18"' OF STRAIGHT PIPE ENTERING AND EXITING ALL TANKS AND DISTRIBUTION BOX.
19. WATERTIGHT PIPING LEAVING DISTRIBUTION BOX (MANIFOLD) SHALL BE LEVEL FOR FIRST 18" THEN SLOPED AT A MINIMUM ¼" PER FOOT UNTIL REACHING PERFORATED DISPERSAL LINE.
20. SEWER/OWTS PIPING SHALL BE LAID ON A FIRM BED THROUGHOUT ITS ENTIRE LENGTH, FREE OF ORGANIC MATERIALS, LARGE ANGULAR ROCKS OR OTHER MATERIAL THAT COULD NEGATIVELY IMPACT PIPING.
21. DISPERSAL TRENCH PERFORATED PIPING MUST BE INSTALLED LEVEL TO WITHIN 2" PER 100 FEET OF PIPING.
22. ALL CONVEYANCE, INLET AND OUTLET PIPING MUST BE PROPERLY SUPPORTED AND BEDDED.
23. CLEANOUTS SHALL BE PLACED ON THE BUILDING SEWER AT THE JUNCTION WITH THE BUILDING DRAIN, AT INTERVALS NOT TO EXCEED 100' IN STRAIGHT RUNS AND AT EVERY CHANGE IN ALIGNMENT OR GRADE IN EXCESS OF 22.5°.
24. EACH CLEANOUT SHALL BE INSTALLED SO THAT IT OPENS IN A DIRECTION OPPOSITE TO THE FLOW OF SEWAGE OR WASTE OR AT RIGHT ANGLES THERETO AND VERTICALLY ABOVE THE FLOW OF THE PIPE.
25. DUE TO THE MILDLY SLOPING TERRAIN IN THE PROPOSED DISPERSAL AREA, A DISTRIBUTION BOX WITH "SPEED LEVELERS" IS REQUIRED TO EVENLY DISTRIBUTE EFFLUENT.
26. DISTRIBUTION BOXES SHALL BE SET ON A LEVEL, COMPETENT BASE.
27. DISPERSAL FIELD TRENCHES AND PIPING SHALL BE ORIENTED PARALLEL TO THE NATURAL GROUND CONTOUR.
28. MAINTAIN MINIMUM 10' O.C. BETWEEN DISPERSAL TRENCHES.
29. THE BOTTOM OF THE DISPERSAL FIELD TRENCH SHALL BE LEVEL TO WITHIN A TOLERANCE OF 2" PER 100 FT.
30. ALL SMEARED OR COMPACTED ABSORPTION SURFACES (SIDEWALLS AND/OR TRENCH BOTTOM) SHALL BE SCARIFIED TO THE DEPTH OF THE SMEARING OR COMPACTION AND THE LOOSE MATERIAL REMOVED PRIOR TO PLACEMENT OF DRAIN ROCK.
31. DRAIN ROCK SHALL CONSIST OF ¾" TO 2 ½" DIAMETER, CLEAN, UNIFORMLY GRADED, NON-DETERIORATING RIVER ROCK, GRAVEL OR OTHER APPROVED HARD ROCK WITH THE PERCENT PASSING THE U.S. NO. 200 SEIVE NO GREATER THAN 0.5%.
32. NO DISPERSAL FIELD OR REPLACEMENT AREA SHALL BE COVERED BY ANY TYPE OF IMPERMEABLE SURFACE.
33. SUITABLE BACKFILL IS FREE FROM ORGANIC MATERIALS, DEBRIS, LARGE AND/OR ANGULAR ROCKS, OR SATURATED SOILS
34. ONCE AN OWTS IS INSTALLED. THE SOILS IN THE DISPERSAL FIELD AREA AND REPLACEMENT AREA SHALL REMAIN UNDISTURBED AND NOT SUBJECT TO VEHICULAR TRAFFIC OR CONFINED ANIMAL USE.
35. 10' MINIMUM SETBACK FROM LARGE TREES TO SEPTIC TANK AND DISPERSAL AREA.
36. 5' MINIMUM SETBACK FROM BUILDINGS TO SEPTIC TANK.
37. 25' MINIMUM SETBACK FROM SEPTIC TANK TO PROPERTY LINES.
38. 10' MINIMUM SETBACK FROM BUILDINGS TO DISPERSAL AREA.
39. 50' MINIMUM SETBACK FROM DISPERSAL AREA TO PROPERTY LINES.
40. OWNER/CONTRACTOR IS RESPONSIBLE FOR UNDERSTANDING ALL HUMBOLDT COUNTY INSPECTION REQUIREMENTS AND TIMELINES BEFORE, DURING AND AFTER CONSTRUCTION.
41. IT IS RECOMMENDED THAT THE INSTALLER REVIEW MATERIALS, EQUIPMENT, INSTALLATION AND INSPECTION REQUIREMENTS DETAILED IN THE MOST CURRENT HUMBOLDT COUNTY ONSITE WASTEWATER TREATMENT SYSTEM (OWTS) REGULATIONS AND TECHNICAL MANUAL.



OWTS MAY BE INSTALLED IN TWO PHASES. INITIAL PHASE MAY INCLUDE INSTALLATION OF NORTHERN MOST (DISTRIBUTION BOX-1), NORTHERN MOST SIX DISPERSAL TRENCHES AND (INTERIOR) 2,000-GALLON AND (COMPARTMENTED) 1,500-GALLON SEPTIC TANKS REFERRED TO AS (TANKS B & C, SEE SHEET C4-1). INITIAL PHASE (DISTRIBUTION BOX -1) WILL STUB OUT TO SOUTHERN (DISTRIBUTION BOX-2) & DISPERSAL TRENCHES.

FINAL (AT PROJECT BUILD OUT) WILL INCLUDE INSTALLATION OF SOUTHERN DISTRIBUTION BOX, SOUTHERN MOST SIX DISPERSAL TRENCHES AND TWO (EXTERIOR, OR "A" AND "D") 2,000-GALLON SEPTIC TANKS). SEE SHEET C4-1 FOR SEPTIC TANK CONFIGURATION & LABELING.

N

0 50 100 Feet

1" = 25' PRINTED 34" X 22"
1" = 50' PRINTED 17" X 11"

OUREVOLUTION ENGINEERING, INC.
1821 BUTTERMILK LANE
ARCATA, CA 95521
360.791.3259
ANDY@OUREVOLUTION.COM

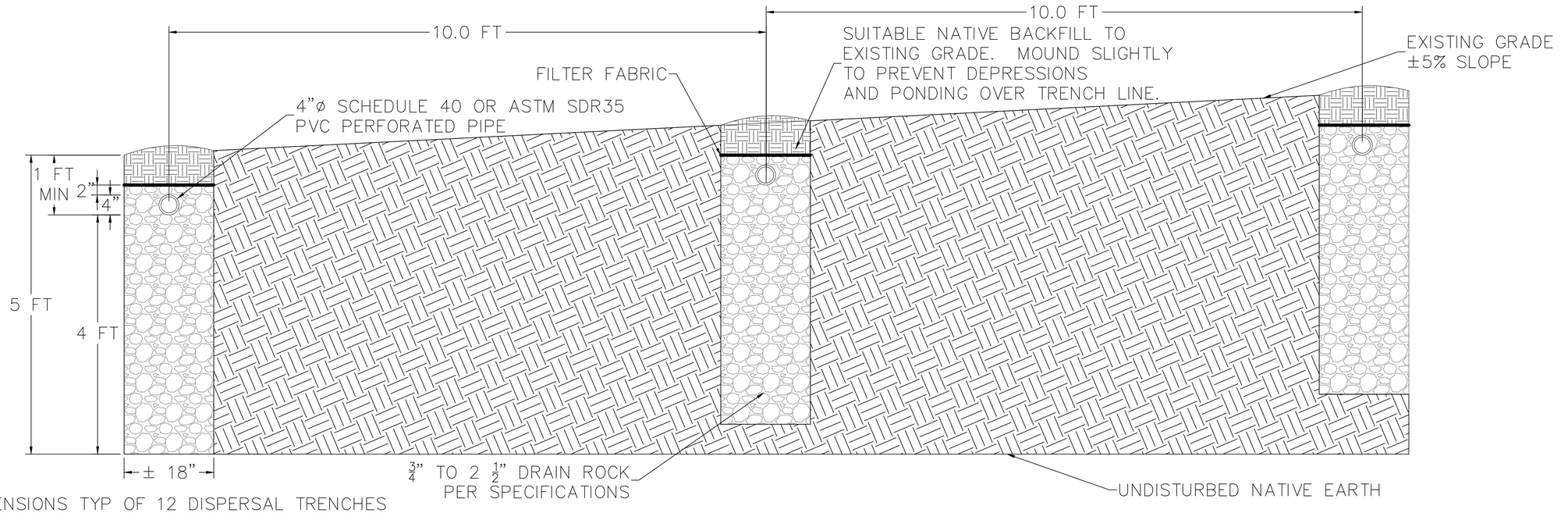
NO.	HISTORY / REVISION	BY	CHK	DATE
1	OE SUBMITTAL #1	ACS	GA	09/15/20

CISCO FARMS, INC.
APNS: 105–101–011, 104–232–005 & 104–191–001
1414 CHAMBERS ROAD, PETROLIA, CA 95558
ONSITE WASTEWATER TREATMENT SYSTEM

OWTS PARTIAL PLAN
GENERAL NOTES AND SPECIFICATIONS

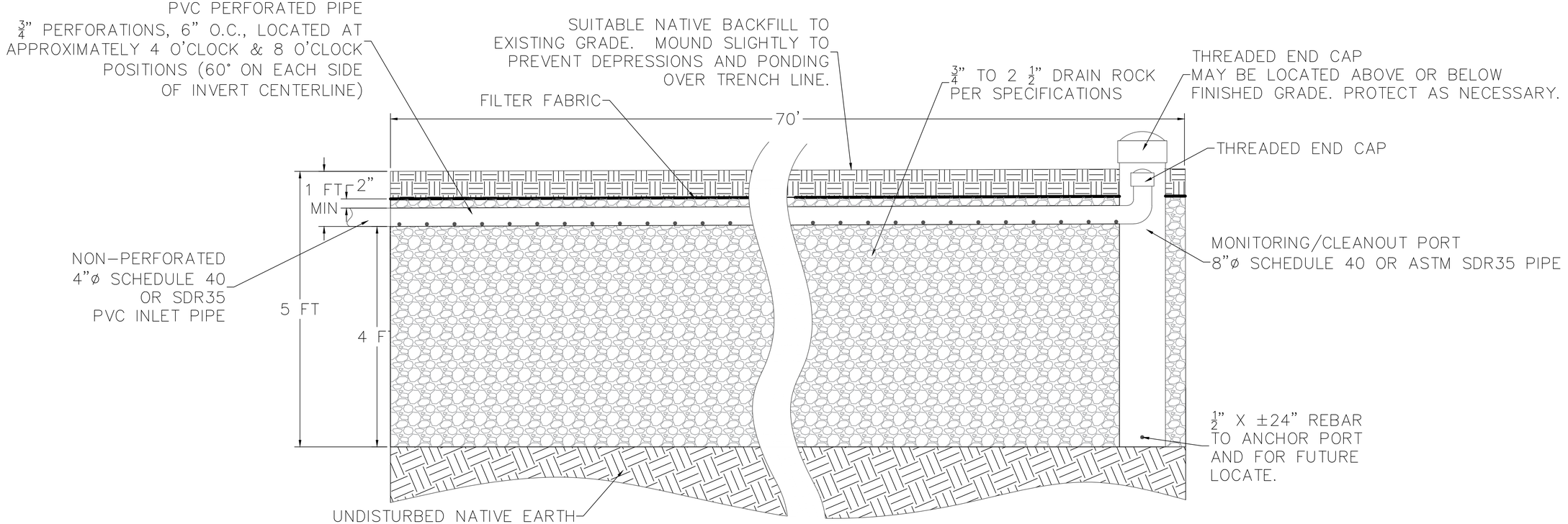
DRAWN	GSA
CHECK	ACS
APPROVED	ACS
DATE	10/26/2021
JOB NUMBER	CF–21

SHEET C2



DIMENSIONS TYP OF 12 DISPERSAL TRENCHES

C3-1 -TYPICAL LEACHFIELD CROSS SECTION



C3-2 -TYPICAL DISPERSAL TRENCH PROFILE

OUREVOLUTION ENGINEERING, INC.
1821 BUTTERMILK LANE
ARCATA, CA 95521
360.791.3259
ANDY@OUREVOLUTION.COM

NO.	HISTORY / REVISION	BY	CHK.	DATE

CISCO FARMS, INC.
APNS: 105-101-011, 104-232-005 & 104-191-001
1414 CHAMBERS ROAD, PETROLIA, CA 95558
ONSITE WASTEWATER TREATMENT SYSTEM

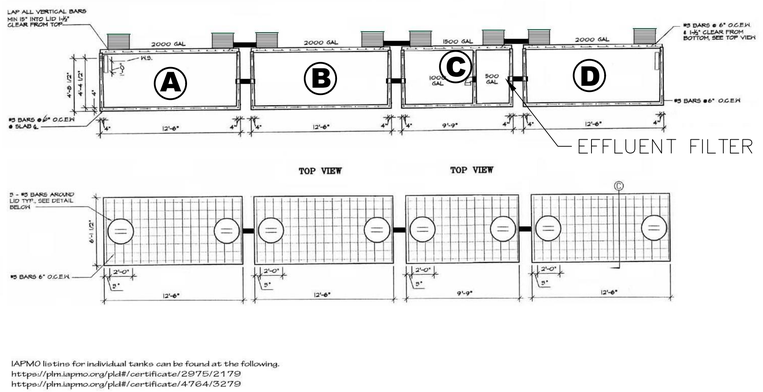
OWTS CONSTRUCTION DETAILS

DRAWN	GSA
CHECK	ACS
APPROVED	ACS
DATE	10/26/2021
JOB NUMBER	CF-21

SHEET
C3

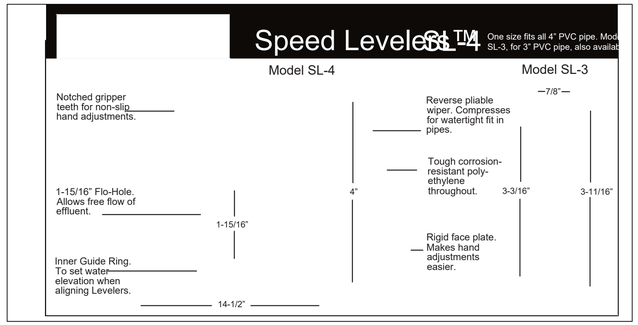
SELVAGE
CONCRETE PRODUCTS, INC.

7500 GALLONS TOTAL



IAPMO listins for individual tanks can be found at the following.
https://plm.iapmo.org/pld#/certificate/2975/2179
https://plm.iapmo.org/pld#/certificate/4764/3279

C4–1 TYPICAL 1,500 & 2,000–GAL IAPMO APPROVED SEPTIC TANK SYSTEM (SERIES)



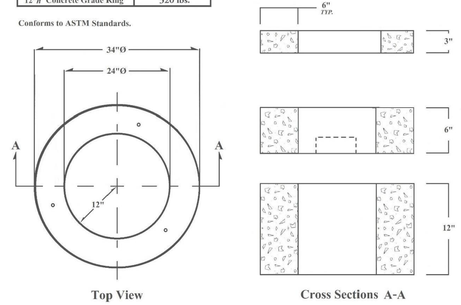
C4–3 TYPICAL SPEED LEVELER ASSEMBLY

SELVAGE
CONCRETE PRODUCTS, INC.

CONCRETE GRADE RINGS
24"id / 34"od

Available Sizes 24"id /34"od	Weight Approx.
3"/h Concrete Grade Ring	80 lbs.
6"/h Concrete Grade Ring	160 lbs.
12"/h Concrete Grade Ring	320 lbs.

Conforms to ASTM Standards.



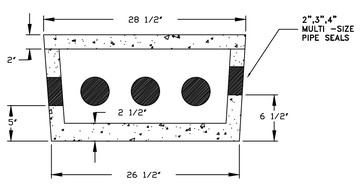
Top View
Cross Sections A-A

3309 Sebastopol Road
Santa Rosa, CA 95407
P (707) 542-2762
F (707) 542-3901

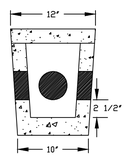
C4–5 TYPICAL SEPTIC TANK RISER RING

Date : 6/7/99	DWG # 8DB	FLEMINGTON PRECAST & SUPPLY, L.L.C.

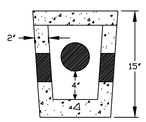
This Distribution Box Meets or Exceeds The Requirments of N.J.A.C. 7:9A



SIDES



OUTLET END

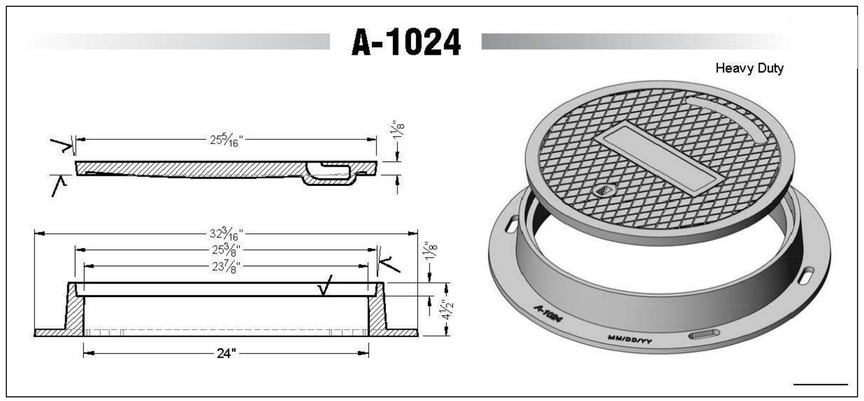


INLET END

SPECIFICATIONS	SEPTECH™ 8 HOLE DISTRIBUTION BOX (1 INLET/7 OUTLETS)	8DB

Minimum Concrete Strength – 4000 P.S.I. @ 28 Days
Reinforcement – 6"x6"x10 Ga. wire mesh in Lid
Secondary Reinforcement Synthetic Fibers Throughout
Design – Distribution Box to be As Manufactured By:
FLEMINGTON PRECAST & SUPPLY, L.L.C.
18 Allen Street, Flemington, NJ 08822–1120
Ph. (908) 782–3246 Fax (908) 782–1981

C4–2 TYPICAL DISTRIBUTION BOX



C4–4 TYPICAL SEPTIC TANK RISER ACCESS PORT (LIDDED COVER)

C4–6 TYPICAL SEPTIC TANK EFFLUENT FILTER

OUREVOLUTION ENGINEERING, INC.
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NO.	HISTORY / REVISION	BY	CHK.	DATE

CISCO FARMS, INC.
APNS: 105–101–011, 104–232–005 & 104–191–001
1414 CHAMBERS ROAD, PETROLIA, CA 95558
ONSITE WASTEWATER TREATMENT SYSTEM

OWTS TYPICAL COMPONENTS

DRAWN	GSA
CHECK	ACS
APPROVED	ACS
DATE	10/26/2021
JOB NUMBER	CF–21

SHEET
C4

Onsite Wastewater Treatment System - Design Basis	Commercial
General Description of Waste Stream	Commercial - Sanitary (Two toilets, one shower, three sinks)
Number of Employees per Day	34
Wastewater Generated Per Employee per Day (GPD)[A]	35
Total Wastewater Projected per Day (GPD)	1190
Factor of Safety for Peak Loading	2
Design Wastewater Flow (GPD)	2380
Design Septic Tank Size (Gallons)[B]	7140
Soil Type[C]	Sandy Loam
Soil Zone Category[C]	2
Zone 2 Soil Application Rate (Loamy Sand) (gpd/sf)[D]	0.363
Zone 2 Soil Percolation Rate (Loamy Sand) (mpi)[C]	30
Minimum Dispersal Area (Design Wastewater Flow/Soil Application Rate) (sf)	**6556**
OWTS Dispersal Field Type	**Gravity**
Dispersal Trench Depth (ft)	**5.0**
Disperal Trench Drain Rock Column Height (max) (ft)[E]	**4.0**
Infiltrative Area per Lineal Foot of Dispersal Trench (SF/ft)	**8**
Minimum Total Length of Dispersal Trenches Required (ft)	**819.56**
Total Design Length of Dispersal Trenches (ft)	**820**
Maximum Length of Each Disperal Trench (ft)[D]	**70**
Number of Dispersal Trenches	**12**
Design Length of Each Lateral of Dispersal Trench (ft)	**70**

A. Humboldt County Onsite Wastwater Treatement System (OWTS) Regulations and Technical Manual, Appendix C- Expected Daily Wastewater Flows (Factory)
B. OWTS Regulations and Technical Manual Section 2.2 "Other Applications"
C. Northcoast Laboratories LTD - Bulk Density Particle Size Analyses - Primary & Reserve Leachfields
D. Humboldt County (OWTS) Regulations and Technical Manual, Table 2 - Soil Application Rates
E. Humboldt County OWTS Regulations and Technical Manual, Section 2.3.4

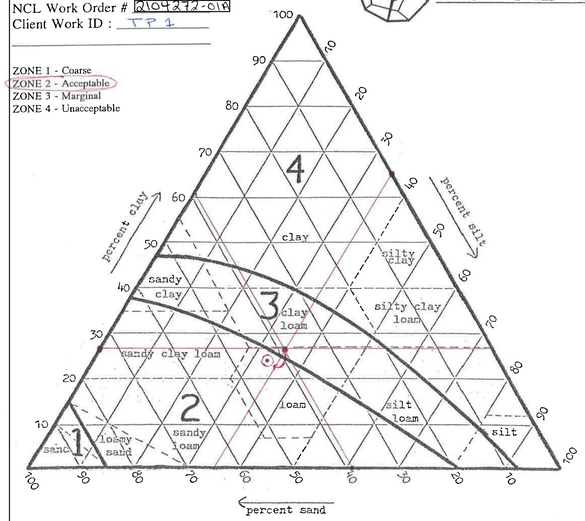
TABLE 1. OWTS DESIGN CALCULATIONS

SOIL PERCOLATION SUITABILITY CHART

NORTH COAST LABORATORIES LTD.

NCL Work Order # 2104272-01A
Client Work ID : TP 1

ZONE 1 - Coarse
ZONE 2 - Acceptable
ZONE 3 - Marginal
ZONE 4 - Unacceptable



1. Plot texture on triangle based on percent sand, silt, and clay as determined by hydrometer analysis.
2. Adjust for coarse fragments by moving the plotted point in the sand direction an additional 2% for each 10% (by volume) of fragments greater than 2mm in diameter.
3. Adjust for compactness of soil by moving the plotted point in the clay direction an additonal 15% for soils having a bulk density greater than 1.7 gm/cc.
4. For soils falling in sand, loamy sand or sandy loam classification bulk density analysis will generally not affect suitability and analysis will not be necessary.

RESULTS

39 % Sand 26 % Clay 35 % Silt 21 % Coarse Fragments Bulk Density: N/A g/cc

5680 West End Road • Arcata California 95521 • 707-822-4649 • FAX 707-822-6831

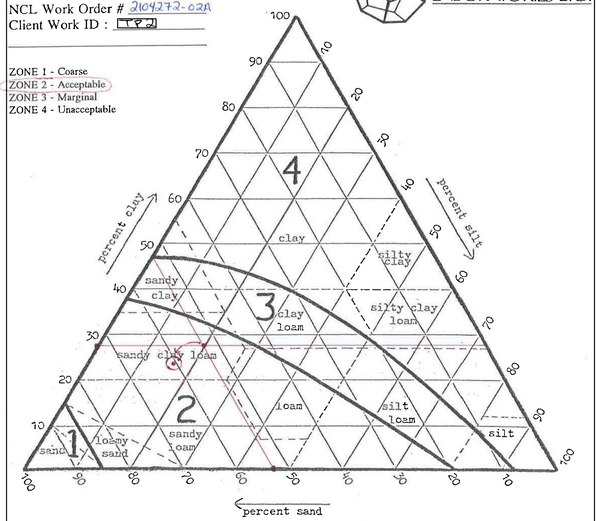
FIGURE 1 – TP1 – (PRIMARY LEACHFIELD) SOIL ANLYSES BY NORTH COAST LABORATORIES, LTD.

SOIL PERCOLATION SUITABILITY CHART

NORTH COAST LABORATORIES LTD.

NCL Work Order # 2104272-02A
Client Work ID : TP2

ZONE 1 - Coarse
ZONE 2 - Acceptable
ZONE 3 - Marginal
ZONE 4 - Unacceptable



1. Plot texture on triangle based on percent sand, silt, and clay as determined by hydrometer analysis.
2. Adjust for coarse fragments by moving the plotted point in the sand direction an additional 2% for each 10% (by volume) of fragments greater than 2mm in diameter.
3. Adjust for compactness of soil by moving the plotted point in the clay direction an additonal 15% for soils having a bulk density greater than 1.7 gm/cc.
4. For soils falling in sand, loamy sand or sandy loam classification bulk density analysis will generally not affect suitability and analysis will not be necessary.

RESULTS

53 % Sand 27 % Clay 20 % Silt 32 % Coarse Fragments Bulk Density: N/A g/cc

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FIGURE 2 – TP2 – (RESERVE LEACHFIELD) SOIL ANLYSES BY NORTH COAST LABORATORIES, LTD.

DEPTH FROM NATIVE GROUND SURFACE	MATERIAL TYPE - FIELD NOTE
0-4"	ORGANIC MATERIAL - ROOTS, DECAYING ORGANIC MATERIAL
4"-10'	DARK BROWN SANDY LOAM
No indication of groundwater to depth of 10'	

FIGURE 3. TP-1 (PRIMARY LEACHFIELD) SOILS LOG BY OUREVOLUTION.

DEPTH FROM NATIVE GROUND SURFACE	MATERIAL TYPE - FIELD NOTE
0-4"	ORGANIC MATERIAL - ROOTS, DECAYING ORGANIC MATERIAL
4"-10'	DARK BROWN SANDY LOAM
No indication of groundwater to depth of 10'	

FIGURE 4. TP-2 (RESERVE LEACHFIELD) SOILS LOG BY OUREVOLUTION.

OUREVOLUTION ENGINEERING, INC.
1821 BUTTERMILK LANE
ARCATA, CA 95521
360.791.3259
ANDY@OUREVOLUTION.COM

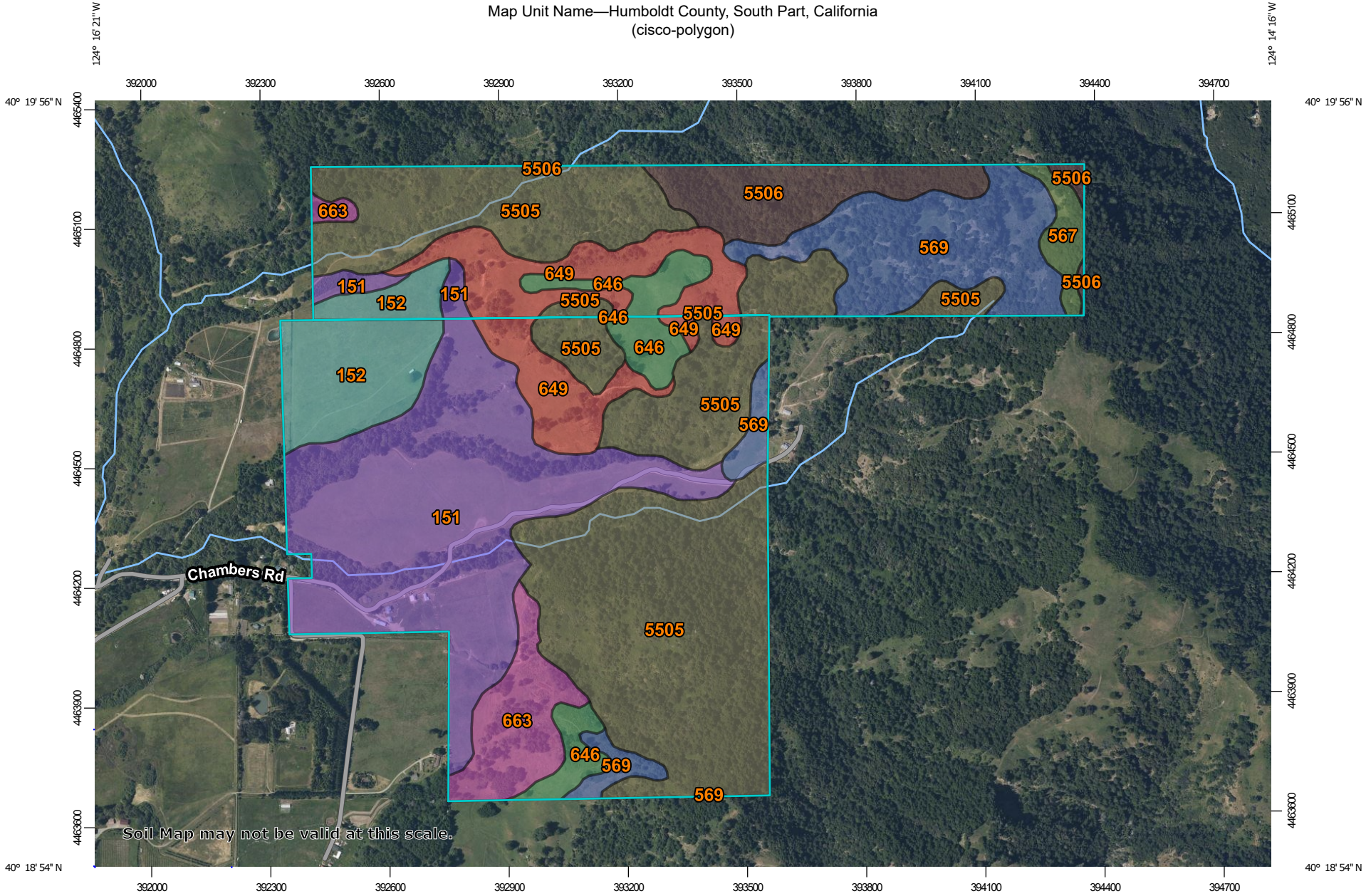
NO.	HISTORY / REVISION	BY	CHK.	DATE

CISCO FARMS, INC.
APNS: 105-101-011, 104-232-005 & 104-191-001
1414 CHAMBERS ROAD, PETROLIA, CA 95558
ONSITE WASTEWATER TREATMENT SYSTEM

OWTS SOILS ANALYSES & DESIGN CALCULATIONS

DRAWN	GSA
CHECK	ACS
APPROVED	ACS
DATE	10/26/2021
JOB NUMBER	CF-21
SHEET	C5

Map Unit Name—Humboldt County, South Part, California
(cisco-polygon)



Map Scale: 1:13,500 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 200 400 800 1200

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Benbow, 2 to 9 percent slopes
- Crazycoyote-Sproulish-Canoecreek complex, 30 to 50 percent slopes
- Crazycoyote-Sproulish-Canoecreek complex, 50 to 75 percent slopes
- Crazycoyote-Sproulish-Caperidge complex, 15 to 50 percent slopes
- Crazycoyote-Windynip-Caperidge complex, 15 to 50 percent slopes
- Parkland-Garberville complex, 2 to 9 percent slopes
- Windynip-Wirefence-Devilshole complex, 30 to 50 percent slopes
- Wirefence-Windynip-Devilshole complex, 5 to 30 percent slopes
- Yorknorth-Windynip complex, 15 to 50 percent slopes
- Not rated or not available

Soil Rating Lines

- Benbow, 2 to 9 percent slopes
- Crazycoyote-Sproulish-Canoecreek complex, 30 to 50 percent slopes
- Crazycoyote-Sproulish-Canoecreek complex, 50 to 75 percent slopes
- Crazycoyote-Sproulish-Caperidge complex, 15 to 50 percent slopes
- Crazycoyote-Windynip-Caperidge complex, 15 to 50 percent slopes
- Parkland-Garberville complex, 2 to 9 percent slopes
- Windynip-Wirefence-Devilshole complex, 30 to 50 percent slopes
- Wirefence-Windynip-Devilshole complex, 5 to 30 percent slopes
- Yorknorth-Windynip complex, 15 to 50 percent slopes
- Not rated or not available

Soil Rating Points

- Benbow, 2 to 9 percent slopes
- Crazycoyote-Sproulish-Canoecreek complex, 30 to 50 percent slopes
- Crazycoyote-Sproulish-Canoecreek complex, 50 to 75 percent slopes
- Crazycoyote-Sproulish-Caperidge complex, 15 to 50 percent slopes
- Crazycoyote-Windynip-Caperidge complex, 15 to 50 percent slopes
- Parkland-Garberville complex, 2 to 9 percent slopes
- Windynip-Wirefence-Devilshole complex, 30 to 50 percent slopes
- Wirefence-Windynip-Devilshole complex, 5 to 30 percent slopes
- Yorknorth-Windynip complex, 15 to 50 percent slopes
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 10, Sep 6, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 8, 2019—Jun 21, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Name

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
151	Parkland-Garberville complex, 2 to 9 percent slopes	Parkland-Garberville complex, 2 to 9 percent slopes	114.9	22.8%
152	Benbow, 2 to 9 percent slopes	Benbow, 2 to 9 percent slopes	32.9	6.5%
567	Crazycoyote-Sproulish-Caperidge complex, 15 to 50 percent slopes	Crazycoyote-Sproulish-Caperidge complex, 15 to 50 percent slopes	6.5	1.3%
569	Crazycoyote-Windynip-Caperidge complex, 15 to 50 percent slopes	Crazycoyote-Windynip-Caperidge complex, 15 to 50 percent slopes	51.3	10.2%
646	Wirefence-Windynip-Devilshole complex, 5 to 30 percent slopes	Wirefence-Windynip-Devilshole complex, 5 to 30 percent slopes	18.9	3.8%
649	Windynip-Wirefence-Devilshole complex, 30 to 50 percent slopes	Windynip-Wirefence-Devilshole complex, 30 to 50 percent slopes	42.5	8.4%
663	Yorknorth-Windynip complex, 15 to 50 percent slopes	Yorknorth-Windynip complex, 15 to 50 percent slopes	22.4	4.5%
5505	Crazycoyote-Sproulish-Canoecreek complex, 30 to 50 percent slopes	Crazycoyote-Sproulish-Canoecreek complex, 30 to 50 percent slopes	187.7	37.2%
5506	Crazycoyote-Sproulish-Canoecreek complex, 50 to 75 percent slopes	Crazycoyote-Sproulish-Canoecreek complex, 50 to 75 percent slopes	26.8	5.3%
Totals for Area of Interest			**504.0**	**100.0%**

Description

A soil map unit is a collection of soil areas or nonsoil areas (miscellaneous areas) delineated in a soil survey. Each map unit is given a name that uniquely identifies the unit in a particular soil survey area.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

CENCI CONSULTING
PO Box 148
Petrolia, CA 95558

Attn: Michael Holtermann
County of Humboldt
Planning & Building Department
Cannabis Services Division
3015 H Street
Eureka, CA. 95501

RE: Record No. PLN-2021-17384, APN 105-011-000 et al.
Cisco Farms Inc.
Agricultural activities and relation to Williamson Act

December 28, 2021

Dear Michael,

This letter describes background information and current grazing activities on the property that is known as the "Walker Preserve" (Preserve Nos. 79-6 and 84-20) that consists of APNs 104-191-001, 104-221-017, 104-222-017, 104-232-003, 104-232-004,104-232-005, and 105-101-011.

The property has been in the Williamson Act program since 1979 when it was established as the approximately 834-acre Lowell Walker Class B Agricultural Preserve (Preserve No. 79-6, Resolution No. 79-19). In 1984, 200 acres were added to the Preserve (Preserve No. 84-2, (Resolution No. 84-20), bringing the area to its current 1034-acres. In March of 2020, the property was transferred in its entirety from Richard Cogswell to Karl and Esther Benemann / Benemann Family Revocable Trust.

The property has been used for cattle grazing continuously since its establishment as an agricultural preserve and the new owners are continuing this activity. Current (2022) activities also include a grazing lease for a dairy operation, owned by Mr. John Vevoda out of Ferndale, CA. Grazing operations are focused on heifers (young cows that do not yet produce milk) and are scheduled from January – July. The number of heifers at any one time on the property will vary throughout the season as the amount of available forage increases but 40-120 animals is anticipated – enough to graze the property sustainably and properly in accordance with grazing best management practices.

The grazing of beef cattle and dairy cows is consistent with the requirements of the county's Williamson Act guidelines for a Class B preserve. The property remains in compliance with all aspects of the Williamson Act guidelines and the resolution establishing the preserve with uniform rules, including compatible uses.

It should be noted that only APNs 105-101-011, 104-232-005, and 104-191-001 pertain to the legal lot where cannabis will be cultivated. This lot is a total 504 acres. The project will occupy a total area of ~22 acres, including all cannabis cultivation areas, nursery greenhouses, associated buildings, employee housing, roads and parking areas, and water storage infrastructure. This is approximately 4% of lot acreage and 2% of total preserve acreage. The remainder of the preserve acreage (98%) will remain available for grazing operations.

If you have any questions regarding information included herein or need additional information, please do not hesitate to call or email me. Thank you for all your work on this Project and your dedication to legal cannabis in Humboldt County.

Sincerely,

Kate J. Cenci

Kate Cenci
707-616-7207
cenciconsulting@gmail.com

Cisco Farms, Inc. Cannabis Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Cisco Farms, Inc. Cannabis Project

Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	285.56	1000sqft	6.56	285,560.00	0
General Light Industry	22.20	1000sqft	0.51	22,200.00	0
Mobile Home Park	1.07	Dwelling Unit	0.13	1,284.00	3

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2023
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - September 1st, 2022 Construction Start Date

Land Use - Assumed "Industrial - Unrefrigerated Warehouse - No Rail" for 6.56 acres (285,560 SF) of cannabis cultivation/nursery activities (inc. 3 acres full-sun outdoor, 1 acre of mixed-light, 1 acre of light-deprivation, and 1.56 acres of nursery)
Assumed "Industrial - General Light Industry" for 3,000 SF of commercial processing & 19,200 SF of ancillary drying (total of 22,200 SF)
Assumed "Residential - Mobile Home Park" for farmworker housing. Adjusted unit amount to match 1,280 SF.

Construction Phase - Construction is proposed to be staggered over a 5-year period. To take a conservative approach and calculate the maximum amount of emissions to be emitted at one time, construction events were consolidated for the purpose of this Air Quality Monitoring.
Demolition, Site Preparation, Paving, & Architectural Coating removed.

Grading - Assumed 6 acre for grading for pond & cultivation activities

Trips and VMT - Assumptions made per discussion with applicant

On-road Fugitive Dust - Approximately 95% paved roads

Road Dust - Reduced percent paved from 100 to 95.

Cisco Farms, Inc. Cannabis Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Woodstoves - No woodstoves or fireplaces proposed.

Area Coating - No architectural coatings proposed. Buildings are manufactured buildings assembled onsite or brought to site.

Water And Wastewater - Site served by onsite septic system.
Water use values from the Cultivation and Operations Plan (Cenci Consulting, 2021)

Solid Waste - General Light Industry is processing/drying - all waste would be composted onsite
Residential & Cultivation waste values sourced from Cultivation and Operations Plan (Cenci Consulting, 2021)

Operational Off-Road Equipment -

Stationary Sources - Emergency Generators and Fire Pumps - Assumed (2) 10kW emergency generators
Assumed 7 days per year of emergency usage, 24 hours per day.

Land Use Change - Calculation based on replacing grassland with permanently disturbed area from the rainwater catchment pond, farmworker housing, processing building, and drying structures (total of 1.6 acres).

Vehicle Trips - Assumed 55 trips per day (maximum) for General Light Industry Land Use Type (employees/deliveries associated with cultivation & nursery)
Assumed no trips for onsite farmworker housing
Assumed 5 trips per day for processing/drying activities.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	153880	0
tblAreaCoating	Area_Nonresidential_Interior	461640	0
tblAreaCoating	Area_Residential_Exterior	867	0
tblAreaCoating	Area_Residential_Interior	2600	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	230.00	100.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	9/27/2023	1/8/2023
tblConstructionPhase	PhaseEndDate	11/9/2022	9/30/2022
tblConstructionPhase	PhaseStartDate	11/10/2022	10/1/2022
tblConstructionPhase	PhaseStartDate	10/13/2022	9/1/2022
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00

Cisco Farms, Inc. Cannabis Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	0.59	0.00
tblFireplaces	NumberNoFireplace	0.11	0.00
tblFireplaces	NumberWood	0.37	0.00
tblGrading	AcresOfGrading	30.00	6.00
tblOnRoadDust	HaulingPercentPave	100.00	95.00
tblOnRoadDust	HaulingPercentPave	100.00	95.00
tblOnRoadDust	VendorPercentPave	100.00	95.00
tblOnRoadDust	VendorPercentPave	100.00	95.00
tblOnRoadDust	WorkerPercentPave	100.00	95.00
tblOnRoadDust	WorkerPercentPave	100.00	95.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	100	95
tblSolidWaste	SolidWasteGenerationRate	27.53	0.00
tblSolidWaste	SolidWasteGenerationRate	0.49	0.08
tblSolidWaste	SolidWasteGenerationRate	268.43	0.10
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	CO_EF	4.93	4.93
tblStationaryGeneratorsPumpsEF	NOX_EF	5.32	5.32
tblStationaryGeneratorsPumpsEF	PM10_EF	0.60	0.60
tblStationaryGeneratorsPumpsEF	PM2_5_EF	0.60	0.60
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	18.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	24.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	168.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	51.00	0.00

Cisco Farms, Inc. Cannabis Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	WorkerTripNumber	130.00	15.00
tblVehicleTrips	ST_TR	1.99	0.23
tblVehicleTrips	ST_TR	4.61	0.00
tblVehicleTrips	ST_TR	1.74	0.19
tblVehicleTrips	SU_TR	5.00	0.23
tblVehicleTrips	SU_TR	4.24	0.00
tblVehicleTrips	SU_TR	1.74	0.19
tblVehicleTrips	WD_TR	4.96	0.23
tblVehicleTrips	WD_TR	5.00	0.00
tblVehicleTrips	WD_TR	1.74	0.19
tblWater	AerobicPercent	87.46	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	5,133,750.00	10,429.00
tblWater	IndoorWaterUseRate	69,714.81	101,280.00
tblWater	IndoorWaterUseRate	66,035,750.00	0.00
tblWater	OutdoorWaterUseRate	43,950.64	0.00
tblWater	OutdoorWaterUseRate	0.00	2,154,095.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00
tblWoodstoves	NumberCatalytic	0.05	0.00
tblWoodstoves	NumberNoncatalytic	0.05	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

Cisco Farms, Inc. Cannabis Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1146	1.0368	1.0305	1.7900e-003	0.9180	0.0514	0.9694	0.1340	0.0481	0.1821	0.0000	155.2329	155.2329	0.0385	3.8000e-004	156.3111
2023	6.7100e-003	0.0579	0.0679	1.1000e-004	0.0540	2.8000e-003	0.0568	5.5100e-003	2.6400e-003	8.1400e-003	0.0000	9.8813	9.8813	2.2300e-003	2.0000e-005	9.9437
Maximum	**0.1146**	**1.0368**	**1.0305**	**1.7900e-003**	**0.9180**	**0.0514**	**0.9694**	**0.1340**	**0.0481**	**0.1821**	**0.0000**	**155.2329**	**155.2329**	**0.0385**	**3.8000e-004**	**156.3111**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1146	1.0368	1.0305	1.7900e-003	0.9180	0.0514	0.9694	0.1340	0.0481	0.1821	0.0000	155.2327	155.2327	0.0385	3.8000e-004	156.3109
2023	6.7100e-003	0.0579	0.0679	1.1000e-004	0.0540	2.8000e-003	0.0568	5.5100e-003	2.6400e-003	8.1400e-003	0.0000	9.8813	9.8813	2.2300e-003	2.0000e-005	9.9437
Maximum	**0.1146**	**1.0368**	**1.0305**	**1.7900e-003**	**0.9180**	**0.0514**	**0.9694**	**0.1340**	**0.0481**	**0.1821**	**0.0000**	**155.2327**	**155.2327**	**0.0385**	**3.8000e-004**	**156.3109**

Cisco Farms, Inc. Cannabis Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-1-2022**	**11-30-2022**	0.8802	0.8802
2	**12-1-2022**	**2-28-2023**	0.3366	0.3366
		Highest	0.8802	0.8802

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2075	1.2000e-004	0.0108	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0185	0.0185	3.0000e-005	0.0000	0.0192
Energy	4.4000e-004	3.9900e-003	3.2700e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	13.5354	13.5354	1.5700e-003	2.6000e-004	13.6520
Mobile	0.0535	0.1059	0.5223	9.0000e-004	4.3468	1.1200e-003	4.3479	0.4464	1.0600e-003	0.4474	0.0000	83.8652	83.8652	5.9600e-003	4.9500e-003	85.4892
Stationary	4.9600e-003	0.0259	0.0240	2.0000e-005		2.9100e-003	2.9100e-003		2.9100e-003	2.9100e-003	0.0000	2.3031	2.3031	3.2000e-004	0.0000	2.3111
Waste						0.0000	0.0000		0.0000	0.0000	0.0365	0.0000	0.0365	2.1600e-003	0.0000	0.0905
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.7535	0.7535	0.0255	1.0000e-004	1.4209
Total	**1.2663**	**0.1359**	**0.5603**	**9.4000e-004**	**4.3468**	**4.3800e-003**	**4.3512**	**0.4464**	**4.3200e-003**	**0.4507**	**0.0365**	**100.4755**	**100.5121**	**0.0355**	**5.3100e-003**	**102.9829**

Cisco Farms, Inc. Cannabis Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2075	1.2000e-004	0.0108	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0185	0.0185	3.0000e-005	0.0000	0.0192
Energy	4.4000e-004	3.9900e-003	3.2700e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	13.5354	13.5354	1.5700e-003	2.6000e-004	13.6520
Mobile	0.0535	0.1059	0.5223	9.0000e-004	4.3468	1.1200e-003	4.3479	0.4464	1.0600e-003	0.4474	0.0000	83.8652	83.8652	5.9600e-003	4.9500e-003	85.4892
Stationary	4.9600e-003	0.0259	0.0240	2.0000e-005		2.9100e-003	2.9100e-003		2.9100e-003	2.9100e-003	0.0000	2.3031	2.3031	3.2000e-004	0.0000	2.3111
Waste						0.0000	0.0000		0.0000	0.0000	0.0365	0.0000	0.0365	2.1600e-003	0.0000	0.0905
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.7535	0.7535	0.0255	1.0000e-004	1.4209
Total	**1.2663**	**0.1359**	**0.5603**	**9.4000e-004**	**4.3468**	**4.3800e-003**	**4.3512**	**0.4464**	**4.3200e-003**	**0.4507**	**0.0365**	**100.4755**	**100.5121**	**0.0355**	**5.3100e-003**	**102.9829**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.3 Vegetation

Vegetation

	CO2e
Category	MT
Vegetation Land Change	-6.8960
Total	**-6.8960**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	9/1/2022	9/30/2022	7	30	
2	Building Construction	Building Construction	10/1/2022	1/8/2023	7	100	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 6

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	6	15.00	0.00	2.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	15.00	0.00	2.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0935	0.0000	0.0935	0.0500	0.0000	0.0500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0292	0.3128	0.2291	4.4000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	39.0822	39.0822	0.0126	0.0000	39.3982
Total	**0.0292**	**0.3128**	**0.2291**	**4.4000e-004**	**0.0935**	**0.0141**	**0.1076**	**0.0500**	**0.0130**	**0.0630**	**0.0000**	**39.0822**	**39.0822**	**0.0126**	**0.0000**	**39.3982**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	2.0000e-004	3.0000e-005	0.0000	1.0700e-003	0.0000	1.0700e-003	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0612	0.0612	0.0000	1.0000e-005	0.0641
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6800e-003	1.2900e-003	0.0120	3.0000e-005	0.2022	2.0000e-005	0.2023	0.0206	2.0000e-005	0.0206	0.0000	2.3212	2.3212	9.0000e-005	9.0000e-005	2.3503
Total	**1.6800e-003**	**1.4900e-003**	**0.0120**	**3.0000e-005**	**0.2033**	**2.0000e-005**	**0.2033**	**0.0207**	**2.0000e-005**	**0.0207**	**0.0000**	**2.3824**	**2.3824**	**9.0000e-005**	**1.0000e-004**	**2.4144**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0935	0.0000	0.0935	0.0500	0.0000	0.0500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0292	0.3128	0.2291	4.4000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	39.0821	39.0821	0.0126	0.0000	39.3981
Total	**0.0292**	**0.3128**	**0.2291**	**4.4000e-004**	**0.0935**	**0.0141**	**0.1076**	**0.0500**	**0.0130**	**0.0630**	**0.0000**	**39.0821**	**39.0821**	**0.0126**	**0.0000**	**39.3981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	2.0000e-004	3.0000e-005	0.0000	1.0700e-003	0.0000	1.0700e-003	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0612	0.0612	0.0000	1.0000e-005	0.0641
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6800e-003	1.2900e-003	0.0120	3.0000e-005	0.2022	2.0000e-005	0.2023	0.0206	2.0000e-005	0.0206	0.0000	2.3212	2.3212	9.0000e-005	9.0000e-005	2.3503
Total	**1.6800e-003**	**1.4900e-003**	**0.0120**	**3.0000e-005**	**0.2033**	**2.0000e-005**	**0.2033**	**0.0207**	**2.0000e-005**	**0.0207**	**0.0000**	**2.3824**	**2.3824**	**9.0000e-005**	**1.0000e-004**	**2.4144**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0785	0.7183	0.7527	1.2400e-003		0.0372	0.0372		0.0350	0.0350	0.0000	106.5936	106.5936	0.0255	0.0000	107.2320
Total	**0.0785**	**0.7183**	**0.7527**	**1.2400e-003**		**0.0372**	**0.0372**		**0.0350**	**0.0350**	**0.0000**	**106.5936**	**106.5936**	**0.0255**	**0.0000**	**107.2320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.8000e-004	3.0000e-005	0.0000	9.9000e-004	0.0000	9.9000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0563	0.0563	0.0000	1.0000e-005	0.0590
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1500e-003	3.9600e-003	0.0367	8.0000e-005	0.6202	6.0000e-005	0.6203	0.0632	5.0000e-005	0.0633	0.0000	7.1183	7.1183	2.8000e-004	2.8000e-004	7.2075
Total	**5.1500e-003**	**4.1400e-003**	**0.0367**	**8.0000e-005**	**0.6212**	**6.0000e-005**	**0.6212**	**0.0633**	**5.0000e-005**	**0.0634**	**0.0000**	**7.1747**	**7.1747**	**2.8000e-004**	**2.9000e-004**	**7.2665**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0785	0.7183	0.7527	1.2400e-003		0.0372	0.0372		0.0350	0.0350	0.0000	106.5935	106.5935	0.0255	0.0000	107.2319
Total	**0.0785**	**0.7183**	**0.7527**	**1.2400e-003**		**0.0372**	**0.0372**		**0.0350**	**0.0350**	**0.0000**	**106.5935**	**106.5935**	**0.0255**	**0.0000**	**107.2319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.8000e-004	3.0000e-005	0.0000	9.9000e-004	0.0000	9.9000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0563	0.0563	0.0000	1.0000e-005	0.0590
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1500e-003	3.9600e-003	0.0367	8.0000e-005	0.6202	6.0000e-005	0.6203	0.0632	5.0000e-005	0.0633	0.0000	7.1183	7.1183	2.8000e-004	2.8000e-004	7.2075
Total	**5.1500e-003**	**4.1400e-003**	**0.0367**	**8.0000e-005**	**0.6212**	**6.0000e-005**	**0.6212**	**0.0633**	**5.0000e-005**	**0.0634**	**0.0000**	**7.1747**	**7.1747**	**2.8000e-004**	**2.9000e-004**	**7.2665**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.2900e-003	0.0575	0.0650	1.1000e-004		2.8000e-003	2.8000e-003		2.6300e-003	2.6300e-003	0.0000	9.2722	9.2722	2.2100e-003	0.0000	9.3273
Total	**6.2900e-003**	**0.0575**	**0.0650**	**1.1000e-004**		**2.8000e-003**	**2.8000e-003**		**2.6300e-003**	**2.6300e-003**	**0.0000**	**9.2722**	**9.2722**	**2.2100e-003**	**0.0000**	**9.3273**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.0000e-005	0.0000	0.0000	9.0000e-005	0.0000	9.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	4.7200e-003	4.7200e-003	0.0000	0.0000	4.9500e-003
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	3.0000e-004	2.9000e-003	1.0000e-005	0.0539	0.0000	0.0539	5.5000e-003	0.0000	5.5000e-003	0.0000	0.6044	0.6044	2.0000e-005	2.0000e-005	0.6115
Total	**4.2000e-004**	**3.1000e-004**	**2.9000e-003**	**1.0000e-005**	**0.0540**	**0.0000**	**0.0540**	**5.5100e-003**	**0.0000**	**5.5100e-003**	**0.0000**	**0.6091**	**0.6091**	**2.0000e-005**	**2.0000e-005**	**0.6164**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.2900e-003	0.0575	0.0650	1.1000e-004		2.8000e-003	2.8000e-003		2.6300e-003	2.6300e-003	0.0000	9.2722	9.2722	2.2100e-003	0.0000	9.3273
Total	**6.2900e-003**	**0.0575**	**0.0650**	**1.1000e-004**		**2.8000e-003**	**2.8000e-003**		**2.6300e-003**	**2.6300e-003**	**0.0000**	**9.2722**	**9.2722**	**2.2100e-003**	**0.0000**	**9.3273**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.0000e-005	0.0000	0.0000	9.0000e-005	0.0000	9.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	4.7200e-003	4.7200e-003	0.0000	0.0000	4.9500e-003
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	3.0000e-004	2.9000e-003	1.0000e-005	0.0539	0.0000	0.0539	5.5000e-003	0.0000	5.5000e-003	0.0000	0.6044	0.6044	2.0000e-005	2.0000e-005	0.6115
Total	**4.2000e-004**	**3.1000e-004**	**2.9000e-003**	**1.0000e-005**	**0.0540**	**0.0000**	**0.0540**	**5.5100e-003**	**0.0000**	**5.5100e-003**	**0.0000**	**0.6091**	**0.6091**	**2.0000e-005**	**2.0000e-005**	**0.6164**

4.0 Operational Detail - Mobile

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0535	0.1059	0.5223	9.0000e-004	4.3468	1.1200e-003	4.3479	0.4464	1.0600e-003	0.4474	0.0000	83.8652	83.8652	5.9600e-003	4.9500e-003	85.4892
Unmitigated	0.0535	0.1059	0.5223	9.0000e-004	4.3468	1.1200e-003	4.3479	0.4464	1.0600e-003	0.4474	0.0000	83.8652	83.8652	5.9600e-003	4.9500e-003	85.4892

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	5.11	5.11	5.11	19,727	19,727
Mobile Home Park	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	54.26	54.26	54.26	209,618	209,618
Total	59.36	59.36	59.36	229,345	229,345

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Mobile Home Park	16.80	7.10	7.90	42.30	19.60	38.10	86	11	3
Unrefrigerated Warehouse-No	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.443629	0.069650	0.207187	0.154075	0.057336	0.011288	0.006778	0.008856	0.000975	0.000221	0.034425	0.001490	0.004089
Mobile Home Park	0.443629	0.069650	0.207187	0.154075	0.057336	0.011288	0.006778	0.008856	0.000975	0.000221	0.034425	0.001490	0.004089
Unrefrigerated Warehouse-No Rail	0.443629	0.069650	0.207187	0.154075	0.057336	0.011288	0.006778	0.008856	0.000975	0.000221	0.034425	0.001490	0.004089

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	9.1818	9.1818	1.4900e-003	1.8000e-004	9.2726
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	9.1818	9.1818	1.4900e-003	1.8000e-004	9.2726
NaturalGas Mitigated	4.4000e-004	3.9900e-003	3.2700e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	4.3536	4.3536	8.0000e-005	8.0000e-005	4.3794
NaturalGas Unmitigated	4.4000e-004	3.9900e-003	3.2700e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	4.3536	4.3536	8.0000e-005	8.0000e-005	4.3794

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	77256	4.2000e-004	3.7900e-003	3.1800e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.1227	4.1227	8.0000e-005	8.0000e-005	4.1472
Mobile Home Park	4326.35	2.0000e-005	2.0000e-004	8.0000e-005	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2309	0.2309	0.0000	0.0000	0.2322
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.4000e-004**	**3.9900e-003**	**3.2600e-003**	**2.0000e-005**		**3.1000e-004**	**3.1000e-004**		**3.1000e-004**	**3.1000e-004**	**0.0000**	**4.3535**	**4.3535**	**8.0000e-005**	**8.0000e-005**	**4.3794**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	77256	4.2000e-004	3.7900e-003	3.1800e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.1227	4.1227	8.0000e-005	8.0000e-005	4.1472
Mobile Home Park	4326.35	2.0000e-005	2.0000e-004	8.0000e-005	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2309	0.2309	0.0000	0.0000	0.2322
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.4000e-004**	**3.9900e-003**	**3.2600e-003**	**2.0000e-005**		**3.1000e-004**	**3.1000e-004**		**3.1000e-004**	**3.1000e-004**	**0.0000**	**4.3535**	**4.3535**	**8.0000e-005**	**8.0000e-005**	**4.3794**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	93684	8.6680	1.4000e-003	1.7000e-004	8.7537
Mobile Home Park	5553.23	0.5138	8.0000e-005	1.0000e-005	0.5189
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**9.1818**	**1.4800e-003**	**1.8000e-004**	**9.2726**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	93684	8.6680	1.4000e-003	1.7000e-004	8.7537
Mobile Home Park	5553.23	0.5138	8.0000e-005	1.0000e-005	0.5189
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**9.1818**	**1.4800e-003**	**1.8000e-004**	**9.2726**

6.0 Area Detail

6.1 Mitigation Measures Area

Cisco Farms, Inc. Cannabis Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.2075	1.2000e-004	0.0108	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0185	0.0185	3.0000e-005	0.0000	0.0192
Unmitigated	1.2075	1.2000e-004	0.0108	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0185	0.0185	3.0000e-005	0.0000	0.0192

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2070					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-004	1.2000e-004	0.0108	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0185	0.0185	3.0000e-005	0.0000	0.0192
Total	**1.2075**	**1.2000e-004**	**0.0108**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0185**	**0.0185**	**3.0000e-005**	**0.0000**	**0.0192**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2070					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-004	1.2000e-004	0.0108	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0185	0.0185	3.0000e-005	0.0000	0.0192
Total	**1.2075**	**1.2000e-004**	**0.0108**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0185**	**0.0185**	**3.0000e-005**	**0.0000**	**0.0192**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.7535	0.0255	1.0000e-004	1.4209
Unmitigated	0.7535	0.0255	1.0000e-004	1.4209

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.010429 / 0	5.2200e-003	2.3700e-003	1.0000e-005	0.0669
Mobile Home Park	0.10128 / 0	0.0507	0.0230	8.0000e-005	0.6495
Unrefrigerated Warehouse-No Rail	0 / 2.15409	0.6976	1.1000e-004	1.0000e-005	0.7045
Total		**0.7535**	**0.0255**	**1.0000e-004**	**1.4209**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.010429 / 0	5.2200e-003	2.3700e-003	1.0000e-005	0.0669
Mobile Home Park	0.10128 / 0	0.0507	0.0230	8.0000e-005	0.6495
Unrefrigerated Warehouse-No Rail	0 / 2.15409	0.6976	1.1000e-004	1.0000e-005	0.7045
Total		**0.7535**	**0.0255**	**1.0000e-004**	**1.4209**

8.0 Waste Detail

8.1 Mitigation Measures Waste

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0365	2.1600e-003	0.0000	0.0905
Unmitigated	0.0365	2.1600e-003	0.0000	0.0905

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Mobile Home Park	0.08	0.0162	9.6000e-004	0.0000	0.0402
Unrefrigerated Warehouse-No Rail	0.1	0.0203	1.2000e-003	0.0000	0.0503
Total		**0.0365**	**2.1600e-003**	**0.0000**	**0.0905**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Mobile Home Park	0.08	0.0162	9.6000e-004	0.0000	0.0402
Unrefrigerated Warehouse-No Rail	0.1	0.0203	1.2000e-003	0.0000	0.0503
Total		**0.0365**	**2.1600e-003**	**0.0000**	**0.0905**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	24	168	18	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Cisco Farms, Inc. Cannabis Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (11 - 25 HP)	4.9600e-003	0.0259	0.0240	2.0000e-005		2.9100e-003	2.9100e-003		2.9100e-003	2.9100e-003	0.0000	2.3031	2.3031	3.2000e-004	0.0000	2.3111
Total	**4.9600e-003**	**0.0259**	**0.0240**	**2.0000e-005**		**2.9100e-003**	**2.9100e-003**		**2.9100e-003**	**2.9100e-003**	**0.0000**	**2.3031**	**2.3031**	**3.2000e-004**	**0.0000**	**2.3111**

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-6.8960	0.0000	0.0000	-6.8960

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	1.6 / 0	-6.8960	0.0000	0.0000	-6.8960
Total		**-6.8960**	**0.0000**	**0.0000**	**-6.8960**

State Water Resources Control Board

Sent by email. No hard copy to follow.
Effective Date: 5/10/2022 **WDID:** 1_12CC428193

Cisco Farms, Inc.
Attn: Karl Benemann
Email: lostcoastmadman@gmail.com

FACILITY ADDRESS:
1414 Chambers Road
Petrolia CA, 95558
Humboldt County

NOTICE OF APPLICABILITY – WASTE DISCHARGE REQUIREMENTS, WATER QUALITY ORDER WQ 2019-0001-DWQ

This Notice of Applicability (NOA) provides notice that the requirements of the State Water Resources Control Board (State Water Board) *Cannabis Cultivation Policy- Principles and Guidelines for Cannabis Cultivation* (Policy), and Order WQ 2019-0001-DWQ (General Order), are applicable to the site as described below.

DISCHARGER: CISCO FARMS, INC.

WDID: 1_12CC428193	**ORDER: WQ 2019-0001-DWQ**
Enrollment – Type	Enrollee - WDR
Tier and Risk	Tier 1 Low Risk
Wastewater Disposal	Not Applicable
Disturbed Area (SqFt)	2000
Cultivation Area (SqFt)	1

FACILITY APNs:
104-191-001-000, 104-232-005-000, 105-101-011-000

Additional site-specific requirements are contained in this NOA. The Discharger is responsible for all the applicable requirements in the Policy, General Order, and this NOA.

If you have any further question, please contact North Coast Regional Cannabis Unit at northcoast.cannabis@waterboards.ca.gov.

APPROVED BY

Karen Mogus
Deputy Director
Division of Water Quality

The *Cannabis Cultivation Policy- Principles and Guidelines for Cannabis Cultivation* (Policy) and the *General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities*, Order WQ 2019-0001-DWQ (General Order) are available at <http://www.waterboards.ca.gov/cannabis>. The Discharger shall ensure that all site operating personnel know, understand, and comply with the requirements contained in the Policy, General Order, and this Notice of Applicability (NOA). Note that the General Order contains standard provisions, general requirements, and prohibitions that apply to all cannabis cultivation activities (Attachment A of the General Order).

Please direct submittals, discharge notifications, and questions regarding compliance and enforcement to the North Coast Regional Cannabis Unit, at (707) 576-2676 or northcoast.cannabis@waterboards.ca.gov unless otherwise directed in this document.

CONTENTS:

Additional Cannabis Water Quality Resources

The links below are available on the last page of this document

Water Boards' Cannabis Cultivation Webpage	Water Quality Fees Webpage
Cannabis Policy	Water Quality Annual Fee Invoice Lookup
Cannabis General Order	Facility-At-A-Glance Report
Rural Roads Handbook	Cultivation Permitting Agency Webinar

For translation assistance, please contact the following:
Spanish: Para obtener más información en español por favor contáctenos al teléfono (916) 341-5265 o vía email a: OPP-LanguageServices@Waterboards.ca.gov.
Hmong: Rau kev npaub ntxiv ua lus Hmoob, thov txuas lus nrog peb ntawm xov tooj (916)-341-5265 los sis email: OPP-LanguageServices@Waterboards.ca.gov.

1. ENROLLMENT RESPONSIBILITIES

Cisco Farms, Inc. (hereafter "Discharger") submitted information, or updated enrollment information, for discharges of waste associated with cannabis cultivation at or near 1414 Chambers Road Petrolia CA, 95558. The Discharger's cannabis cultivation activities must comply with the requirements of the Policy and General Order before the winter period or the Discharger must contact the Regional Board as soon as possible prior to the winter period if compliance cannot be met. You are hereby assigned waste discharger identification (WDID) number 1_12CC428193**.**

The Discharger is responsible for all applicable requirements in the Policy, General Order, and this NOA, including submittal of all required reports. The Discharger is the sole person with legal authority to, among other things, change information submitted to obtain regulatory coverage under the General Order; request changes to enrollment status, including tier and risk designation; and terminate regulatory coverage. The Discharger may designate a third-party representative/agent to represent them in issues related to the General Order but must do so in writing. The Regional Water Quality Control Board (Regional Water Board) or the State Water Board (collectively Water Boards) will hold the Discharger liable for any noncompliance with the Policy, General Order, or this NOA. Pursuant to the General Order, if the Discharger is not the landowner, the Discharger must have express written permission of the landowner authorizing the cannabis cultivation activities. If the landowner contests this NOA and the Discharger cannot obtain consent, the Discharger will be required to submit a request for termination of coverage under the General Order, as described in Section 5 below.

This NOA does not provide authorization to cultivate cannabis; such authorization is provided through a license from the California Department of Cannabis Control, required permits from your local jurisdiction (city or county), and an agreement or exemption from agreement from the California Department of Fish and Wildlife. The Policy and General Order, and by reference this NOA, require that you obtain all appropriate permits from other agencies prior to cultivating cannabis.

2. FACILITY AND DISCHARGE DESCRIPTION

The information submitted by the Discharger indicates:

1. the disturbed area is less than 1 acre (43,560 square feet)
2. no portion of the disturbed area is within the required riparian setbacks
3. no portion of the disturbed area is located on a slope greater than 30 percent

Therefore, the activities are classified as Tier 1 Low Risk and meet the requirements of the General Order.

If site conditions described above change, you must contact the North Coast Regional Cannabis Unit listed at the top of page 2.

3. PROJECTS AND MAINTANCE OCCURING IN STREAMS AND WETLANDS

The Policy and General Order require that, prior to conducting any work in streams or wetlands, the Discharger obtain water quality certification from the Water Boards and other required permits from other agencies (e.g., a Clean Water Act section 404 permit from the United States Army Corps of Engineers, a Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife, and other local permits). Enrollment in the General Order requires that the Discharger obtain water quality certification for any such work, but this NOA does not provide the necessary certification. If the Discharger proposes or requires work in streams or wetlands, they must apply for water quality certification by filling out and submitting a separate application for that work. Additional application

and monitoring fees will apply. Please contact the North Coast Regional Cannabis Unit for application forms, fee information, and instructions.

4. GENERAL REQUIREMENTS

The General Order requires that all applicable best practicable treatment or control (BPTC) measures listed in Attachment A of the General Order be implemented before the onset of the winter period November 15 to April 1. Dischargers that cannot implement all applicable BPTC measures by the onset of the winter period shall submit to the Regional Water Board a Site Management Plan that includes a time schedule and scope of work for use by the Regional Water Board in developing a compliance schedule as described in General Requirement No. 33 in Attachment A of the General Order.

The Discharger shall notify the Regional Water Board in writing of any proposed change in the method of waste disposal for irrigation tailwater, hydroponic wastewater, or other miscellaneous industrial wastewaters. Note the following:

i. Discharge to a permitted wastewater treatment collection system and facility that accepts cannabis cultivation wastewater is permissible under the General Order. A will-serve letter (or equivalent) from the sewer agency is sufficient to demonstrate that the discharge is in compliance with wastewater system requirements and shall be made available to the Water Boards upon request.

ii. The Discharger shall retain, for a minimum of five years, appropriate documentation for any industrial wastewater collected to a storage tank for disposal at a permitted wastewater facility that accepts cannabis cultivation wastewater. Documentation shall be made available to the Water Boards upon request.

iii. The Discharger must obtain separate regulatory authorization (e.g., site-specific Waste Discharge Requirements (WDRs), conditional waiver of WDRs, or other permit mechanism) from the Regional Water Board prior to implementing alternative waste disposal methods, such as onsite wastewater treatment systems, including, but not limited to, a septic/leach field system, evaporation ponds, or onsite landscape irrigation using treated wastewater. Additional monitoring and reporting requirements may be necessary to demonstrate compliance with the General Order and the Regional Water Board's Basin Plan.

During reasonable hours, the Discharger shall allow the Water Boards, California Department of Fish and Wildlife, CAL FIRE, and any other authorized representatives of the Water Boards, upon presentation of a badge, employee identification card, or similar credentials, to:

i. enter premises and facilities where cannabis is cultivated; where water is diverted, stored, or used; where wastes are treated, stored, or disposed; or in which any records are kept;

ii. access and copy any records required to be kept under the terms and conditions of the Policy and General Order;

iii. record audio and video, inspect, and/or photograph any cannabis cultivation sites, and associated premises, facilities, monitoring equipment or device, practices, or operations regulated or required by the Policy and General Order; and

iv. sample, monitor, photograph, and record audio and video of site conditions, any discharge, waste material substances, or water quality parameters at any location for the purpose of ensuring compliance with the Policy and General Order.

5. TECHNICAL REPORT REQUIREMENTS

The technical reports described below shall be submitted through the Water Boards Cannabis Cultivation Programs Portal by completing a *General Order Technical Reporting* survey. See Section 8 for required reporting before termination of General Order coverage.

A Site Management Plan, due by 7/31/2021, or within 90 days of notifying the North Coast Regional Cannabis Unit of planned material change in activity, character, location, or volume of discharge (i.e. change in cultivation, disturbed area, wastewater disposal method, etc.) as required by General Order Provision C.1.a, Provision C.2.i, and Attachment A, Section 5. Attachment D of the General Order provides guidance on the contents of the Site Management Plan.

6. MONITORING AND REPORTING PROGRAM

The Discharger shall comply with the Monitoring and Reporting Program (MRP). Attachment B of the General Order provides guidance on the contents for the annual reporting requirement. Annual reports shall be submitted through the Water Boards Cannabis Cultivation Programs Portal by completing a *Online Cannabis Water Quality Monitoring & Reporting Program* survey by March 1 following the year being monitored. The Discharger shall comply with the MRP and any future revisions as specified by the Regional Water Board Executive Officer, the State Water Board Division of Water Quality Deputy Director, or the State Water Board Chief Deputy Director.

7. ANNUAL FEE

If applicable you will receive an invoice annually until coverage under this General Order is formally terminated. Please visit <http://www.waterboards.ca.gov/resources/fees/water_quality/> and click on the latest Water Quality Fee Schedule (for example, for fiscal year 2020-2021, the fee schedule is called 'FY 2020-2021 Water Quality Fee Schedule'). California Code of Regulation Title 23 Division 3 Chapter 9 Article 1 Section 2200.7, 'Annual Fee Schedule for Cannabis Cultivation.' Please note that the Fee Schedule is reviewed annually and future fees may be invoiced at different rates.

Annual fees are assessed on a fiscal year basis (July 1 through June 30). Invoices are sent by the State Water Board roughly midway through each fiscal year, usually in January. Please do not submit payments without receiving an invoice. If you have questions or concerns about your fees please contact the Water Boards Fee Branch at FeeBranch@waterboards.ca.gov or (916) 341-5247. The fee is due and payable on an annual basis until coverage under the General Order is formally terminated. Instructions for requesting termination of coverage appear in Section 8.

To terminate coverage, the Discharger must submit a Notice of Termination, including a Site Closure Report, at least 90 days prior to termination of activities, and a final Annual Monitoring Report. See Termination of Coverage Under the General Order section below.

8. TERMINATION OF COVERAGE UNDER THE GENERAL ORDER

Dischargers who wish to terminate coverage under the General Order must submit a Notice of Termination and Site Closure Report. The Notice of Termination and Site Closure Report shall be submitted through the Water Boards Cannabis Cultivation Programs Portal

<https://public2.waterboards.ca.gov/cgo>by completing a *Cannabis General Order Termination Request Form* survey.

Dischargers enrolled under Waste Discharge Requirements in the General Order (i.e., non-Waiver enrollees) must also submit a final Annual Monitoring Report. The final Annual Monitoring Report shall be submitted by completing an *Online Cannabis Water Quality Monitoring & Reporting Program* survey.

The Regional Water Board reserves the right to inspect the site before approving a request for termination of coverage. Attachment C of the General Order includes the *NOT* form and Attachment D of the General Order provides guidance on the contents of the *Site Closure Report.*

9. REGION SPECIFIC REQUIREMENTS

Dischargers shall comply with all applicable federal, state, and local laws, regulations, and permitting requirements. This includes any applicable Regional Water Board Orders or Regional Water Quality Control Plan (Basin Plan) requirements, including prohibitions and/or water quality objectives governing the discharge. In the event of duplicate or conflicting requirements, the most stringent requirement shall apply.

You can access your regions Basin Plan by visiting your local Regional Water Board's website at **<**https://www.waterboards.ca.gov/northcoast/>.

The Discharger shall also comply with the provisions of the North Coast Regional Water Board's Supplement to the General Order Annual Monitoring and Reporting Program (Regional Supplement), which independently appears as Investigative Order No. R1-2019-0023, issued by the Regional Water Board Executive Officer on March 22, 2019. The information required by Order No. R1-2019-0023 will be submitted while completing the *Online Cannabis Water Quality Monitoring & Reporting Program* survey

Individuals Notified of Notice of Applicability Issuance

Cannabis Regulatory Unit
State Water Resources Control Board
dwq.cannabis@waterboards.ca.gov

North Coast Water Quality Control Board
Northcoast.Cannabis@Waterboards.Ca.Gov

Cliff Johnson, Senior Planner
Humboldt County
Cjohnson@Co.Humboldt.Ca.Us

Additional Cannabis Water Quality Resources

Water Boards' Cannabis Cultivation Webpage:
https://www.waterboards.ca.gov/water_issues/programs/cannabis/cannabis_outreach.html

Cannabis Policy:
https://www.waterboards.ca.gov/water_issues/programs/cannabis/docs/policy/final_cannabis_policy_with_attach_a.pdf

Cannabis General Order:
https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2019/wqo2019_0001_dwq.pdf

Rural Roads Handbook:
http://www.pacificwatershed.com/sites/default/files/handbook_chapter_download_page.pdf

Cultivation Permitting Agency Webinar: https://youtu.be/kVblKnFRZy8

Water Quality Fees Webpage: https://www.waterboards.ca.gov/resources/fees/water_quality/

Water Quality Annual Fee Invoice Lookup:
http://infofees.waterboards.ca.gov/FeeInfo/DischargerInvoice.aspx

Facility-At-A-Glance Report:
https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?reportName=facilityAtAGlance&inCommand=reset

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
REGION 1 – NORTHERN REGION
619 2nd Street
Eureka, CA 95501

LAKE OR STREAMBED ALTERATION AGREEMENT
NOTIFICATION NO. EPIMS-HUM-18009-R1C
Unnamed Tributary to Mill Creek, Tributary to the Mattole River and the Pacific Ocean

Karl Benemann
Benemann Stream Crossings and Water Diversion Project
3 Encroachments

This Lake or Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Wildlife (CDFW) and Karl Benemann (Permittee).

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, the Permittee initially notified CDFW on May 3, 2021 that the Permittee intends to complete the project described herein.

WHEREAS, pursuant to FGC section 1603, CDFW has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in the Agreement necessary to protect those resources.

WHEREAS, the Permittee has reviewed the Agreement and accepts its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, the Permittee agrees to complete the project in accordance with the Agreement.

PROJECT LOCATION

The project is located within the Lower Mattole River watershed, approximately 1 ½ miles northeast of the town of Petrolia, County of Humboldt, State of California; Section 02, T02S, R02W, Humboldt Base and Meridian, in the Petrolia U.S. Geological Survey 7.5-minute quadrangle; Assessor's Parcel Number 105-101-011-000; latitude 40.3223 N and longitude 124.2563 W at the point of diversion (POD).

PROJECT DESCRIPTION

The project is limited to three encroachments (Table 1). One encroachment is for water diversion from an unnamed tributary to Mill Creek. Water is diverted for domestic use and agricultural cattle watering. Work for the water diversion will include use and maintenance of the water diversion infrastructure. The two other proposed

encroachments are to upgrade failing and undersized stream crossings. Work for these encroachments will include excavation, removal of the failing crossings, replacement with new properly sized crossings, backfilling and compaction of fill, and rock armoring as necessary to minimize erosion.

Table 1. Project Encroachments with Description

ID	Latitude/Longitude	Description
POD-1	40.3223, -124.2563	Water diversion from unnamed tributary to Mill Creek for domestic and cattle water use only. **Domestic Use** Water diversion for domestic use year-round, limited to 400 gallons per day (gpd) during the Seasonal Diversion Minimization. **Cattle Water** Water diversion for ranching purposes. Diversion period is January – July annually, limited to 500 gallons per day (gpd). Combined allowance from January – July is 900 gallons per day (gpd) for domestic and cattle water. Permittee shall observe **Seasonal Diversion Minimization** from April 1 – October 31 annually for domestic use; 80% bypass required at all times for all purposes (domestic and cattle).The maximum instantaneous diversion rate from the water intake shall not exceed **three (3) gallons per minute** (gpm) at any time for any use.
Crossing-1 (STX-2)	40.0324, -124.2655	Replace failing and undersized 48-inch HDPE culvert with a minimum 72-inch diameter culvert or equivalent arched culvert. Install to grade and rock armor as necessary.
Crossing-2 (STX-3)	40.3197, -124.2602	Replace failing and undersized 36-inch HDPE culvert with a minimum 60-inch diameter culvert or equivalent arched culvert. Install to grade and rock armor as necessary.

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include Chinook Salmon (*Oncorhynchus tshawytscha*), Coho Salmon (*O. kisutch*), Steelhead Trout (*O. mykiss*), Western Brook Lamprey (*Lampetra richardsoni*), Pacific Lamprey (*Entosphenus tridentata*), Southern Torrent Salamander (*Rhyacotriton variegatus*), Coastal Giant Salamander *(Dicamptodon tenebrosus)*, Foothill Yellow-legged Frog *(Rana boylii),* Coastal Tailed Frog (*Ascaphus truei*), Northwest Pond Turtle (*Actinemys*

marmorata) amphibians, reptiles, aquatic invertebrates, mammals, birds, and other aquatic and riparian species.
The adverse effects the project could have on the fish or wildlife resources identified above include:

Impacts to water quality:
- Reduced instream flow; and
- Temporary increase in fine sediment transport;

Impacts to bed, channel, or bank and direct effects on fish, wildlife, and their habitat:
- Direct impacts on benthic organisms;

Impacts to natural flow and effects on habitat structure and process**:**
- Cumulative effect when other diversions on the same stream are considered;
- Diversion of flow from activity site;
- Direct and/or incidental take;
- Indirect impacts;
- Impediment of up- or down-stream migration;
- Water quality degradation; and
- Damage to aquatic habitat and function.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

The Permittee shall meet each administrative requirement described below.

1.1 Documentation at Project Site. The Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to CDFW personnel, or personnel from another state, federal, or local agency upon request.

1.2 Providing Agreement to Persons at Project Site. The Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to all persons who will be working on the project at the project site on behalf of the Permittee, including but not limited to contractors, subcontractors, inspectors, and monitors.

1.3 Change of Conditions and Need to Cease Operations. If conditions arise, or change, in such a manner as to be considered deleterious by CDFW to the stream or wildlife, operations shall cease until corrective measures approved by CDFW are taken. This includes new information becoming available that indicates that bypass flows and diversion rates provided in this agreement are not providing adequate protection to keep aquatic life downstream in good condition or to avoid “take” or “incidental take” of federal or State listed species.

1.4 Adherence to Existing Authorizations. All water diversion facilities that the Permittee owns, operates, or controls shall be operated and maintained in accordance with current law and applicable water rights.

1.5 Notification of Conflicting Provisions. The Permittee shall notify CDFW if the Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, CDFW shall contact the Permittee to resolve any conflict.

1.6 Project Site Entry. Permittee agrees that CDFW personnel may enter the project site at any time to verify compliance with the Agreement.

1.7 CDFW Notification of Work Initiation and Completion. The Permittee shall contact CDFW within the seven-day period preceding the beginning of work permitted by this Agreement. Information to be disclosed shall include Agreement number, and the anticipated start date. Subsequently, the Permittee shall notify CDFW no later than seven (7) days after the project is fully completed.

1.8 Agreement Compliance. The proposed work shall comply with all measures included in this Agreement. **Failure to comply with these measures may result in suspension or revocation of this Agreement.**

2. Avoidance and Minimization Measures

To avoid or minimize adverse impacts to fish and wildlife resources identified above, the Permittee shall implement each measure listed below.

2.1 Permitted Project Activities. Except where otherwise stipulated in this Agreement, all work shall be in accordance with the Permittee Notification received on May 3, 2021, together with all maps, BMP's, photographs, drawings, and other supporting documents submitted with the Notification.

2.2 Incidental Take. This Agreement does not allow for the "take," or "incidental take" of any federal or State listed threatened or endangered listed species.

Project Timing

2.3 Work Period. All work, not including authorized diversion of water, shall be confined to the period **June 1 through October 31** of each year. Work within the active channel of a stream shall be restricted to periods of dry weather. Precipitation forecasts and potential increases in stream flow shall be considered when planning construction activities. Construction activities shall cease, and all necessary erosion control measures shall be implemented prior to the onset of precipitation.

2.4 Work Completion. The proposed work **shall be completed by prior to the expiration of this Agreement's term**. A notice of completed work, including photographs of each site, shall be submitted to CDFW within seven (7) days of project completion.

2.5 Extension of the Work Period. If weather conditions permit, and the Permittee wishes to extend the work period before June 1 or after October 31, a written request shall be made to CDFW at least five (5) working days before the **proposed work period variance. Written approval (letter or e-mail) for the proposed time extension must be received from CDFW prior to activities beginning before June 1 or continuing past October 31.**

2.6 Avoidance of Nesting Birds. Fish and Game Code sections 3503 and 3503.5 prohibits the taking or destroying of native bird's nests or eggs. Vegetation maintenance or removal (e.g., clearing and grubbing) shall occur between September 1 and March 15. Removal areas should be managed once cleared to reduce nesting potential during the breeding season.

Vegetation Management

2.7 Minimum Vegetation Removal. No native riparian vegetation shall be removed from the bank of the stream, except where authorized by CDFW. Permittee shall limit the disturbance or removal of native vegetation to the minimum necessary to achieve design guidelines and standards for the Authorized Activity. Permittee shall take precautions to avoid damage to vegetation outside thse work area.

Water Diversion

Domestic and Cattle Use

2.8 Maximum Diversion Rate. The maximum instantaneous diversion rate from the water intake shall not exceed **three (3) gallons per minute** (gpm) at any time.

2.9 Bypass Flow. The Permittee shall pass **80% of the flow** at all times to keep all aquatic species including fish and other aquatic life in good condition below the point of diversion.

2.10 Seasonal Diversion Minimization: Domestic Use. No more than **400 gallons per day** shall be diverted during the low flow season from **April 1 to November 15** of each year. Water shall be diverted only if the Permittee can adhere to conditions 2.8 and 2.9 of this Agreement.

2.11 Seasonal Diversion Minimization: Cattle Use. No more than **500 gallons per day** shall be diverted during the Active Diversion Period of January – July annually. No water for cattle ranching shall be diverted between August 1 – December 31 of each year. Water shall be diverted only if the Permittee can adhere to conditions 2.8 and 2.9 of this Agreement.

2.12 Measurement of Diverted Flow. Permittee shall install and maintain an adequate measuring device (i.e., flow totalizer) for measuring the instantaneous and cumulative rate of diversion. This measurement shall begin as soon as this Agreement is signed by the Permittee. The device shall be installed within the in-line flow of diverted water. The Permittee shall maintain records of diversion, and provide information including, but not limited to the following:

2.12.1 The date diversion occurred.

2.12.2 The amount of water used per week for domestic and cattle purposes, recorded individually.

2.12.3 At CDFW's request, Permittee shall make available for review any diversion records required by the State Water Resources Control Board.

2.13 Water Management Plan. The permittee shall submit a Water Management Plan no later than **sixty days** from the time this Agreement is made final that describes how compliance will be achieved under this Agreement. The Water Management Plan shall include details on water storage, water conservation, or other relevant material to maintain water needs in coordination with Seasonal Diversion Minimization and/or forbearance and bypass flow requirements. The Water Management Plan shall include a brief narrative describing water use on the property, including measurement of water use and photographs of the water flow totalizer at the beginning and end of each season, photographs to support the narrative, and water use calculations to ensure compliance with this Agreement.

Water Diversion Facility

2.14 Intake Structure. No polluting materials (e.g., particle board, plastic sheeting, bentonite) shall be used to construct or screen, or cover the diversion intake structure.

2.15 Intake Structure Placement. Infrastructure installed in the streambed (e.g., cistern or spring box) shall not exceed 20 percent of the active channel width and shall not be located in the deepest portion of the channel. The depth of the intake shall be no greater than six inches below the streambed. The diversion shall be located no less than 25 feet from the spring head (i.e., emergence of surface water).

2.16 Intake Screening. The Permittee shall regularly inspect, clean, and maintain screens in good condition.

2.16.1 A water intake screen with round openings shall not exceed 3/32-inch diameter; a screen with square openings shall not exceed 3/32-inch measured diagonally; and a screen with slotted openings shall not exceed 0.069 inches in width. Slots must be evenly distributed on the screen area.

2.16.2 The screen shall be designed to distribute the flow uniformly over the entire screen area.

2.17 Intake Shall Not Impede Aquatic Species Passage. The water diversion structures shall be designed, constructed, and maintained such that they do not constitute a barrier to upstream or downstream movement of aquatic life.

2.18 Exclusionary Devices. Permittee shall keep the diversion structures (e.g., cistern) covered at all times to prevent the entrance and entrapment of amphibians and other wildlife.

2.19 Seasonal Diversion Disconnection – Cannabis Irrigation. Permittee shall disconnect all water lines from the point of diversion (e.g., cistern, spring box, etc.) and water storage facilities at the end of each diversion season. All water lines shall be removed from the active channel.

2.20 Heavy Equipment Use. No heavy equipment shall be used in the excavation or replacement of the existing water diversion structure. The Permittee shall use hand tools or other low impact methods of removal/replacement. All project materials and debris shall be removed from the project site and properly disposed of off-site upon project completion.

Diversion to Storage

2.21 Water Storage. All water storage facilities (WSF; e.g., reservoirs, storage tanks, and bladders tanks) should be located outside bed, bank or channel of a stream. Covers/lids shall be securely affixed to water tanks at all times to prevent entry by wildlife. Permittee shall cease all water diversion at the point of diversion when WSFs are filled to capacity.

2.22 Storage Maintenance. Water storage facilities shall have a float valve to shut off the diversion when tanks are full to prevent overflow. Water shall not leak, overflow, or overtop WSFs at any time. Permittee shall regularly inspect all water storage facilities and infrastructure used to divert water to storage and repair any leaks.

2.23 Reservoirs/Ponds. Shall be appropriately designed, sized, and managed to contain any diverted water in addition to precipitation and storm water runoff, without overtopping.

2.24 Limitations on Impoundment and Use of Diverted Water. The Permittee shall impound and use water in accordance with a valid water right, including any limitations on when water may be impounded and used, the purpose for which it may be impounded and used, and the location(s) where water may be impounded and used.

2.25 Water Conservation. The Permittee shall make best efforts to minimize water use, and to follow best practices for water conservation and management.

2.26 State Water Code. This Agreement does not constitute a valid water right. The Permittee shall comply with State Water Code sections 5100 and 1200 et seq. as appropriate for the water diversion and water storage.

Stream Crossings

2.27 Stream Protection. No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete washings, oil or petroleum products, or other deleterious material from project activities shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into the stream. All project materials and debris shall be removed from the project site and properly disposed of off-site upon project completion.

2.28 Equipment Maintenance. Refueling of machinery or heavy equipment, or adding or draining oil, lubricants, coolants, or hydraulic fluids shall not take place within stream bed, channel, and bank. All such fluids and containers shall be disposed of properly off-site. Heavy equipment shall not be stored within stream bed, channel, and bank.

2.29 Hazardous Spills. If at any time any material which could be hazardous or toxic to aquatic life enters a stream, the Permittee shall immediately notify the California Emergency Management Agency State Warning Center at 1-800-852-7550, and immediately initiate clean-up activities. Permittee shall notify CDFW at 707-445-6493 and consulted regarding clean-up procedures as soon as practicable, but no later than 24 hours after the spill.

2.30 Prohibition of Live Stream Work. No work is authorized in a live flowing stream. All work shall be conducted when the stream is dry. Permittee shall notify CDFW if it determines that work in a live flowing stream is required to complete a project and will submit a dewatering plan.

2.31 Dewatering.

2.31.1 Stream Diversion. Only when work in a flowing stream is unavoidable (e.g., perennial streams), prior to the start of construction, Permittee shall isolate the work area from the flowing stream. To isolate the work area, water-tight cofferdams shall be constructed upstream and downstream of the work area, and water diverted through a suitably sized pipe. Water shall be diverted from upstream of the upstream cofferdam, and discharge downstream of the downstream cofferdam. Cofferdams and the stream diversion system shall remain in place and functional throughout the construction period. Cofferdams or stream diversions that fail for any reason

shall be repaired immediately.

2.31.2 Maintain Aquatic Life. When any cofferdam or other artificial obstruction is being constructed, maintained, or placed in operation, Permittee shall allow sufficient water at all times to pass downstream to maintain aquatic life below the obstruction pursuant to Fish and Game Code §5937.

2.31.3 Stranded Aquatic Life. The Permittee shall check daily for stranded aquatic life as the water level in the dewatering area drops. All reasonable efforts shall be made to capture and move all stranded aquatic life observed in the dewatered areas. Capture methods may include hand nets, dip nets, buckets, and/or by hand. Captured aquatic life shall be released immediately in the closest suitable aquatic habitat adjacent to the work site. Permittee shall submit detailed information regarding species that were stranded and relocated with the Project Inspection Report.

2.31.4 Minimize Turbidity and Siltation. Permittee shall use only clean (washed), non-erodible materials, such as rock or sandbags that do not contain soil or fine sediment, to construct any temporary stream flow bypass. Permittee shall divert stream flow around the work site in a manner that minimizes turbidity and siltation and does not result in erosion or scour downstream of the diversion.

2.31.5 Remove any Materials upon Completion. Permittee shall remove all materials used for the temporary stream flow bypass after the Authorized Activity is completed.

2.31.6 Restore Normal Flows. Permittee shall restore normal flows to the effected stream immediately upon completion of work at that location.

2.32 Excavated Fill. Excavated fill material shall be placed in a stable upland location where it cannot deliver to a stream or wetland. To minimize the potential for material to enter the watercourse during the winter period, all excavated and relocated fill material shall be contoured (to drain water) and compacted to effectively incorporate and stabilize loose material into existing road and/or landing features.

2.33 Runoff from Steep Areas. The Permittee shall ensure that runoff (concentrated flow) from steep, erodible surfaces will be slowed and diverted into stable areas with little erosion potential or contained behind erosion control structures. Erosion control structures such as straw bales and/or siltation control fencing shall be placed and maintained until the threat of erosion ceases. Frequent water bars shall be placed on dirt roads, heavy equipment tracks, or other work trails to control erosion.

2.34 Culvert Installation.

2.34.1 If the project is located in a moderate to very high Fire Hazard Severity Zone as designated by CAL FIRE, culvert materials should consist of corrugated metal pipe (CMP). Use of High-Density Polyethylene (HDPE) pipe is not recommended.

2.34.2 Existing fill material in the crossing shall be excavated down vertically to the approximate original channel and outwards horizontally to the approximate crossing hinge points (transition between naturally occurring soil and remnant temporary crossing fill material) to remove any potential unstable debris and voids in the older fill prism.

2.34.3 Culvert shall be installed to grade (not perched or suspended), aligned with the natural stream channel, and extend lengthwise completely beyond the toe of fill. If culvert cannot be set to grade, it shall be oriented in the lower third of the fill face, and a downspout or appropriately-sized energy dissipator (e.g., boulders, riprap, or rocks) shall be installed above or below the outfall as needed to effectively prevent stream bed, channel, or bank erosion (scouring, headcutting, or downcutting). The Permittee shall ensure basins are not constructed, and channels shall not be widened at culvert inlets.

2.34.4 Culvert bed shall be composed of either compacted rock-free soil or crushed gravel. Bedding beneath the culvert shall provide for even distribution of the load over the length of the culvert and allow for natural settling and compaction to help the culvert seat into a straight profile. The crossing backfill materials shall be free of rocks, limbs, or other debris that could allow water to seep around the culvert and shall be compacted.

2.34.5 Culvert inlet/outlet (including the outfall area) and fill faces shall be armored where stream flow, road runoff, or rainfall energy is likely to erode fill material and the outfall area.

2.34.6 Permanent culverts shall be sized to accommodate the estimated 100-year flood flow (i.e., ≥1.0 times the width of the bankfull channel width or the 100-year flood size, whichever is greater), including debris, culvert embedding, and sediment loads.

2.35 Crossing Maintenace

2.35.1 The placement of armoring shall be confined to the work period when the stream is dry or at its lowest flow.

2.35.2 No heavy equipment shall enter the wetted stream channel.

2.35.3 No fill material, other than clean (washed) rock, shall be placed in the

stream channel.

2.35.4 Rock shall be sized to withstand washout from high stream flows and extend above the ordinary high-water level.

2.35.5 Rock armoring shall not constrict the natural stream channel width and shall be keyed into a footing trench with a depth sufficient to prevent instability.

2.36 Road Approaches. The Permittee shall treat road approaches to new or re-constructed permanent stream crossings to minimize erosion and sediment delivery to the stream. Permittee shall ensure road approaches are hydrologically disconnected to the maximum extent feasible to prevent sediment from entering the stream crossing site, including when a stream crossing is being constructed or reconstructed. Road approaches shall be armored from the stream crossing to the nearest effective water bar or point where road drainage does not drain to the stream crossing, with durable rock.

2.37 Project Inspection. The Project shall be inspected by a California licensed engineer, or other qualified professional with appropriate license or qualifications, to ensure the stream crossings were constructed as designed. A copy of the **Project Inspection Report**, including photographs of each site, shall be submitted to CDFW within 90 days of completion of this project.

Erosion Control and Pollution

2.38 Erosion Control. Permittee shall use erosion control measures throughout all work phases where sediment runoff could enter a stream, lake, or wetland (i.e., Waters of the State).

2.39 Seed and Mulch. Upon completion of construction operations and/or the onset of wet weather, Permittee shall stabilize exposed soil areas within the work area by applying mulch and seed. Permittee shall utilize vegetative (e.g., seeding) or other non-vegetative methods such as jute mat, coir mat, wood chip mat, straw mat or wattle, straw mulch, native duff (leaves, needles, fine twigs, etc.), or lopped native slash to protect and stabilize soils. Straw mulching shall utilize at least 2 to 4 inches of clean straw (such as rice, barley, wheat) or weed-free straw. Seeding shall use regional native seed or non-native seed that is known not to persist or spread [e.g., barley (*Hordeum vulgare*), or wheat (*Triticum aestivum*)]. No known invasive grass seed such as annual or perennial ryegrass (*Lolium multiflorum or L. perenne*, which are now referred to as *Festuca perennis*), shall be used.

2.40 Erosion and Sediment Barriers. Permittee shall monitor and maintain all erosion and sediment barriers in good operating condition throughout the work period and the following rainy season, defined herein to mean **October 31 through June 1**. Maintenance includes, but is not limited to, removal of accumulated sediment and/or replacement of damaged sediment fencing, coir logs, coir rolls, and/or

straw bale barriers. If the sediment barrier fails to function as designed, Permittee shall employ corrective measures, and notify CDFW immediately.

2.41 Prohibition on Use of Monofilament Netting. To minimize the risk of ensnaring and strangling wildlife, Permittee shall not use any erosion control materials that contain synthetic (e.g., plastic or nylon) monofilament netting, including photo- or biodegradable plastic netting. Geotextiles, fiber rolls, and other erosion control measures shall be made of loose-weave mesh, such as jute, hemp, coconut (coir) fiber, or other products without welded weaves.

2.42 Site Maintenance. Permittee shall be responsible for site maintenance including, but not limited to, re-establishing erosion control to minimize surface erosion and ensuring drainage structures and stream banks remain sufficiently stable.

2.43 Cover Spoil Piles. Permittee shall have readily available erosion control materials such as wattles, natural fiber mats, or plastic sheeting, to cover and contain exposed spoil piles and exposed areas to prevent sediment from eroding into a stream, lake, or wetland (i.e., Waters of the State). Permittee shall apply and secure these materials prior to rain events to prevent loose soils from entering a stream, lake, or wetland (i.e., Waters of the State).

2.44 No Dumping. Permittee shall not deposit, permit to pass into, or place where it can pass into a stream, lake, or wetland (i.e., Waters of the State) any material deleterious to fish and wildlife, or abandon, dispose of, or throw away within 150 feet of a stream, lake, or wetland (i.e., Waters of the State) any cans, bottles, garbage, motor vehicle or parts thereof, rubbish, litter, refuse, waste, debris, or the viscera or carcass of any dead mammal, or the carcass of any dead bird.

3. **Reporting Measures**

Permittee shall meet each reporting requirement described below. All reports shall be submitted by e-mail to CDFW at EPIMS.R1C@wildlife.ca.gov.

3.1 Notice of Work Initiation. The Permittee shall contact CDFW within the seven-day period preceding the beginning of work permitted by this Agreement (condition 1.7). Information to be disclosed shall include Agreement number, and the anticipated start date.

3.2 Work Completion. The proposed work **shall be completed by prior to the expiration of this Agreement's term**. A notice of completed work (condition 2.4), with supplemental photos, shall be submitted to CDFW **within seven (7) days** of project completion.

3.3 Measurement of Diverted Flow. Copies of the **Water Diversion Records** (condition 2.12) shall be submitted to CDFW no later than **March 31** of each year beginning in **2023**.

3.4 Water Management Plan. The Permittee shall submit a **Water Management Plan** (condition 2.13) within **60 days** from the effective date of this agreement.

3.5 Project Inspection. The Permittee shall submit the **Project Inspection Report** (condition 2.37) to CDFW.

CONTACT INFORMATION

Written communication the Permittee or CDFW submits to the other shall be delivered to the address below unless the Permittee or CDFW specifies otherwise.

To Permittee:

Karl Benemann
1414 Chambers Road
Petrolia, CA 95558
EPIMS-HUM-18009-R1C
Benemann Stream Crossings and Water Diversion Project
ciscofarms707@gmail.com

To CDFW:

Department of Fish and Wildlife
Northern Region
619 Second Street
Eureka, California 95501
EPIMS.R1C@wildlife.ca.gov
Joshua.Gruver@wildlife.ca.gov
Attn: Lake and Streambed Alteration Program
Notification #EPIMS-HUM-18009-R1C

LIABILITY

The Permittee shall be solely liable for any violation of the Agreement, whether committed by the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

This Agreement does not constitute CDFW's endorsement of or require the Permittee to proceed with the project. The decision to proceed with the project is the Permittee's alone.

SUSPENSION AND REVOCATION

CDFW may suspend or revoke in its entirety this Agreement if it determines that the Permittee or any person acting on behalf of the Permittee, including its officers,

employees, representatives, agents, or contractors and subcontractors, is not in compliance with the Agreement.

Before CDFW suspends or revokes the Agreement, it shall provide the Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide the Permittee an opportunity to correct any deficiency before CDFW suspends or revokes the Agreement, and include instructions to the Permittee, if necessary, including but not limited to a directive to immediately cease the specific activity or activities that caused CDFW to issue the notice.

ENFORCEMENT

Nothing in the Agreement precludes CDFW from pursuing an enforcement action against the Permittee instead of, or in addition to, suspending or revoking the Agreement.

Nothing in the Agreement limits or otherwise affects CDFW's enforcement authority or that of its enforcement personnel.

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or an activity related to it.
This Agreement does not relieve the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the FGC including, but not limited to, FGC sections 2050 *et seq*. (threatened and endangered species), 3503 (bird nests and eggs), 3503.5 (birds of prey), 5650 (water pollution), 5652 (refuse disposal into water), 5901 (fish passage), 5937 (sufficient water for fish), and 5948 (obstruction of stream).

Nothing in the Agreement authorizes the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

AMENDMENT

CDFW may amend the Agreement at any time during its term if CDFW determines the amendment is necessary to protect an existing fish or wildlife resource.

The Permittee may amend the Agreement at any time during its term, provided the amendment is mutually agreed to in writing by CDFW and the Permittee. To request an amendment, the Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the corresponding amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

TRANSFER AND ASSIGNMENT

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of the Agreement to another entity shall not be valid or effective, unless the transfer or assignment is requested by the Permittee in writing, as specified below, and thereafter CDFW approves the transfer or assignment in writing.

The transfer or assignment of the Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, the Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

EXTENSIONS

In accordance with FGC section 1605(b), the Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, the Permittee shall submit to CDFW a completed CDFW "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). CDFW shall process the extension request in accordance with FGC 1605(b) through (e).

If the Permittee fails to submit a request to extend the Agreement prior to its expiration, the Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (FGC section 1605(f)).

EFFECTIVE DATE

The Agreement becomes effective on the date of CDFW's signature, which shall be: 1) after the Permittee signature; 2) after CDFW complies with all applicable requirements under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable FGC section 711.4 filing fee listed at http://www.wildlife.ca.gov/habcon/ceqa/ceqa_changes.html.

TERM

This Agreement shall **expire five years** from date of execution, unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. The Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after the Agreement expires or is terminated, as FGC section 1605(a)(2) requires.

AUTHORITY

If the person signing the Agreement (signatory) is doing so as a representative of the Permittee, the signatory hereby acknowledges that he or she is doing so on the Permittee's behalf and represents and warrants that he or she has the authority to legally bind the Permittee to the provisions herein.

AUTHORIZATION

This Agreement authorizes only the project described herein. If the Permittee begins or completes a project different from the project the Agreement authorizes, the Permittee may be subject to civil or criminal prosecution for failing to notify CDFW in accordance with FGC section 1602.

CONCURRENCE

Through the electronic signature by the permittee or permittee's representative as evidenced by the attached concurrence from CDFW's Environmental Permit Information Management System (EPIMS), the permittee accepts and agrees to comply with all provisions contained herein.

The EPIMS concurrence page containing electronic signatures must be attached to this agreement to be valid.

Permit Details

Permit: EPIMS-HUM-18009-R1C - Chambers Rd Ranch Agreement - 2021

Status:	Underway
Region:	Region 1 (Coastal)
Permittee Organization:	Cisco Farms, Inc.
CDFW Contact:	Joshua Gruver

Standard Agreement

Signature Page

This Standard Agreement is being issued to:

Karl Benemann

Final Standard Agreement:* EPIMS-HUM-18009-R1C_Final_Standard_Agreement.pdf
Open and print the attached PDF file.

Exhibits

Concurrence

I am the applicant or I have the authority to sign for the applicant. By my signature, I accept and agree to comply with all the provisions contained herein.

Final Agreement Effective Date:	06/07/2022
Permittee Electronic Signature:	Karl Benemann First and Last Name
Date Signed:	06/07/2022

Department of Fish and Wildlife

CDFW Electronic Signature:	Angela Liebenberg
CDFW Representative Title:	Senior Environmental Scientist (Supervisor)
Date Signed:	06/07/2022
Acting for:	Yes
Acting for the listed CDFW Representative:	Rebecca Garwood First and Last Name