Biological Assessment

For

Seigler Springs Cultivation

11615 Seigler Springs N. Road, Middletown, CA

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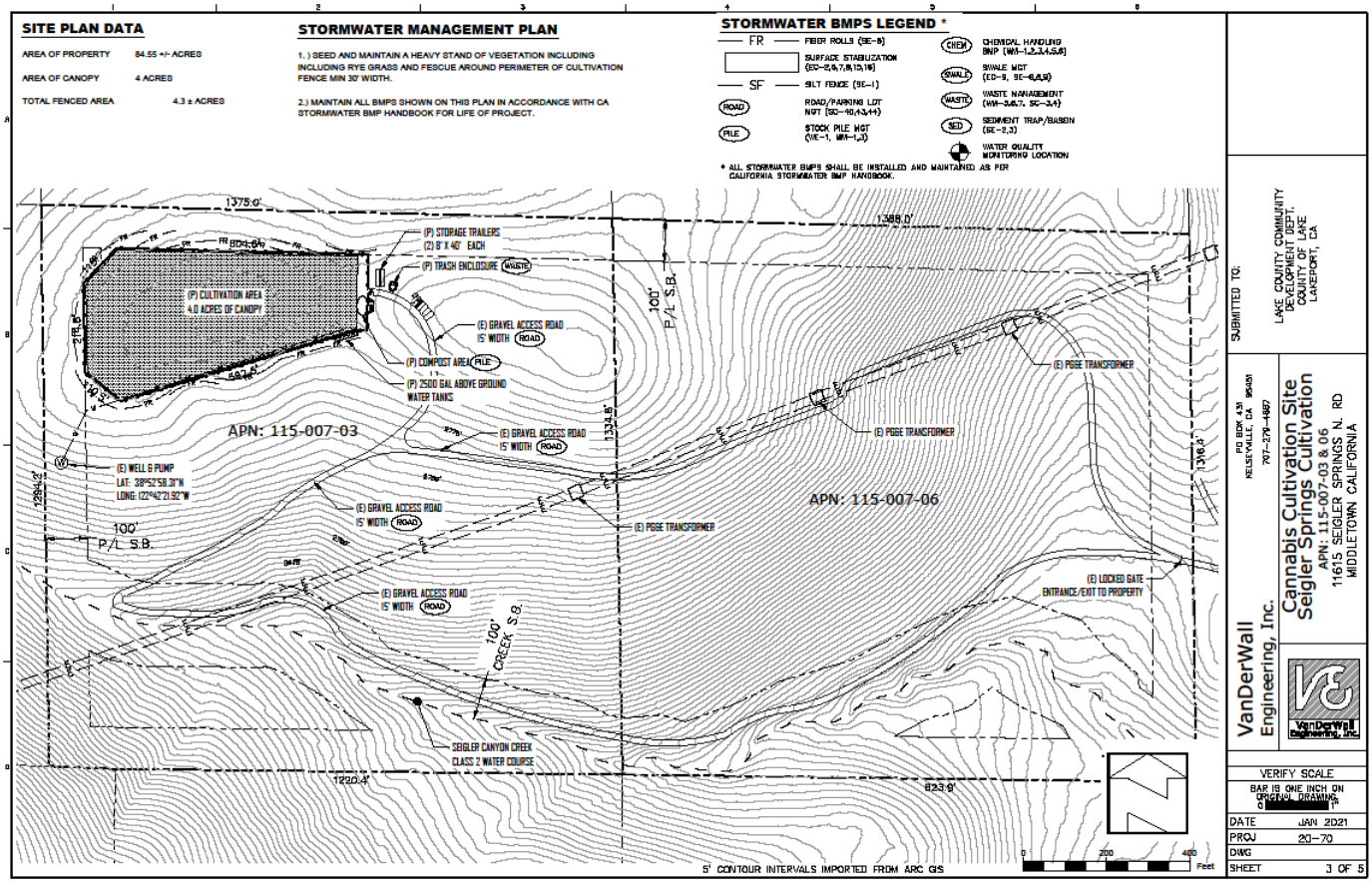
1.0 PROJECT DESCRIPTION

1.1 <u>Proposed Project</u>: This survey covers two legal parcels of approximately 84.55 acres located in south central Lake County proposed for development. **Lake County Tax Assessor Parcel (APN) 115-007-03 and 115-007-06. GPS 38.88335/122.70109** at approximately the center of the area. Please see below **Figure 1; Site Plan**

The proposed project consists of a four (4) acre fenced garden area with associated infrastructure. This includes a well and water system, equipment storage facilities and a fully executed Stormwater Management Plan with associated BMP's (Best Management Practices) designed to reduce/eliminate erosion and releases of soil or other constituents utilized in the operation to the nearby waterway, Seigler Canyon Creek.

Figure 1; Site Plan



1.2 Effects of Fire

The majority of the property burned in the Valley Fire in September 2015. Evidence of the fire due to the presence of dead trees throughout the property and the dense undergrowth which has developed following the fire.

A map illustrating evidence of fire severity is attached (**Figure 2; Fire Severity Map**).

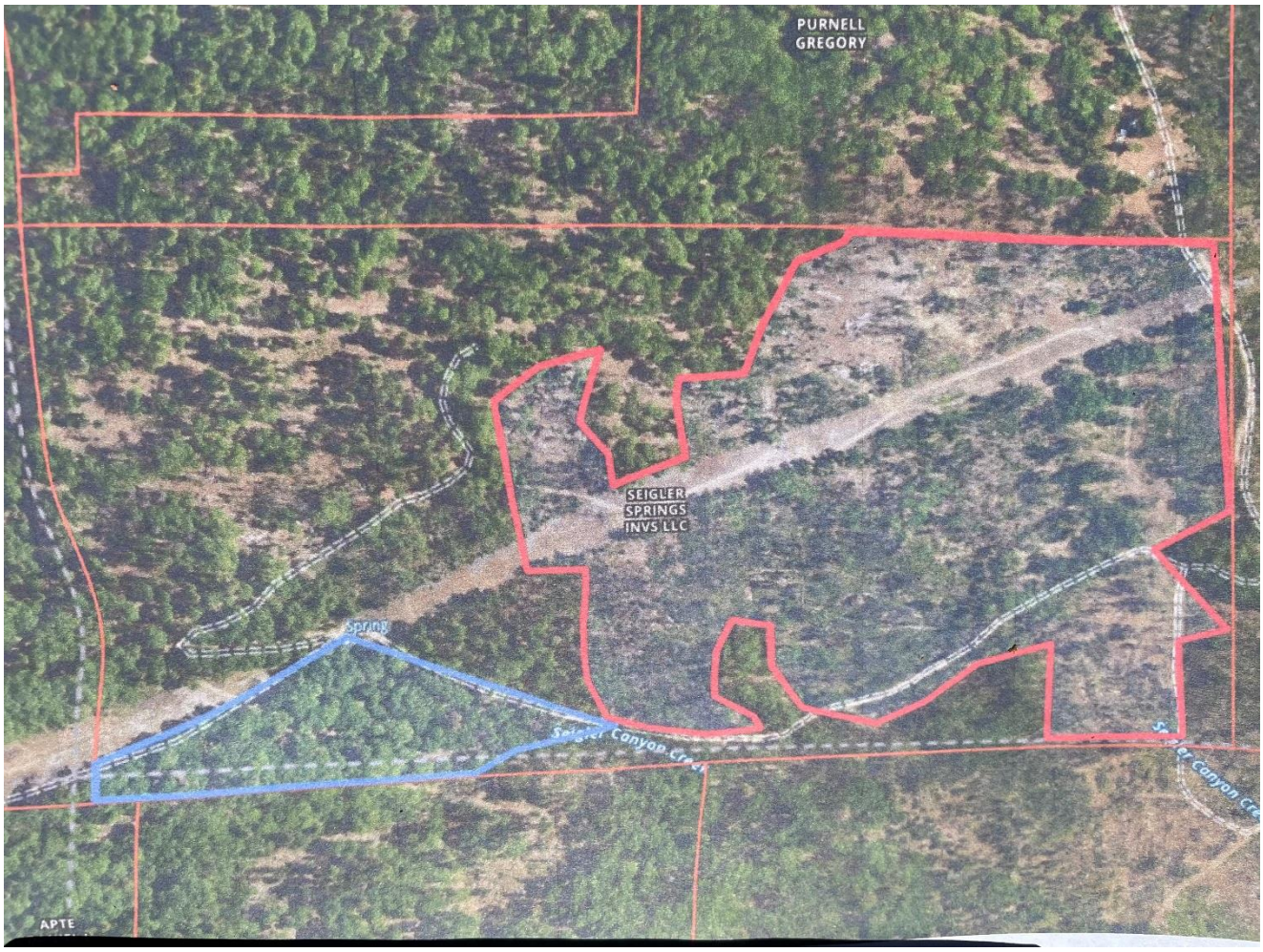


Figure 2: Fire Severity Map

Areas outlined in red illustrate high fire severity, areas where the fire consumed all available fuel with high mortality of vegetation in this area. As a result, this area is typified by a shift in species composition from black oak (Quercus kelloggii) to grasses and forbs mixed with shrubs. Some individual trees survived but are few and some are snags with basal (root) sprouting. This area totals 38.14 acres in size.

The area outlined in blue is only area on the property that did not burn in the fire. All remaining areas not outlined experienced low to moderate fire severity resulting in varying

levels of tree mortality and growth of sparse to dense understory brush growth depending on the level of overstory/tree density. This area is 5.96 acres in size out of a total for Black Oak Woodland of 60 acres.

The local permitting agency is requesting completion of a biological assessment on the property as part of the California Environmental Quality Act (CEQA) review required for new development. The initial phase of this assessment evaluates the potential of the property to contain sensitive plants or sensitive wildlife habitat through database searches of CNPS (California Native Plant Society) and CNDDB (CA Dept of Fish and Wildlife CA Natural Diversity Database). The second phase consists of field surveys, including a botanical survey listing all plant taxa and suitable habitat for sensitive wildlife species identified from a CNDDB search. The biological resource assessment will determine whether the property contains sensitive plants or wildlife requiring mitigation under the California Environmental Quality Act (CEQA). As used here, the terms sensitive plant/wildlife includes all state or federal rare, threatened, or endangered species as well as CA Native Plant Society plant status designations. This includes all species listed in the California Natural Diversity Database (CNDDB) list of "Special Vascular Plants, Bryophytes, and Lichens List", April 2021.

1.3 The site is located at 11615 North Seigler Springs Road, 7.5 miles west of Lower Lake and 16 miles NW of Middletown, CA. A location map is provided in **Figure 3**.

Figure 3: Location

2.0 ASSESSMENT METHODOLOGY

The basis of the biological resource assessment is a comparison of existing habitat conditions within the project boundaries to the geographic range and habitat requirements of sensitive plants and wildlife. It includes all sensitive species that occupy habitats similar to those found in the project area and whose known geographic ranges encompass it. The approach is conservative in that it tends to over-estimate the actual number of species present. The analysis includes the following site characteristics:

- Location of the project area with regard to the geographic range of sensitive plantand wildlife species
- Location(s) of known populations of sensitive plant and wildlife species as mappedin the California Natural Diversity Database (CNDDB)
- Soils of the project area
- Elevation
- Presence or absence of special features such as vernal pools and serpentine soils
- Plant communities existing within the project area

In addition to knowledge of the local plants and wildlife, the following computer databases were used to analyze the suitability of the site for sensitive species:

- California Department of Fish and Wildlife (CDFW), *California Natural DiversityDatabase (CNDDB)*; RareFind 5, 2021
- California Native Plant Society's (CNPS) *Electronic Inventory of Rare and Endangered Vascular Plants of California* (v9-01 0.0)
- California Department of Fish and Wildlife, *California Wildlife Habitat RelationshipsSystem (CWHR Version 9.0)*

The CNDDB and RareFind 5 databases consist of maps and records of all known populations of sensitive plants and wildlife in California. This data is continually updated by the CDFW with new sensitive species population data.

The CNPS database produces a list of sensitive plants potentially occurring at a site based on the various site characteristics listed above. While use of the CNPS inventory does not in itself eliminate the need for an in-season botanical survey, it can, when used in conjunction with other information, provide a very good indication of thesuitability of a site as habitat for sensitive plant species.

The CWHR database operates on the same basis as the CNPS inventory. Input includes geographic area, plant community (including development stage), soil structure, and special features such as presence of water, snags, cover, and food (fruit, seeds, insects,etc.).

[1] Many sensitive plants and wildlife are subspecies or varieties which are taxonomic subcategories of species. The term "taxa" refers to species and their sub-specific categories.

2.1 Botanical Survey Methods: An in-season botanical survey was conductedfor the project site. The CNDDB report and maps for the Lower Lake, CA quadrangle were referenced prior to the survey. Vegetation communities were identified based on the nomenclature of *A Manual of California Vegetation* (Sawyer, Keeler-Wolf, andEvens, 2009), and mapped on a 1"=600' aerial photo (due to the large size of the survey area). Vegetation type names are based on an assessment of dominant cover species.

Plants occurring on the site were identified using *The Jepson Manual, Higher Plants of California,* 2012. Where necessary, species names were updated based on the 6th edition, *CNPS Inventory of Rare and Endangered Plants of California*. A map of the vegetation types at the site is provided in **Figure 4.**

2.2 Survey Dates: Site visits for the plant surveys and vegetation mapping were conducted on May 11, 17, and June 10,11, 2021.

2.3 Biological Assessment Staff: The field surveys, plant taxonomy, and vegetation mapping, were conducted by Lawrence Ray principal biologist. Mr. Ray has a Master of Science Degree in Ecology from the Antioch University/UC Berkeley and a Bachelor of Science Degree in Environmental Studies from the Antioch University. He hasover 35 years of experience as a biologist in the government and private sectors. Support staff was provided by Austin Ray who holds an AA Degree in Horticulture from Cabrillo College.

SITE CHARACTERISTICS

3.0 Site Topography and Drainage: The parcel occupies sloping (5-50%) topography with an average elevation of 2,683 (mean sea level). Drainage from the surrounding slopes is to Seigler Canyon Creek which is drains along the south to Cache Creek at Dam Road and Hwy 53. Topography is shown in **Figure 1.**

3.1 Soils: Based on the *Soil Surveys of Lake County and Mendocino County (Eastern Part), California* prepared by the U.S. Resource Conservation Service, the survey area contains the following soil types:

127-Collayomi-Aiken-Whispering complex, 5 to 30percent slopes. This map unit is on mountains. The vegetation is mainly conifers and oaks. Elevation is 1,400 to 4,000 feet. The average annual precipitation is 35 to 60 inches, the average annual air temperature is 50 to 55 degrees F, and the average frost-free period is 130 to 180 days.

This unit is about 35 percent Collayomi very gravelly loam, 35 percent Aiken loam, and 15 percent Whisperingloam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included in this unit are small areas of Rock outcrop near ridges. Also included are small areas of Aiken, Collayomi, and Whispering soils that have slopes of more than 30 percent. Included areas make up about 15 percent of the total acreage. The percentage varies fromone area to another.

The Collayomi soil is very deep and well drained. It formed in material weathered from andesite, basalt, or dacite. Typically, about 5 percent of the surface is covered with stones and boulders. The surface layer is light brown very gravelly loam 15 inches thick. The upper35 inches of the subsoil is light brown and reddish yellowvery gravelly loam, and the lower 10 inches is light reddish brown extremely gravelly loam. Permeability of the Collayomi soil is moderate.

Available water capacity is 2.5 to 4.5 inches. Effectiverooting depth is 60 inches or more. Surface runoff is rapid, and the hazard of erosion is moderate.

128-Collayoml-Aiken-Whlsperlng complex, 30 to 50 percent slopes. This map unit is on mountains. Thevegetation is mainly conifers and oaks. Elevation is 1,400 to 4,000 feet. The average annual precipitation is 35 to 60 inches, the average annual air temperature is 50 to 55 degrees F, and the average frost-free period is130 to 180 days.

This unit is about 40 percent Collayomi very gravelly loam, 35 percent Aiken loam, and 15 percent Whispering boom The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included in this unit are small areas of Aiken and Whispering soils that have slopes of less than 30 percent. Also included are small areas of soils that are similar to the Collayomi soil but have more clay in the subsoil. Included areas make up about 10 percent of thetotal acreage. The percentage varies from one area to another.

The Collayomi soil is very deep and well drained. It formed in material weathered from andesite, basalt, or dacite. Typically, 5 percent of the surface is covered withstones and boulders. The surface layer is light brown very gravelly loam 15 inches thick. The upper 35 inches of the subsoil is light brown and reddish yellow very gravelly loam, and the lower 1O inches is light reddish brown extremely gravelly loam.

Permeability of the Collayomi soil is moderate. Available water capacity is 2.5 to 4.5 inches. Effectiverooting depth is 60 inches or more. Surface runoff is rapid, and the hazard of erosion is moderate.

142-Henneke-Montara-Rock outcrop complex, 15to 50 percent slopes. This map unit is on hills and mountains. The vegetation is mainly brush, scattered conifers, and sparse annual grasses. Elevation is 640 to3,000 feet. The average annual precipitation is 25 to 40 inches, the average annual air temperature is 55 to 60 degrees F, and the average frost-free period is 160 to 205 days.

This unit is about 40 percent Henneke gravelly loam,30 percent Montara clay loam, and 15 percent Rock outcrop. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included in this unit are small areas of Dubakella, Maxwell, Millsholm, and Okiota soils. Also included are small areas of clayey soils that are 20 to 40 inches deepto bedrock, clayey soils that develop deep wide cracks when dry and are 20 to 40 inches

deep to bedrock, Henneke and Montara soils that have slopes of 50 to 75percent, and soils that are similar to the Henneke and Montara soils but are 20 to 40 inches deep to bedrock or are cooler. Included areas make up about 15 percent of the total acreage. The percentage varies from one area to another.

The Henneke soil is shallow and somewhat excessively drained. It formed in material weathered from serpentinitic rock. Typically, about 50 percent of the surface is covered with a pavement of stones, cobbles, and pebbles. The surface layer is reddish brown gravelly loam 3 inches thick. The upper 8 inches of the subsoil is reddish brown gravelly clay loam, and the lower 8 inches is dark reddish brown very gravelly clay. Fractured serpentinite is at a depth of 19 inches.

Permeability of the Henneke soil is moderately slow. Available water capacity is 1 inch to 2 inches. Effective rooting depth is 1O to 20 inches. Surface runoff is rapid,and the hazard of erosion is severe. Calcium to magnesium ratio is less than 1.

The Montara soil is shallow and well drained. It formedin material weathered from serpentinitic rock. Typically, the soil is grayish brown clay loam 12 inches thick over hard, fractured serpentinite.

Permeability of the Montara soil is moderately slow. Available water capacity is 1 inch to 4 inches. Effectiverooting depth is 8 to 20 inches. Surface runoff is rapid, and the hazard of erosion is severe. Calcium to magnesium ratio is less than 1.

Rock outcrop consists of hard, fractured serpentiniticrock. It occurs as small masses of intruding bedrock oras detached stones and boulders on the land surface. Areas of Rock outcrop are 50 feet to 1 acre in size.

This unit is used mainly as wildlife habitat andwatershed.

The natural vegetation on this unit is mainly brush because of the limited soil depth and the restricted available water capacity. The vegetation in most areas is mainly chamise, manzanita, buckbrush, and Digger pine. Properly planned and applied prescribed burning or chemical or mechanical treatment can be used in small areas to improve habitat for wildlife, increase access, and reduce the risk of fire.

148-Kldd-Forward complex, 5 to 30 percent slopes. This map unit is on hills and mountains. The vegetation is mainly brush and scattered conifers on the Kidd soil and hardwoods and conifers with an understoryof shrubs on the Forward soil. Elevation is 1,500 to 3,000 feet. The average annual precipitation is 35 to 50 inches, the average annual air temperature is 51 to 55 degrees F, and the average frost-free period is 150 to 185 days.

This unit is about 60 percent Kidd gravelly loam and 20 percent Forward loam. The components of this unit are so intricately intermingled that it was not practical tomap them separately at the scale used.

Included in this unit are small areas of Aiken soils and Rock outcrop. The areas of Rock outcrop occur as escarpments. Also included are small areas of Forward and Kidd soils that have slopes of more than 30 percent;soils that are similar to the Forward soil but have a clayey subsoil; soils that are similar to the Forward and Kidd soils, near Kelseyville and Clearlake Highlands, but have warmer soil temperatures, are sandy loam or loamysand throughout the profile, and have rapid permeability; and soils that are more than 60 inches deep. Included areas make up about 20 percent of the total acreage. The percentage varies from one area to another.

The Kidd soil is shallow and somewhat excessivelydrained. It formed in material weathered from rhyolitic tuff. Typically, the surface layer is light gray gravelly loam9 inches thick. The subsoil is very pale brown gravelly loam 7 inches thick. Rhyolitic tuff is at a depth of 16 inches.

Permeability of the Kidd soil is moderately rapid. Available water capacity is 1 inch to 3 inches. Effectiverooting depth is 12 to 20 inches. Surface runoff is medium, and the hazard of erosion is moderate.

The Forward soil is moderately deep and well drained.
It formed in material weathered from rhyolitic tuff. Typically, the surface layer is light gray loam 9 inches thick. The subsoil is light gray gravelly loam 16 inchesthick. Rhyolitic tuff is at a depth of 25 inches.
Permeability of the Forward soil is moderately rapid.Available water capacity is 2 to 6 inches. Effective rooting depth is 20 to 40 inches. Surface runoff is medium, and the hazard of erosion is severe.
This unit is used mainly as wildlife habitat and watershed. It is also used for firewood production, timberproduction, and homesite development.
Estimates of the site index and yield for the Kidd soilhave not been made because the vegetation is mainly brush.
Ponderosa pine, Douglas-fir, and sugar pine are the main tree species on the Forward soil. On the basis of a 100-year site curve, the mean site index is 102 for ponderosa pine and 97 for Douglas-fir. The potential annual production of ponderosa pine is 390 board feet per acre from a fully stocked stand of trees. Estimates ofthe site index and yield for sugar pine have not been made. Among the trees of limited extent are knobcone pine in areas that have been repeatedly burned, tanoak, California black oak, Pacific madrone, and interior live oak.

247-Wolfcreek loam. This very deep, well-drained soil is on flood plains. It formed in alluvium derived from mixed rock sources. Slope is 0 to 2 percent. The vegetation is mainly annual grasses and forbs. Elevation is 1,300 to 2,600 feet. The average annual precipitation is 25 to 40 inches, the average annual air temperature is55 to 59 degrees F, and the average frost-free period is 150 to 205 days.
Typically, the surface layer is pale brown loam 7 inches thick. The upper 39 inches of the underlying material is brown clay loam and sandy clay loam, andthe lower part to a depth of 72 inches is brown very gravelly sandy clay loam.
Included in this unit are small areas of Still soils. Alsoincluded are small areas of soils that are gravelly sandyloam throughout the profile. Included areas make up about 15 percent of the total acreage. The percentage varies from one area to another.
Permeability of this Wolfcreek soil is moderately slow. Available water capacity is 7.5 to 10.0 inches. Effective rooting depth is 60 inches or more. Surface runoff is veryslow, and the hazard of erosion is slight. This soil is subject to rare periods of flooding during prolonged, high-intensity storms.
This unit is used mainly for livestock grazing and hayand pasture. It is also used for homesite development.
The production of forage is limited by the susceptibilityof the soil in this unit to compaction when moist. Grazingshould be delayed until the soil has drained sufficiently to withstand trampling by livestock. This unit responds well to fertilizer, rangeland seeding, and proper grazing use. The characteristic plant community is mainly soft chess, filaree, and burclover.
This unit is well suited to hay and pasture.
If this unit is used for homesite development, the mainlimitations are moderately slow permeability and the hazard of flooding. Increasing the size of the septic tank absorption fields can help to compensate for the moderately slow permeability. Dikes and channels that have outlets for floodwater can be used to protect buildings and onsite sewage disposal systems from flooding. Roads and streets should be located above theexpected flood level.
This map unit is in capability class I (14), irrigated, andcapability unit IIIc-1 (14), non-irrigated.

A map of site soils is included **as Figure 4.**

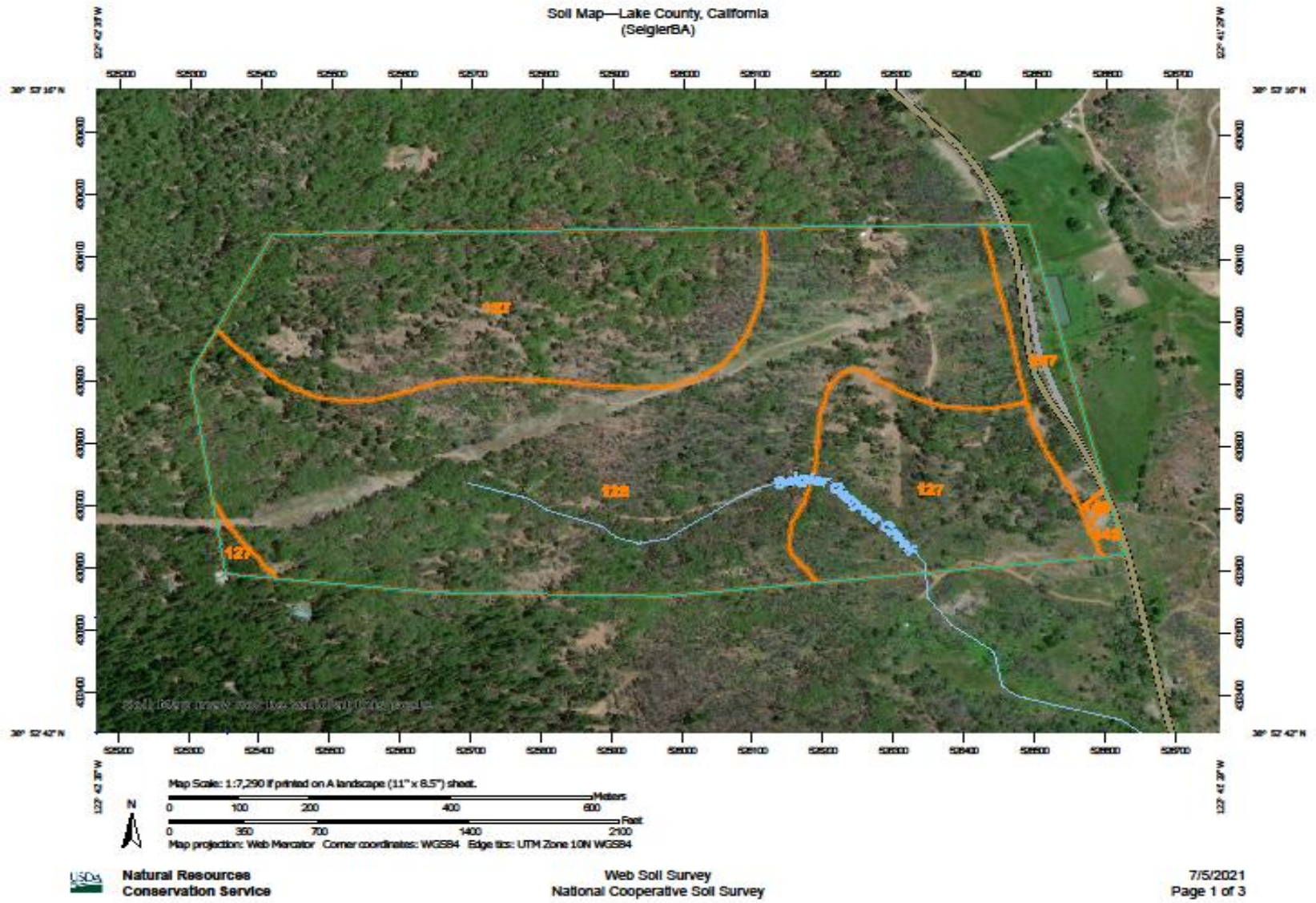


Figure 4- Site Soils Map

3.2 Vegetation Types: This project contains five distinct plant communities or vegetation types based on or derived from the "Standardized Classification" scheme described in the California Native Plant Society (CNPS) *A Manual of California Vegetation*. These vegetation types and other cover types are listed in **Table 1.** They are described below and shown in the vegetation map provided in **Figure 5.**

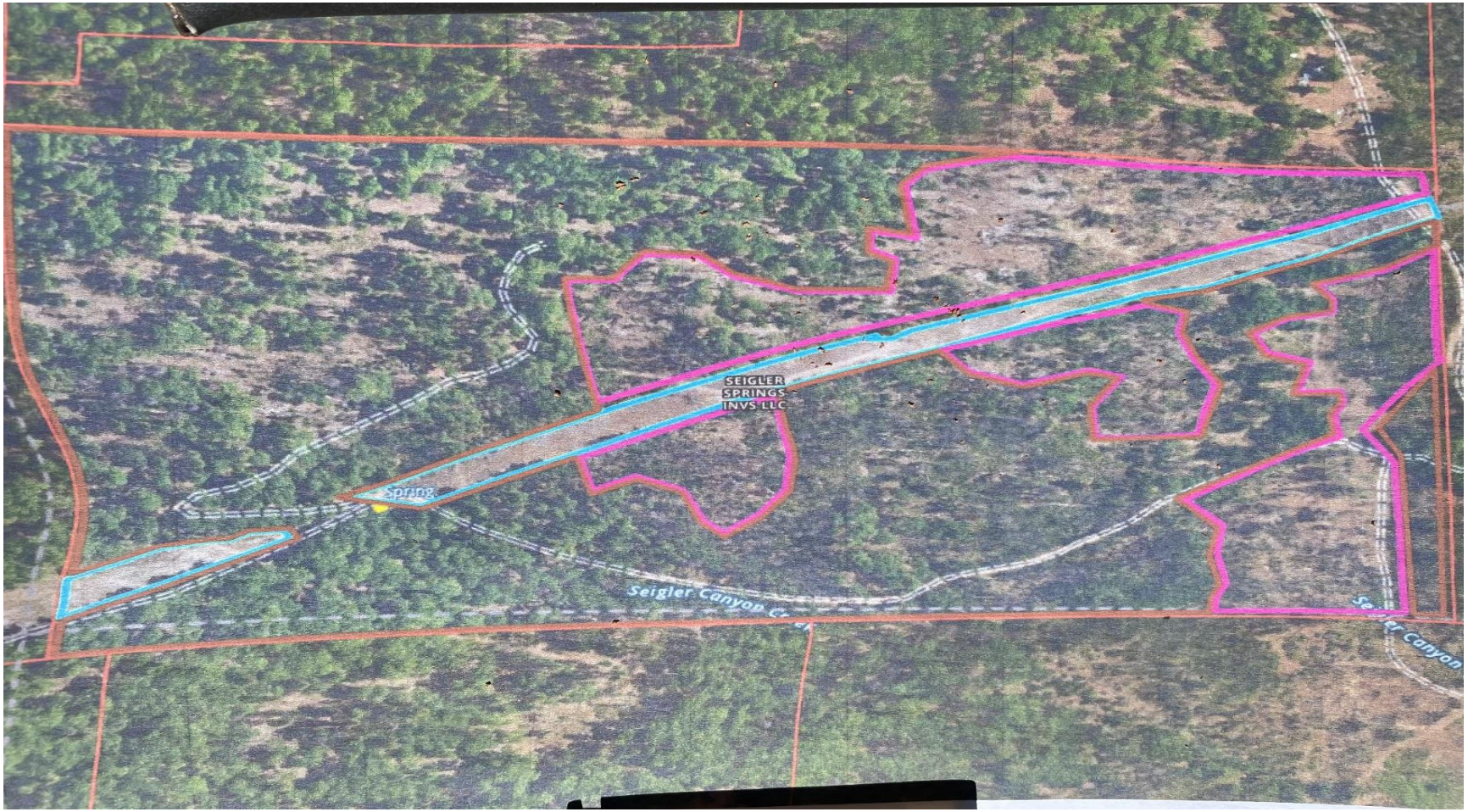


Figure 5- Vegetation Map

Red= Shrubs Blue = Grasses and forbs Brown= black oak woodlands Yellow= Spring

Table 1- Plant Communities/Alliances

COVER TYPE	Total Acres of Cover Type on Property	Percent of Property Supporting Cover Type
Ceanothus integerrimus Shrubland Alliance; Deer brush chaparral	20.29	24
Bromus rubens- Semi-natural Herbaceous stands; Red brome grasslands	4.26	5
Quercus kelloggii Forest Alliance- CA black oak forest	60.0	71
Total	**84.55**	**100.00**

1.Ceanothus integerrimus Shrubland Alliance/Deer brush chaparral

Ceanothus integerimus is dominant in the shrub canopy with Arctostaphylos manzanita, A. patula, Ceanothus cordulatus, C. cuneatus, C. velutinus, Holodiscus discolor, Lotus crassifolius, Prunus emarginata, Quercus berberidifolia and Symphoricarpos mollis.

Emergent trees may be present, including Pinus ponderosa, Q chrysolepis and Q wislizeni, at low cover. Shrubs <4 meters; canopy is continuous or intermittent. Herbaceous layer is sparse to intermittent. **Habitats:** Ridges and upper slopes. Soils are well drained. **Elevation** 300-2100m.

2. Bromus rubens Semi-natural Herbaceous Stands

Bromus rubens Schismus barbatus or S. arabicus is dominant or co-dominant with other non-natives in in the herbaceous layer. Emergent shrubs may be present at low cover. Herbs < 75 cm; cover is intermittent to continuous. **Habitats**: All topography settings and soil textures. The USFWS wetlands inventory recognizes Bromus rubens as an UPL plant. **Elevation**: 0-2200m.

3. Quercus kelloggii Forest Alliance- CA black oak forest**.**Quercus kelloggii is dominant or co-dominant in the tree canopy with Abies concolor, Arbutus menziesii, Calocedrus decurrens, Pinus attenuate, P. ponderosa, Pseudotsuga menziesii, Quercus agrifolia, Q. chrysolepis, Q garryana, Q lobate and Umbellularia californica. Trees <40m; canopy is open to continuous, or savanna-like. Shrub layer is open to intermittent. Herbaceous layer is sparse or grassy. **Habitats**: All aspects and topographic settings. Soils are moderately to excessively drained. **Elevation**: 60-2500m.

4.0 PRE-SURVEY RESEARCH RESULTS

4.1 **CNPS On-Line Electronic Inventory Analysis:** A California Native Plant Society (CNPS) analysis was conducted for all plants with federal and state regulatory status, and all non-status plants on the CNPS Lists 1B through 4. The query included all plants within this area of the county occurring within the plant communities identifiedon the project site. The inventory lists species potentially occurring at the site; these are listed in **Table 2**. These species were included in the list of potentially sensitive species specifically searched for during field surveys. It is important to note that this list includes species for which appropriate habitat is not present on the parcel. The CNPS database search does not allow fine tuning for specific soil types and many specific habitats.

Note: *The CNPS list is used to broaden the list of sensitive species considered during thesubsequent field surveys; however, it must be used with discretion because the database search does not allow fine-tuning for specific soil types or for many specific habitats required by sensitive plant taxa. Consequently, the CNPS list generated for a site may include several taxa for which the required habitat is not present.*

4.2 California Natural Diversity Database: The California Natural Diversity Database (CNDDB) and CDFW RareFind 5 data and maps for the Whispering Pines, Clearlake Highlands, Lower Lake and Middletown 7½' quadrangles were reviewed for this project. **Table 3** presents a list of sensitive plant and wildlife species known to occur within this quadrangle. In addition to listing the species present within the quadrangle, the table provides a brief descriptor ofthe habitat requirements and blooming season, along with an assessment of whether the project area contains the necessary habitat requirements for each species.

TABLE 2. CALIFORNIA NATIVE PLANT SOCIETY'S INVENTORY OF RARE AND ENDANGERED PLANTS

Selected CNPS Plants by Scientific Name

Seigler Springs Cultivation

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	1B.2	None	None	Mar-Jun	Coastal bluff scrub, Cismontane woodland, Valley and foothill grassland
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	Ericaceae	perennial evergreen shrub	1B.3	None	None	(Jan)Mar-May(Jul)	Chaparral, Cismontane woodland, Lower montane coniferous forest; volcanic
Astragalus breweri	Brewer's milk-vetch	Fabaceae	annual herb	4.2	None	None	Apr-Jun	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland (open, often gravelly); often serpentinite, volcanic
Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	Convolvulaceae	perennial rhizomatous herb	4.2	None	None	Apr-Jun	Chaparral, Lower montane coniferous forest, Valley and foothill grassland; serpentinite
Ceanothus confusus	Rincon Ridge ceanothus	Rhamnaceae	perennial evergreen shrub	1B.1	None	None	Feb-Jun	Closed-cone coniferous forest, Chaparral, Cismontane woodland; volcanic or serpentinite

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat
Clarkia gracilis ssp. tracyi	Tracy's clarkia	Onagraceae	annual herb	4.2	None	None	Apr-Jul	Chaparral (openings, usually serpentinite)
Collomia diversifolia	serpentine collomia	Polemoniaceae	annual herb	4.3	None	None	May-Jun	Chaparral, Cismontane woodland serpentinite, rocky or gravelly
Cryptantha dissita	serpentine cryptantha	Boraginaceae	annual herb	1B.2	None	None	Apr-Jun	Chaparral (serpentinite)
Eryngium constancei	Loch Lomond button celery		Annual herb	1B.1	endangered	endangered		Vernal pool, wetland
Fritillaria purdyi	Purdy's fritillary	Liliaceae	perennial bulbiferous herb	4.3	None	None	Mar-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest; usually serpentinite
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	1B.2	**CE**	None	Apr-Aug	Marshes and swamps (lake margins), Vernal pools; clay
Hesperolinon adenophyllum	glandular western flax	Linaceae	annual herb	1B.2	None	None	May-Aug	Chaparral, Cismontane woodland, Valley and foothill grassland; usually serpentinite
Horkelia bolanderi	Bolander's horkelia	Rosaceae	perennial herb	1B.2	None	None	(May)Jun-Aug	Chaparral, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland; edges, vernally mesic areas
Lasthenia burkei	Burke's goldfields		Annual herb	1B.1	endangered	endangered		Meadow, seeps, vernal pool, wetland
Layia septentrionalis	Colusa layia	Asteraceae	annual herb	1B.2	None	None	Apr-May	Chaparral, Cismontane woodland, Valley and foothill grassland; sandy, serpentinite
Lilium rubescens	redwood lily	Liliaceae	perennial bulbiferous herb	4.2	None	None	Apr-Aug(Sep)	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest. Sometimes serpentinite, sometimes roadsides
Monardella viridis	green monardella	Lamiaceae	perennial rhizomatous herb	4.3	None	None	Jun-Sep	Broadleafed upland forest, Chaparral, Cismontane woodland

Streptanthus glandulosus ssp. hoffmanii	Hoffman's bristly jewelflower	Brassicaceae	annual herb	1B.3	None	None	Mar-Jul	Chaparral, Cismontane woodland, Valley and foothill grassland (often serpentinite); rocky
Streptanthus hesperidis	green jewelflower	Brassicaceae	annual herb	1B.2	None	None	May-Jul	Chaparral (openings), Cismontane woodland; serpentinite, rocky
Tracyina rostrata	beaked tracyina	Asteraceae	annual herb	1B.2	None	None	May-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	None	None	May-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest

KEY FOR TABLE 2:

CNPS Rare Plant-Threat Rank Definitions:

1B.1 = Rare, threatened, or endangered in California and elsewhere; seriously threatened in California 1B.2 = Rare, threatened, or endangered in California and elsewhere; moderately threatened in California1B.3 = Rare, threatened, or endangered in California and elsewhere; not very threatened in California 2A = Presumed extinct in California, but extant elsewhere

2B.1 = Rare, threatened, or endangered in Calif., but more common elsewhere; seriously threatened in Calif. 2B.2 = Rare, threatened, or endangered in Calif., but more common elsewhere; moderately threatened in Calif.2B.3 = Rare, threatened, or endangered in Calif., but more common elsewhere; not very threatened in Calif.

3 = Plants about which we need more information (Review List)

3.1 = Plants about which we need more information (Review List); seriously threatened in California

3.2 = Plants about which we need more information (Review List); moderately threatened in California

3.3 = Plants about which we need more information (Review List); not very threatened in California

4.1 = Plants of limited distribution (watch list); seriously threatened in California

4.2 = Plants of limited distribution (watch list); moderately threatened in California

4.3 = Plants of limited distribution (watch list); not very threatened in California

State and Federal Status:

CESA = California Endangered Species ActFESA = Federal Endangered Species Act

SR	*= State. Rare*	*SE*	*= State Endangered.*
ST	*= State. Threatened*	*SD*	*= State Delisted*
SSC	*= CDFW Species of Special Concern*	*FP*	*= CDFW Fully Protected*
WL	*= CDFW Watch List*	*FE*	*= Federal Endangered*
FT	*= Federal Threatened*	*FD*	*= Federal Delisted*

TABLE 3. CNDDB SENSITIVE PLANT AND WILDLIFE SPECIES WITHIN THE LOWER LAKE AND ADJACENTCALIFORNIA 7½' QUADRANGLES

Habitat Type	Habitat Present
Northern Interior Cypress Forest	No
Serpentine Bunchgrass	No

Plant Species	Common Name	Habitat Requirements/ Fed-State-CNPS* Status	Blooming Season/Form	Habitat Present
Amsinckia lunaris	bent-flowered fiddleneck	Coastal bluff scrub, cismontane woodland, valley & foothill grassland; --/--/1B.2	March-June ann. herb	Habitat present but not found during surveys
Antirrhinum virga	twig-like snapdragon	Chaparral, lower montane coniferous forest,/rocky, openings, often serpentinite; --/--/4.3	June-July per. herb	Poor habitat present
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	Chaparral, cismontane woodland, lower montane conif. forest/volcanic; --/--/1B.3	March-May everg. shrub	Poor habitat present
Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	Chaparral, lower montane coniferous forest/rocky, often serpentine; --/--/1B.1	Feb.-April ann. herb	Poor habitat present
Astragalus breweri	Brewer's milk-vetch	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland (open, often gravelly)/often serpentinite, volcanic; --/--/4.2	April-June ann. herb	Poor habitat present
Brasenia schreiberi	watershield	Marshes & swamps/freshwater; --/--/2B.3	March-Sept rhizom. herb	Habitat not present
Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	Chaparral, lower montane conif. forest, valley & foothill grassland/serpentinite; --/--/4.2	April-June rhizom. herb	Habitat not present
Carex comosa	bristly sedge	Coastal prairie, marshes and swamps (lake margins), valley and foothill grassland; --/--/2B.1	May-Sept. per. rhizom. herb	Habitat not present
Ceanothus confusus	Rincon ridge ceanothus	Closed cone conif. forest, chaparral, cismontane woodland/volcanic; --/--/1B.1	Feb.-April everg. shrub	Poor habitat present
Clarkia gracilis ssp. tracyi	Tracy's clarkia	Chaparral (openings, usually serpentinite); --/--/4.2	April-June ann. herb	Habitat not present
Collomia diversifolia	serpentine collomia	Chaparral, cismontane woodland/serpentinite, rocky or gravelly; --/--/4.3	May-June ann. herb	Habitat not present
Cryptantha dissita	serpentine cryptantha	Chaparral/serpentine outcrops; --/--/1B.2	April-June ann. herb	Habitat not present

Plant Species	Common Name	Habitat Requirements/ Fed-State-CNPS* Status	Blooming Season/Form	Habitat Present
Eryngium constancei	Loch Lomond button-celery	Vernal pools, wetlands	April-June	Habitat not present
Fritillaria purdyi	Purdy's fritillary	Chaparral, cismontane woodland, lower montane coniferous forest; usually serpentinite; --/--/4.3	March-June bulb. herb	Habitat not present
Gratiola heterosepala	Boggs Lake hedge-hyssop	Freshwater marsh, marshes & swamps (freshwater), vernal pools, sometimes lake margins/clay; --/SE/1B.2	April-Aug. ann. herb	Habitat not present
Hesperolinon didymocarpum	Lake County western flax	Chaparral, cismontane woodland, valley & foothill grassland/usually serpentine chaparral; --/SE/1B.2	May-Aug. ann. herb	Habitat not present
Horkelia bolanderi	Bolander's horkelia	Lower montane conif. forest, chaparral, meadows & seeps, valley & foothill grassland/grassy margins of vernal pools and meadows; --/ --/1B.2	June-Aug. per. herb	Habitat present but not found during surveys
Lasthenia burkei	Burke's goldenfields	Meadows, seeps, vernal pools, wetlands	April-August	Habitat not present
Layia septentrionalis	Colusa layia	Chaparral, cismontane woodland, valley & foothill grassland/sandy or serpentine; --/--/1B.2	April-May ann. herb	Habitat present, not found
Leptosiphon acicularis	bristly leptisiphon	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; --/--/4.2	April-July ann. herb	Habitat present but not found during surveys
Monardella viridis	green monardella	Broadleaved upland forest, chaparral, cismontane woodland; --/--/4.3	June-Sept. rhizom. herb	Habitat present but not found during surveys
Navarretia leucocephala ssp pauciflora	Few-flowered navarretia	Vernal pools, wetlands FE/ST/1B.1	April-May ann. herb	No habitat present
Navarretia leucocephala ssp plieantha	Many-flowered navarretia	vernal pools, wetlands FE/SE/1B.2	April-May ann. herb (aquatic)	Habitat not present
Orcuttia tenuis	Slender Orcutt grass	Vernal pools, wetlands	April-May	Habitat not present
Sidalcea keckii	Keck's checkerbloom	Chaparral, cismontane woodland, coastal prairie,valley and foothill grassland;Endangered/1B1/	April-May annual herb	Poor habitat not found
Sedella leiocarpa	Lake County stonecrop	cismontane woodland, valley and foothill grassland/vernal pool/wetland FE/SE/1B.1	March-July ann. herb	Habitat not present

Plant Species	Common Name	Habitat Requirements/ Fed-State-CNPS* Status	Blooming Season/Form	Habitat Present
Viburnum ellipticum	oval-leaved viburnum	Chaparral, cismontane woodland, lower montane coniferous forest; --/--/2B.3	May-June decid. shrub	Habitat present but not found during surveys

*See CNPS list for key

Wildlife Species	Common Name	Habitat Requirements, Status	Season Present	Habitat Present
Bombus occidentalis	western bumblebee	Once common in the western U.S., these bees are important pollinators of both wild plants and crops. Threats to be bee include insecticides, loss of habitat, climate change and diseases from commercial bee rearing. G4/S1	year-round	Habitat may be present
Bombus caliginosus	obscure bumble bee	A black and yellow bee found in California, Oregon, Washington. Food plant genera: Baccharis, Cirsium, Lupinus, Lotus, Grindelia, Phacelia; G3G4/CA-SNR	year-round	Poor habitat present
Taricha rivularis	red-bellied newt	Occurs near high to moderate gradient streams and rivers, riffles, pools. Burrows in soil or debris near water, emerges during fall rains to water to breed; G4/SNR	year-round	No Habitat present
Rana boylii	foothill yellow-legged frog	Riparian/aquatic: partly-shaded, shallow streams & riffles with a rocky substrate in variety of habitats; SSC/SCT/G3/S2S3	year-round	No Habitat present
Emys marmorata	western pond turtle	Aquatic turtle found in ponds, lakes, rivers, creeks, marshes & irrigation ditches with abundant vegetation and rocky or muddy bottoms; In woodland, forest, & grasslands; SSC/G3G4/S3	year-round	No Habitat present
Elanus leucurus	white-tailed kite	Open areas near woodlands and water; SFP/G5/S3	year-round	Habitat is present
Circus cyaneus	northern harrier	Coastal salt and freshwater marshes, meadows, grasslands near wetlands; nests in brush on ground; SSC/G5/S3	migratory	Habitat is present
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	Riparian forest FT/SE/G4/S1	sometimes migratory	Habitat not present

Wildlife Species	Common Name	Habitat Requirements, Status	Season Present	Habitat Present
Agelaius tricolor	tricolored blackbird	Fresh emergent wetland (marshes) with cattails, tules, sedges. Largely endemic to California; SCE//G2G3/S1S2	year-round	No Habitat is present
Ammodramus savannarum	grasshopper sparrow	Prefers open grassland habitats with patches of bare ground and shrubby vegetation. Breeds in various types of grassland vegetation. Eats insects, grain, and seeds on the ground; SSC/G5/S3	sometimes migratory	Habitat is present, not found
Corynorhinus townsendii	Townsend's big-eared bat	Roosts in open near relatively mesic sites, mainly montane forest habitats; SSC/G3/S2	local migrant	Habitat is present, not found
Antrozous pallidus	pallid bat	Open, dry habitats, forest habitats, in caves, tunnels, buildings, bridges; sensitive to human disturbance; SSC/G5/S3	local migrant	Habitat is present, not found
Marles caurina humboldtensis	Humboldt marten	No. Coast conifer forest: old-growth conifers; cavities, snags, logs,;FT/SE/G5/S1	year-round	Poor habitat present
Taxidea taxus	American badger	Dryer open stages of shrub, forest, & herbaceous habitats. Needs friable soils for burrows and open uncultivated ground; SSC/G5/S3	year-round	Habitat is present, not found
Erethizon dorsatum	North American porcupine	Occurs in a wide variety of coniferous and mixed woodland habitats in Sierra Nevada, Cascade, and Coast Ranges/ uses fallen and standing dead trees as cover; G5/S3	year-round	Habitat present, not found

KEY FOR TABLE 3: State and Federal:

SE/ST/SD=State Endangered/Threatened/Delisted

SC/SCD=State Candidate for Listing/Delisting

SSC=CDFW Species of Special Concern

SFP=CDFW Fully Protected

WL=CDFW Watch List

FE/FT/FD=Federal Endangered/Threatened/Delisted
FPE/FPT/FPD/FP=Federal Proposed Endangered/Threatened/Delisting

FC=Federal Candidate

NatureServe Conservation Status:

G1/S1 = Global/State Critically Imperiled

G2/S2 = Global/State Imperiled

G3/S3 = Global/State Vulnerable

G4/S4 = Global/State Apparently Secure

G5/S5 = Global/State Secure

SNR=Not rated

4.3 Wildlife Habitat Analysis Results: The California Wildlife Habitat Relationships analysis lists a number of native species with sensitive and non- sensitive status as potentially occurring on the site based on the geographic location and wildlife habitats present. This list is included as **Appendix B**.

4.4 Wildlife Assessment: Based on the pre-survey research conducted for this study, a total of 15 sensitive wildlife species need to be accounted for within the project area. These consist of the species identified as present within and adjacent to the Lower Lake quadrangle by the CNDDB. Accepted protocol requires that all CNDDB species in the surrounding U.S.G.S. quadrangle be discussed even through suitable habitat may not occur on the site.

- **Western bumble bee (*Bombus occidentalis*):**
  Once common in the western and northwestern U.S., these bees are important pollinators of both wild plants and crops and has been commercially reared to pollinate crops such as greenhouse tomatoes and cranberries; they also have been an important pollinator of alfalfa, avocado, apples, cherries, blackberries, and blueberry. Since 1998 populations have declined due to insecticides, loss of habitat, climate change and diseases from commercial bee rearing. This bumblebee is a generic forager and its habitat requirements are non-specific. Identification of bees is based on their sex and markings.

- **Obscure bumble bee (*Bombus oliginosus*):**
  This bumblebee is native to the west coast; in the Coast Range it inhabits meadows. It is similar in appearance and co-exists with the common *Bombus vosnesenskii* and may be mistaken for this bee. *B. oliginosus* is threatened by climate change and loss of habitat, and does not thrive in developed urban or agricultural areas. Its food sources include plant genera *Baccharis, Cirsium, Lupinus, Lotus, Grindelia*, and *Phacelia*. There is a low potential for it to occur on the property.

- **Red-bellied newt (*Taricha rivularis*):**
  This species is often found under rocks, logs, soil or duff, or in rodent burrows in coastal woodlands and redwood forests. Newts occur near high to moderate gradient streams and rivers, in riffles, and pools. Newts burrow in soil or debris near water, and emerge during fall rains to breed; and may migrate up to a mile or more between terrestrial habitat and stream breeding sites. They usually breed in flowing water, from late February through May. Appropriate habitat for newts does not occur within the streams on the project site. Streams on the surrounding slopes are short-term seasonal drainages, these drainages generally are unsuitable for this species.

- **Foothill yellow-legged frog (*Rana boylii*):**
  These frogs are relatively common along the shaded banks of perennial headwater streams. They are heavily dependent on the presence of perennial water and are seldom far from pools where they can seek shelter from predation. The larvae require three to four months to mature, making most ephemeral (seasonal) streams unsuitable as breeding sites. Burns Valley Creek may provide suitable habitat for this species. These frogs may spend dry summer months in shallows and backwaters after stream channels become dry, which do not occur in this watershed.

- **Western pond turtle (*Emys marmorata*):**
  These turtles prefer slow or ponded water with sheltering vegetation but will range widely through less suitable habitat in search of these sites. Eggs are laid on land in sheltered nests. Stream channels are often used as movement corridors between waterways or ponds. While turtles may use the stream corridor , there is no suitable habitat on this parcel for them to remain.

- **White-tailed kite (*Elanus leucurus*):**
  Usually found near agricultural areas, the kite prefers open terrain near woodlands and water. These raptors hunt over open country and prefer large, deciduous trees surrounded by expanses of grassland, meadows, farmland, and/or wetlands for nesting and roosting sites. The property contains woodlands adjacent to expanses of open grasslands with nearby water (Clearlake); this would provide marginal habitat for kites for both nesting and hunting. This is a California Fully Protected species. All raptors are protected under the Migratory Bird Treaty Act and California Department of Fish and Wildlife code.

- **Northern harrier (*Circus cyaneus hudsonius*):**
  This raptor occurs in annual grassland and is also found at high elevations. It inhabits meadows, open grasslands and rangelands, and emergent wetlands; it prefers habitat such as the broad, open grasslands and wetlands of the Sacramento Valley where this species is commonly seen. It is seldom found in wooded or agricultural areas. Formerly called the "marsh hawk", it nests on the ground in dense shrubby vegetation in and near wetlands. The harrier feeds on insects and small mammals, birds, etc., and competes with the red-tailed hawk for food. These raptors nest from April to August and have California Species of Concern status during that period. This parcel does not provide habitat for harriers.

- **Tricolored blackbird (*Agelaius tricolor*):**
  These blackbirds are colony nesters in fresh emergent wetland habitat (tule or cattail marsh), but may also occur in dense blackberry or willow shrub communities adjacent to water. Cover is required for nesting. Proximity to insects is preferred, although food includes seeds and grain. Breeding occurs April through June. The species is usually readily observed when present and has a distinctive call. This site does not contain suitable habitat for this species.

- **Grasshopper sparrow (*Ammodramus savannarum*):**
  This sparrow is a summer resident in foothills and lowlands west of the Cascade-Sierra Nevada crest from Mendocino and Trinity counties to southern California. It occurs in dry, dense grasslands with scattered shrubs for singing perches. Grasshopper sparrows are secretive in winter. They need thick grasslands and forbs for cover, and nest in small depressions on the ground. They breed from April to mid-July. Sparrows feed primarily on insects but also eat other invertebrates, grains, and forb seeds. They search for food on the ground. They may be present in the grasslands.

- **Townsend's western big-eared bat (*Corynorhinus townsendii ssp. townsendii*):**
  This bat is a California Species of Special Concern. Physical traits include bilateral nose lumps and very large ears. The most restrictive resource required by this species is daytime roosting habitat. This bat prefers caves and mines and is easily observed when present, hanging from open surfaces in mines and caves. Less frequently it will roost in tunnels, bridges, or other human-made structures, or hollow trees. Roost sites may vary from year to year. These bats typically prefer relatively mesic (moist)habitat such as streams near woodland habitats and may travel long distances for foraging. The majority of their diet consists of moths. This species is extremely sensitive to disturbance of roosting sites: These sites are frequently abandoned after being visited by humans. This property contains a riparian corridor, however it is low quality habitat for this species.

- **Pallid bat (*Antrozous pallidus*):**
  Optimal habitat for these bats consists of open, dry habitats with rocky areas, but the bats are also found in oak savanna grasslands, and in open forest and woodlands with access to riparian and open water for feeding and drinking. Foraging occurs over open country. These bats prefer the cool summer temperatures of caves, crevices, and mines as roosting sites where they are known to wedge themselves into small spaces; they will also roost in buildings, bridges, and hollow trees. Preferred roosts are high above the ground and inaccessible to terrestrial predators, although they are occasionally found roosting on the ground underneath sacks, tarps, and other objects left by humans.

  The bats have a home range of 1 to 3 miles and are known to roost with other bat species. This species of bat does not migrate long distances between seasons. It is extremely sensitive to human disturbance of roosting sites. Populations in California have declined due to habitat destruction and use of pesticides. The project site contains oak woodlands with limited water, which may provide some habitat for this species.

- **Humboldt marten (*Martes caurina humboldtensis*):**
  Martens are found mostly in dense coniferous or deciduous habitats that include older trees and snags. Martens are mainly carnivorous, eating smaller mammals, rodents, birds, carrion, and fruits. They hunt for prey on the ground and in trees. Cover is provided by cavities in large trees, snags and logs and their nests are built in protected cavities, brush-piles or logs. Young are born between February and May. Martens are listed for a distant quad in the CNDDB near Scotts Creek, but the species has not been reported in this area since 1941. While there is little chance that they occur on this parcel.

- **American badger (*Taxidea taxus*):**
  Badgers are found mostly in drier open stages of shrub, forest, and herbaceous habitats with friable soils such as open grasslands, fields, and pastures. They are found from high alpine meadows to sea level and occur throughout the stateexcept for the northern North Coast. This species is carnivorous, eating mostly fossorial rodents; they also will eat reptiles, insects, birds, eggs, and carrion. They dig burrows in friable or sandy soil for cover and nesting, and often reuse old burrows. Breeding occurs in late summer or fall. Nests are in areas with little overstory cover, often a grass-lined den, and young are born mostly in March and April. Young become independent in 5 or 6 months. The single occurrence mapped by CNDDB within the Lakeport quadrangle is near the west boundary of the City of Lakeport onan unknown date. They would be unlikely to occur on this property.

- **North American porcupine (*Erethizon dorsatum*):**
  This large, primarily nocturnal rodent prefers conifer and hardwood forests and woodlands, but is also found in forested wetlands and chaparral. They can withstand extreme cold temperatures. Porcupines use downed logs and debris, as well as snags and tree hollows, as cover and dens. Food is vegetation including twigs, berries, roots, seeds, needles, and bark; porcupines commonly climb trees for food. The porcupine breeds from September to November or December, giving birth in the spring. Lifespan is relatively long.

  Porcupines may occur in the area and on the property. This species is listed in the CNDDB as "G5" (Global Secure) and "SNR" (Species Not Rated-California). It is therefore not a species with sensitive regulatory status although its local accounts are included in the database.

Raptors and passerines lacking sensitive regulatory status but otherwise protected under the Migratory Bird Treaty Act may also be present on the property in their sensitive status.

5.0 FIELD SURVEY RESULTS

5.1 **Botanical Field Survey Results**: **Table 4** presents the results of the botanicalsurvey for the project. Each of the sensitive plant species potentially occurring at the site and listed in Tables 2 and 3 was specifically searched for during the surveys. The surveys identified a total of 56 plant taxa on the property.

TABLE 4. Flora of 11615 N. Seigler Canyon Road

Habit	Species	Common Name	Family	Origin
forb	*Chlorogalum pomeridiaum*	Wavyleaf soap plant	Agavaceae	N
forb	*Allium serra*	jeweled onion	Alliaceae	N
forb	*Lomatium dasycarpum ssp. dasycarpum*	woolly-fruited lomatium	Apiaceae	N
forb	*Sanicula bipinnata*	Poisin sanicle	Apiaceae	N
forb	*Agoseris apargioides var apargioides*	coast dandelion	Asteraceae	N
forb	*Chamomilla suaveolens*	pineapple weed	Asteraceae	A
forb	*Centaurea solstitialis*	Yellow star thistle	Asteraceae	A
forb	*Eriogonum nedum*	Naked buckwheat	Polygonaceae	N
forb	*Eriophyllum lanatum var. lanatum*	common woolly sunflower	Asteraceae	N
forb	*Madia gracilis*	gumweed, slender tarweed	Asteraceae	N
forb	*Micropus californicus*	cottontop	Asteraceae	N
forb	*Wyethia angustifolia*	narrow-leaved mule ears	Asteraceae	N
forb	*Cynoglossum grande*	grand hound's tongue	Boraginaceae	N
forb	*Dichelostemma capitatum*	Blue dicks	Brodiaea	N
forb	*Lonicera interrupta*	Chaparral honeysuckle	Caprifoliaceae	N
forb	*Cerastium glomeratum*	mouse-ear chickweed, sticky mouse-ear	Caryophyllaceae	A

Habit	Species	Common Name	Family	Origin
forb	*Acmispon glaber*	deerweed	Fabaceae	N
forb	*Lupinus bicolor*	miniature lupine	Fabaceae	N
forb	*Trifolium hirtum*	rose clover	Fabaceae	A
forb	*Vicia americana var. americana*	American vetch	Fabaceae	N
forb	*Erodium cicutarium*	red-stem storksbill	Geraniaceae	A
forb	*Eriophyllum confertifloum*	Yellow yarrow	Asteraceae	N
forb	*Geranium dissectum*	cut-leaved geranium	Geraniaceae	A

Habit	Species	Common Name	Family	Origin
forb	*Toxicoscordion fremontii*	Fremont's death camus	Liliaceae	
forb	*Clarkia purpurea*	purple clarkia, winecup clarkia, four-spot	Onagraceae	N
forb	*Eschscholzia californica*	California poppy	Papaveraceae	N
forb	*Delphinium hesperium*	foothill larkspur	Ranunculaceae	N
forb	*Galium divaricatum*	Lamarck's bedstraw	Rubiaceae	N
forb	*Penstemon heterophyllus*	foothill penstemon	Scrophulariaceae	N

Habit	Species	Common Name	Family	Origin
grass	*Avena barbata*	slender wild oat	Poaceae	A
grass	*Briza minor*	small quaking grass	Poaceae	A
grass	*Bromus diandrus*	ripgut grass, ripgut brome	Poaceae	A
grass	*Bromus hordeaceus*	soft chess	Poaceae	A
grass	*Bromus jinermis*	smooth brome	Poaceae	A
grass	*Bromus laevipes*	woodland brome	Poaceae	N
grass	*Bromus madritensis ssp. rubens*	red brome	Poaceae	A
grass	*Elymus caput-medusae*	medusahead	Poaceae	A
grass	*Elymus glaucus ssp. glaucus*	blue wildrye	Poaceae	N
grass	*Festuca idahoensis*	Idaho fescue	Poaceae	N
shrub	*Sambucus nigra ssp. caerulea*	blue elderberry	Adoxacaceae	N
shrub	*Toxicodendron diversilobum*	poison oak	Anacardiaceae	N
shrub	*Baccharis pilularis*	coyote brush, chaparral broom	Asteraceae	N
shrub	*Symphoricarpos albus var. laevigatus*	common snowberry	Caryophyllaceae	N

Habit	Species	Common Name	Family	Origin
shrub	*Arctostaphylos manzanita ssp. manzanita*	common manzanita	Ericaceae	N
shrub	*Arctostaphylos viscida*	white-leaf manzanita	Ericaceae	N
shrub	*Eriodictyon californicum*	California yerba santa	Hydrophyllaceae	N
shrub	*Ceanothus cuneatus var. cuneatus*	buckbrush	Rhamnaceae	N
shrub	*Ceanothus integerrimus*	Deer brush	Rhamnaceae	N
shrub	*Cercocarpus betuloides var. betuloides*	birch-leaf mountain mahogany	Rosaceae	N
shrub	*Heteromeles arbutifolia*	toyon	Rosaceae	N
forb	*Iris microsiphon*	Ground iris	Iridaceae	N
tree	*Quercus kelloggii*	Black oak	Fagaceae	N
Tree	*Quercus wislizeni*	interior live oak	Fagaceae	N
Tree	*Pinus ponderosa*	Ponderosa pine	Pinaceae	N
shrub	*Sambucus nigra ssp caerulea*	Blue elderberry	Acanthaaceae	N

vine	*Calystegia occidentalis ssp. occidentalis*	western morning-glory	Convolvulaceae	N

	N=Native A=Alien (non-native)			

6.0 SUMMARY AND RECOMMENDATIONS

6.1Summary: This biological resource assessment involved the following analyses and surveys for sensitive plants and wildlife potentially occurring in the vicinity of the project:

- Review of current California Natural Diversity Database (CNDDB) mapping of known sensitive plant and wildlife populations within the region.
- An analysis of the suitability of the site for sensitive plants and wildlife using the California Native Plant Society *On-line Inventory of Rare and Endangered Vascular Plants of California,* and the California Department of Fish and Wildlife's *California Wildlife Habitat Relations System*.
- A California Department of Fish and Wildlife protocol, floristic-level field survey of the plants occurring within the property.
- A delineation of waters of the U.S.

Sensitive Plants: A total of 56 native and introduced plant taxa were identified within the survey areas during the in-season botanical survey. As used here, the term sensitive includes species having state or federal regulatory status, included on Lists 1B through 4 by the California Native Plant Society, or otherwise listed in the California Natural Diversity Database.

Sensitive Wildlife: A total of 15 sensitive wildlife species were assessed for potential occurrence at the site because of inclusion in the CNDDB database for the quadrangle and the CWHR database. Based on the habitat assessment, the following conclusions are made regarding species with sensitive regulatory status:

- *Sensitive status species that have a potential to be present in their sensitive state:*

  Obscure bumble bee, Foothill yellow legged frog; Western pond turtle; White- tailed kite; Northern harrier; Tricolored blackbird; Grasshopper sparrow; Yellow-billed cuckoo, Townsend's big-eared bat; Pallid bat; American badger; Humboldt marten; North American porcupine

Possible Waters of the U.S.: A small riparian area is present on this parcel. It is of very low quality and does not exhibit all three criteria for designation as wetland.

6.2Potential Impacts and Proposed Mitigation for Biological Resources:

(For all recommended mitigation measures accepted as conditions of approval, the text should be modified to use declarative language, i.e. "should" should become "shall", etc.)

- *Habitat Fragmentation*

Potential Impacts: The proposed gardens and processing facility shown in Figure 2 are comparatively small and unlikely to significantly impair wildlife movement through the corridor. Use of outdoor lighting has a potential to disrupt wildlife movement, much of which occursat night.

Proposed Mitigation for Habitat Fragmentation:

Measure 1: The use of deer fencing should be restricted to the perimeters of the proposed gardens. No deer fencing or other obstacles to wildlife passage should be installed that will restrict wildlife movement.

Measure 2: Outdoor lighting, if used, should be restricted to the processing facility and should be directed downward so as not to illuminate adjacent areas.

- *Woodland and Forest Resources*

Potential Impact: As shown in **Table 1**, the property contains a combined total of 60 acres of woodland. The proposed project design limits project components to the existing infrastructure areas and would not impact woodland resources.

Existing Black Oaks within the development zone should be preserved when possible.

Proposed Mitigation for Impacts to Woodland and Forest: No mitigationrecommended if the project is constructed within the area of existing infrastructure.

- *Sensitive Plants and Wildlife*

  Potential Impacts:

  Plants: No plants with sensitive regulatory status were found on the property during the floristic-level botanical survey.

  Wildlife: The following wildlife species have a potential to be present on the property:

  - Obscure bumble bee
  - Western pond turtle
  - White-tailed kite
  - Northern harrier
  - Grasshopper sparrow
  - Pallid bat
  - North American porcupine

  Use of pesticides resulting in drift has a potential to result in the incidental take of the obscure bumble bee, if present. Pesticide contamination of waterways or direct impacts to waterways has a potential to result in incidental take of foothill yellow-legged frog and/or western pond turtle downstream from the project area.

  Other sensitive species listed above depend primarily on woodland, forest, and grassland habitats. Woodland and forest habitat would not be impacted by this project. Impacts to grasslands would be minimal based on the current project design.

Proposed Mitigation for impacts to Wildlife:

Measure 3: To mitigate potential impacts to obscure bumble bee, foothill yellow-legged frog, and western pond turtle, State and Federal regulations on pesticide selection and use should be strictly followed. Pesticide use should not occur during periods when winds may transport spray to adjacent areas. As an alternative, the operator may wish to use organic growing methods. It should be noted that State of California regulations for cannabis cultivation include strict standards for purity which may pre-empt use of pesticides.

- *Waters of the U.S.*

Potential Impacts: As shown in **Figure 1**, the development would not significantly alter the existing forest or shrub area.

Placement of fill within Waters of the U.S. may require a Nationwide permit by the Corps of Engineers (possibly a non-reporting permit under the Nationwide Permit Program), along with a 401 Water Quality Certification from the Regional Water Quality Control Board, and 1604 Stream Alteration Agreement from the California Department of Fish and Wildlife. The County of Lake may require stream setbacks.

Erosion Control:

Potential Impacts: Vegetation clearing and grading activities have a potential to result in sediment runoff to Seigler Canyon Creek.

Proposed Mitigation: All work in or near waterways and wetlands should incorporate extensive erosion control measures consistent with Lake County Grading Regulations in order to avoid erosion and the potential for transport of sediments to Seigler Canyon Creek. Coverage under the National Pollutant Discharge Elimination System (NPDES), General Permit for Storm Water Discharges associated with a Construction Activity (General Permit) and a Storm Water Pollution Prevention Plan (SWPPP)may be required.

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