Appendix D
Biological Resources

ESA

D-1 Biological Evaluation

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

HERMAN PROPERTY/CASTELLINA
BIOLOGICAL EVALUATION
MADERA COUNTY, CALIFORNIA

Prepared by

LIVE OAK ASSOCIATES, INC.

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February 27, 2017 PN 995-03

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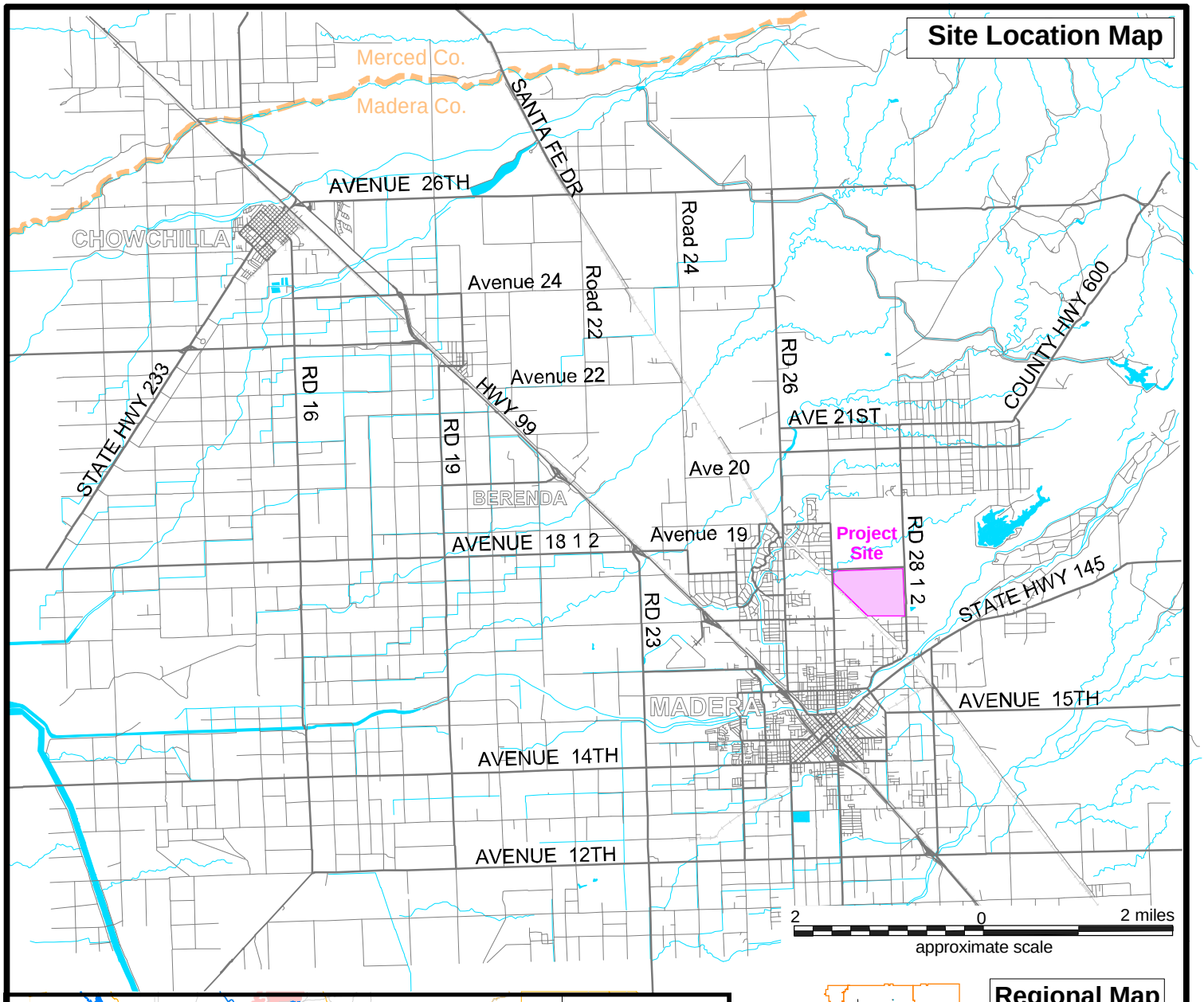
1.0 INTRODUCTION

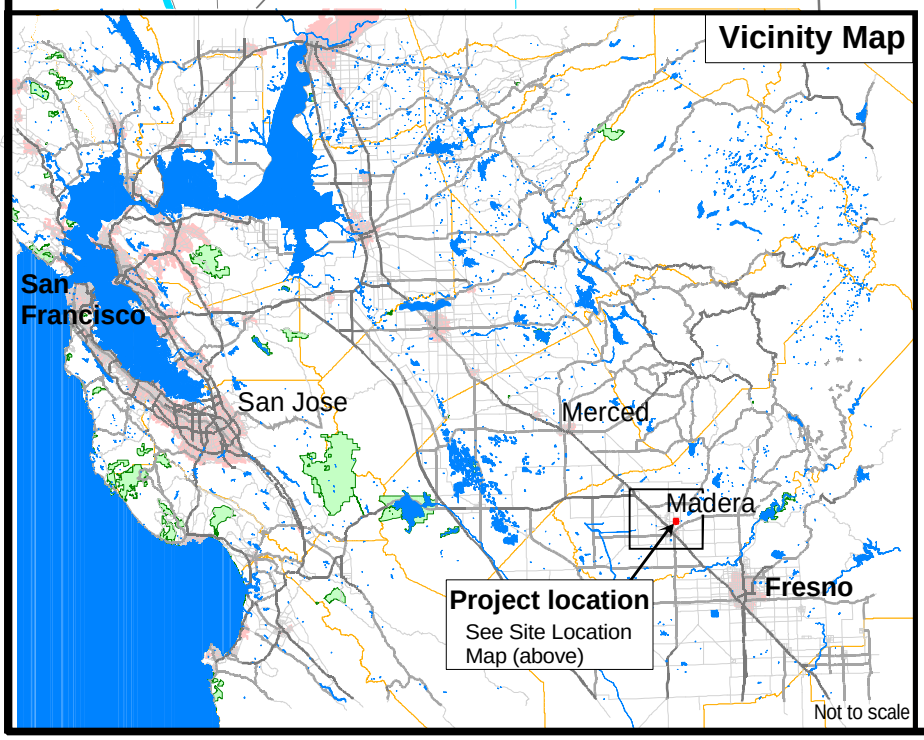
Live Oak Associates, Inc. (LOA), has prepared the following technical report that describes the biological resources of the approximately 794-ac Herman property (Figure 1), and evaluates likely impacts to these resources resulting from buildout of the Castellina master-planned community.

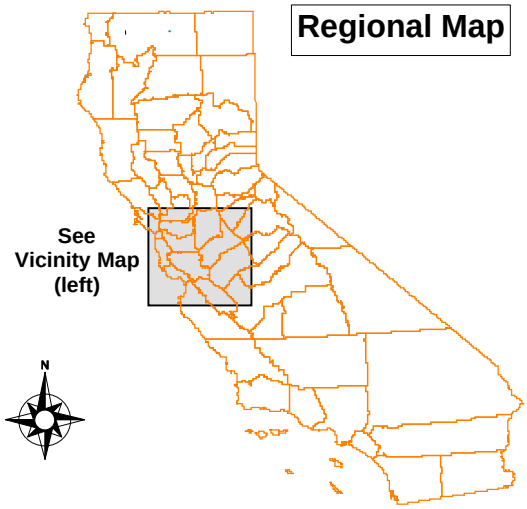
Development projects can damage or modify biotic habitats used by sensitive plant and wildlife species. In such cases, these activities may be regulated by state or federal agencies, subject to provisions of the California Environmental Quality Act (CEQA), and/or covered by policies and ordinances of Madera County. This report addresses issues related to: 1) sensitive biotic resources occurring on the site; 2) the federal, state, and local laws regulating such resources; and 3) mitigation measures that may be required to reduce the magnitude of anticipated impacts. As such, the objectives of this report are to:

- Summarize all site-specific information related to existing biological resources;
- Make reasonable inferences about the biological resources that could occur onsite based on habitat suitability and the proximity of the site to a species' known range;
- Summarize all state and federal natural resource protection laws that may be relevant to possible future site development;
- Identify and discuss project impacts to biological resources likely to occur on the site within the context of CEQA or any local, state, or federal laws; and
- Recommend avoidance and mitigation measures to be incorporated into the project that would reduce impacts to a less-than-significant level as identified by CEQA and that are generally consistent with recommendations of the resource agencies for affected biological resources.

The analysis of impacts, as discussed in Section 3.0 of this report, is based on the known and potential biotic resources of the site, discussed in Section 2.0. Sources of information used in the preparation of this analysis included: 1) the California Natural Diversity Data Base (CDFW 2016), 2) the *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2016), and 3) manuals and references related to plants and animals of the Central Valley.







Live Oak Associates, Inc.

Herman Property
Site / Vicinity Map

Date	Project #	Figure #
4/15/2016	995-03	1

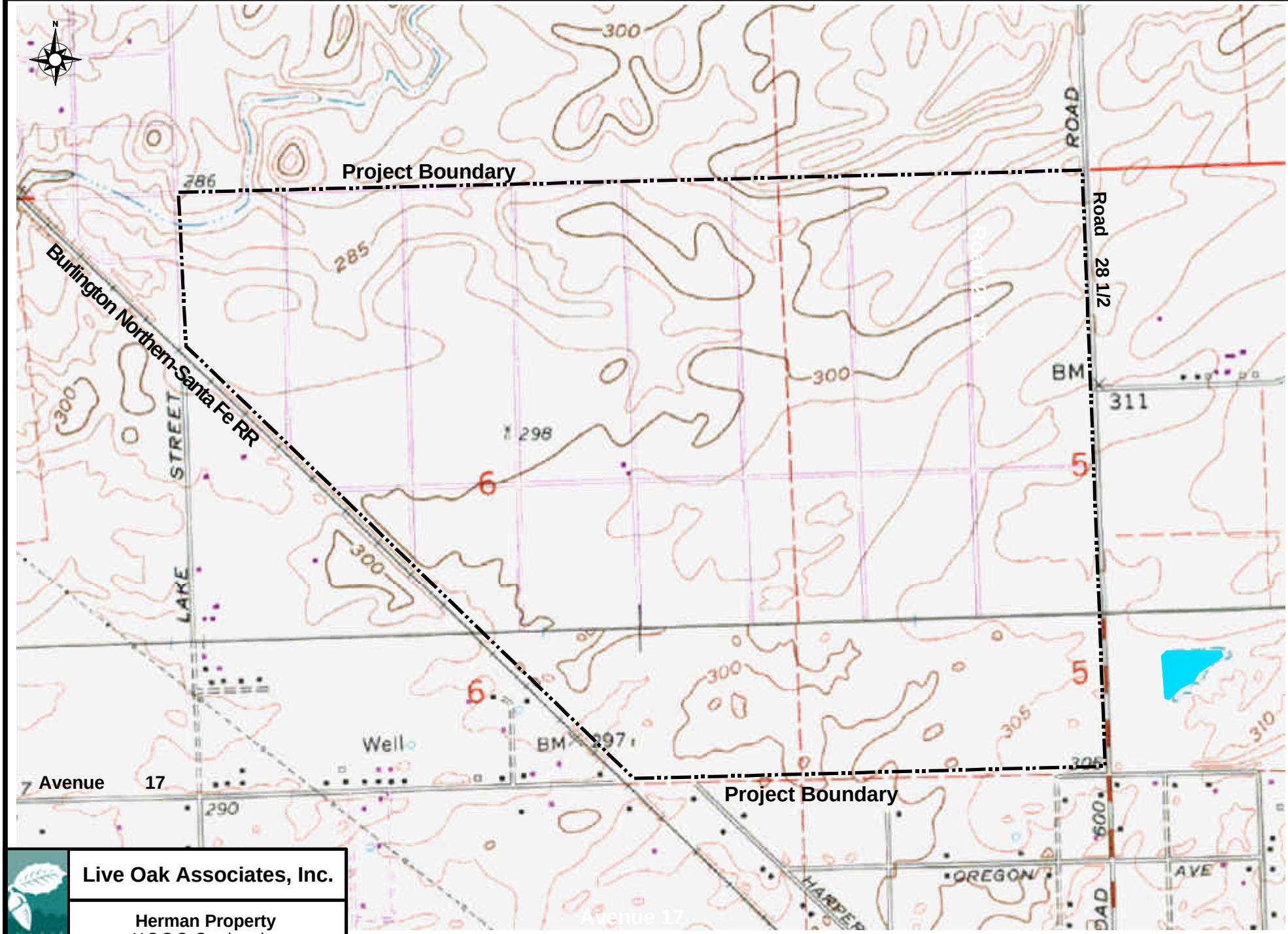
A reconnaissance-level field survey of the study area was conducted on March 31, 2016, by LOA ecologists Davinna Ohlson and Katrina Krakow, at which time the principal biotic habitats of the site were identified, and the constituent plants and animals of each were noted. LOA previously surveyed the site in 2006 and 2007. A general biological survey was completed by LOA in December 2006, and protocol-level vernal pool branchiopod surveys were completed from February to May 2007.

1.1 PROJECT LOCATION

The site is located approximately one mile north of the City of Madera and three miles east of Highway 99. The site is bounded by Road 27 to the west, rangelands to the north, Road 28 ½ to the east, rural residential lands to the south, and the Burlington Northern Santa Fe Railway to the southwest (Figure 1). The site is located in the Kismet and Madera 7.5" U.S. Geological Survey (USGS) quadrangles (Figure 2). The site can be found in portions of sections 5 and 6 of township 11 south, range 18 east.

1.2 PROJECT DESCRIPTION

The proposed project is the Castellina master-planned community. The Castellina Specific Plan calls for the development of up to 3,072 market-rate and Active Adult single-family, multi-family, and mixed-use residential units; approximately 21 acres of commercial mixed-use; and approximately 131 acres of parks, play fields, trails, plazas, community gardens, and other open space. The project will also include a water conservation program to achieve, at a minimum, a net zero groundwater use (Kimley-Horn & Associates 2016; Wood Rodgers 2016).



Live Oak Associates, Inc.

Herman Property
U.S.G.S. Quadrangles

Date	Project #	Figure #
4/15/2016	995-03	2

Source:
U.S.G.S. Kismet Quadrangle,1987 & U.S.G.S. Madera Quadrangle,1981
Courtesy of TERRAserver

2,000' 0 2,000 feet
approximate scale

2.0 EXISTING CONDITIONS

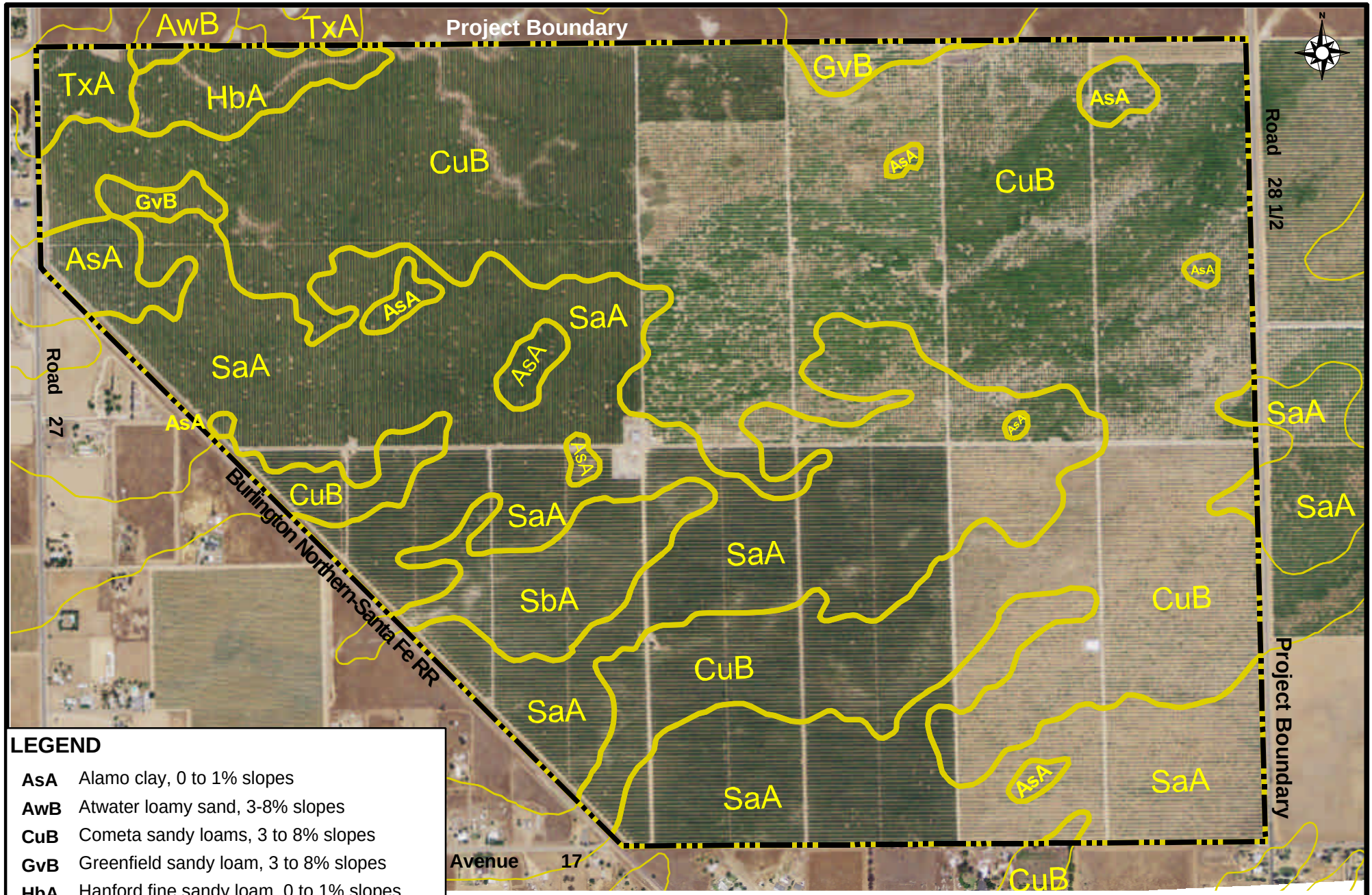
The site is located approximately one mile north of the City of Madera and three miles east of Highway 99. The site is bounded by Road 27 to the west, rangelands to the north, Road 28 ½ to the east, rural residential lands to the south, and the Burlington Northern Santa Fe Railway to the southwest (Figure 1). The site is located in the Kismet and Madera 7.5" U.S. Geological Survey (USGS) quadrangles. The site can be found in portions of sections 5 and 6 of township 11 south, range 18 east. Topographically, the site is relatively level, ranging in elevation from approximately 280 ft (85 m) National Geodetic Vertical Datum (NGVD) in the northwest corner to approximately 310 ft (95 m) at the east end of the site. Surrounding land uses include rangelands, orchards, and residences. The site itself consists of an active almond and fig orchard.

Over the years, the Madera County's natural environment has been substantially altered by agricultural and ancillary activities, while lands within the existing city limits of the City of Madera have primarily been converted to urban development. Like the site itself, many of the surrounding lands have been highly modified for agricultural purposes or otherwise developed as roads, individual residences, residential subdivisions, and commercial centers. However, natural rangelands are located immediately north of the site.

2.1 SOILS

Eight soil types from seven soil series were identified on the project site (Figure 3; Table 1; NRCS 2015). Like most soils of the San Joaquin Valley, the soils of the project site consist of alluvium primarily derived from plutonic rocks of the Sierra Nevada (NRCS 1962). This alluvium was carried from the Sierra to the Central Valley during the Pleistocene by the considerable volume of runoff generated from melting snow and glaciers. Therefore, soil development on the project site and adjoining lands has occurred principally during the Holocene.

Alamo, Atwater, Cometa, San Joaquin, and Tujunga soils are considered hydric. Hydric soils are soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. Under sufficiently wet conditions, they support the



LEGEND

AsA	Alamo clay, 0 to 1% slopes
AwB	Atwater loamy sand, 3-8% slopes
CuB	Cometa sandy loams, 3 to 8% slopes
GvB	Greenfield sandy loam, 3 to 8% slopes
HbA	Hanford fine sandy loam, 0 to 1% slopes
SaA	San Joaquin sandy loams, 0 to 3% slopes
SbA	San Joaquin-Alamo complex, 0 to 3% slopes
TxA	Tujunga loamy sand, 0 to 3% slopes

Source:
U.S. Dept. of Agriculture, Natural Resources Conservation Service

2,000' 0 2,000 feet
approximate scale

Live Oak Associates, Inc.

Herman Property
Soils

Date	Project #	Figure #
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growth and regeneration of hydrophytic vegetation. The other soil types are not considered hydric, although hydric inclusions may occur. Alamo soils are considered poorly drained. Atwater, Cometa, Greenfield, and Hanford soils are considered well drained. San Joaquin soils are considered moderately well drained. Tujunga soils are considered somewhat excessively drained. Drainage refers to the frequency and duration of periods when the soil is saturated with water. Tujunga soils are also considered to be slightly alkaline and, therefore, could support species adapted to alkaline soil conditions. This soil type is restricted to the site's northwest corner. None of the remaining soil types are known to support edaphic special status plant species (i.e., the remaining soils of the site are neither serpentine nor alkaline in the upper profiles).

Table 1. Soils occurring on the Castellina/Herman site (NRCS 2015).

Soil Series/Soil	Map Symbol	Parent Material	Surface Permeability	Hardpan/ Duripan	Hydric
ALAMO SERIES Alamo clay, 0 to 1% slopes	AsA	Clayey alluvium derived from igneous, metamorphic and sedimentary rock	Very slow	Yes	Yes
ATWATER SERIES Atwater loamy sand, 3 to 8% slopes, MLRA 17	AwB	Sandy alluvium derived from granite	Moderately rapid	Yes	Yes
COMETA SERIES Cometa sandy loams, 3 to 8% slopes,	CuB	Alluvium derived from granite	Very slow	No	Yes
GREENFIELD SERIES Greenfield sandy loam, moderately deep and deep over hardpan, 3 to 8% slopes	GvB	Alluvium derived from igneous, metamorphic and sedimentary rock	Moderately rapid	No	No
HANFORD SERIES Hanford fine sandy loam, moderately deep and deep over hardpan, 0 to 1% slopes	HbA	Alluvium derived from igneous rock	Moderately rapid	No	No
SAN JOAQUIN SERIES San Joaquin sandy loam, 0 to 3% slopes, MLRA 17 San Joaquin-Alamo complex, 0 to 3% slopes	SaA SbA	Alluvium derived from granite	Very slow	Yes	Yes
TUJUNGA SERIES Tujunga loamy sand, moderately deep and deep over hardpan, 0 to 3% slopes	TxA	Sandy alluvium derived from granite	Rapid	No	Yes

Some alluvial soils of the region developed a subsurface iron-silica hardpan 2-6 ft below the surface. In some places, this is a dominant characteristic of the soil. In others, this hardpan occurs sporadically as hydric inclusions. This water-restricting layer often perches water during the last half of the winter and early spring. In hummocky terrain, perched water creates seasonal pools in topographic depressions that support a unique flora and fauna, many of which are state and/or federal endangered species, endemic to such pools occurring in the region. These seasonal pools are typically known as vernal pools. Extensive vernal pool complexes are known to occur in the open rangeland in the vicinity of the site. Soils suitable for vernal pool development on the site include the Alamo, Atwater, and San Joaquin Series, which are known to possess the subsurface hardpan necessary for vernal pool formation. However, due to the extensive agricultural practices of the site and the deep ripping that has occurred, the underlying hardpan is likely no longer intact.

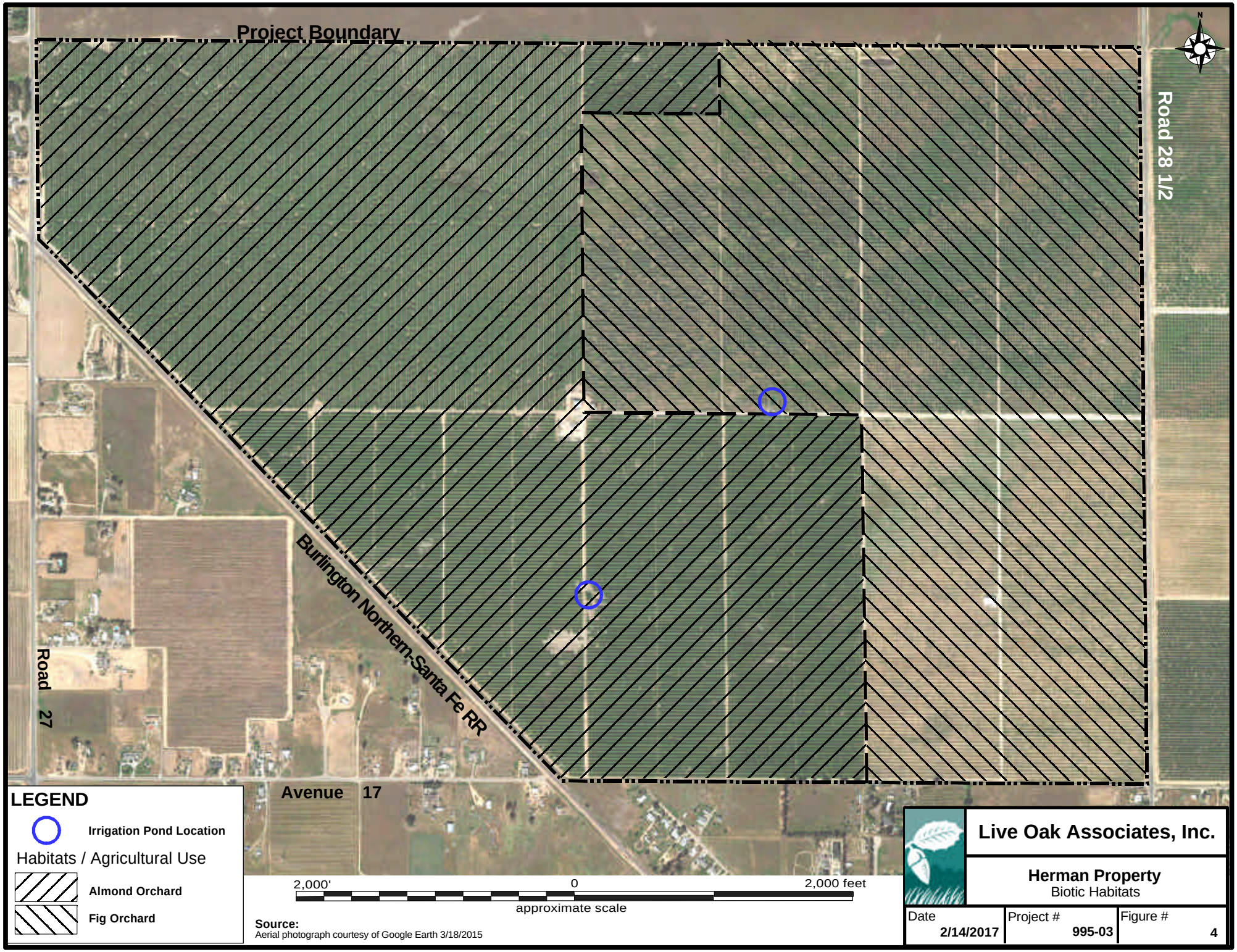
2.2 CLIMATE

The San Joaquin Valley has a Mediterranean climate with warm to hot dry summers and cool winters. Annual precipitation in the general vicinity of the site is highly variable from year to year. Average annual rainfall is approximately 11 inches, most of which falls between November and April (WRCC 2016). Stormwater readily infiltrates the soils of the site; when field capacity has been reached, water may drain west towards the railroad tracks and Road 27 or may perch in onsite depressions or swales.

2.3 BIOTIC HABITATS

The entire project site consists of an active almond and fig orchard and associated infrastructure, including outbuildings, dirt roads, irrigation ponds, and wells (Figure 4). A list of the vascular plant species observed on the project site and the terrestrial vertebrates using, or potentially using, the site are provided in Appendices B and C, respectively.

The site has been an orchard since 1978, when it was originally planted with figs. The orchard has been gradually replaced with new figs or almonds, with the most recent replacement occurring between 2005 and 2010. At the time of the 2016 field surveys, the sole crops were almonds and figs.


Project Boundary
Road 28 1/2
Burlington Northern-Santa Fe RR
Road 27
Avenue 17
N
LEGEND
Irrigation Pond Location
Habitats / Agricultural Use
Almond Orchard
Fig Orchard
2,000'
0
2,000 feet
approximate scale
Source:
Aerial photograph courtesy of Google Earth 3/18/2015
Live Oak Associates, Inc.
Herman Property
Biotic Habitats
Date
2/14/2017
Project #
995-03
Figure #
4

At the time the site was converted from grasslands and the associated seasonal wetlands, the soils would have been deep-ripped to break up any subsurface hardpan that may have been present.

The northern half of the site consists of a mature almond orchard (*Prunus amygdalus*) in the western half and a mature fig (*Ficus carica*) orchard in the eastern half. Portions of the mature orchard trees in the northern half of the property have been uprooted and stacked in large piles. The southern half of the site consists primarily of an almond orchard that was planted approximately ten years ago, with a small area in the east supporting a young fig orchard. Mature orchard trees were removed from the southern half of the property in 2006, with deep ripping occurring following the tree removal. This area was then replanted in September 2006. The entire property is typically tilled five to six times a year.

Understory vegetation was sparse due to ongoing agricultural management. Vegetation was generally limited to the base of the orchard trees and between tree rows. Grass species observed were generally non-native annual species, including soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum*), and rattail fescue (*Festuca myuros*). Forbs observed included doveweed (*Croton setiger*), willow herb (*Epilobium brachycarpum*), black mustard (*Brassica nigra*), cheeseweed (*Malva parviflora*), prickly lettuce (*Lactuca serriola*), common groundsel (*Senecio vulgaris*), and whitestem filaree (*Erodium moschatum*).

Young pomegranates (*Punica granatum*) are planted along the site's entire border. A row of eucalyptus (*Eucalyptus globulus*) trees occurs immediately offsite along the southern boundary of the property.

In the northern part of the site, a seasonal, irrigated wetland occurs within a swale segment that is a relic of the site's historical topography. It holds irrigation water through much of the summer growing season and supports weedy vegetation that includes tall umbrella sedge (*Cyperus eragrostis*), common knotweed (*Polygonum aviculare* ssp. *depressum*), and barnyard grass (*Echinochloa crus-galli*). Other depressional areas of the orchard where irrigation water pools supported grass species such as Bermuda grass (*Cynodon dactylon*), barnyard grass, rabbitsfoot

grass (*Polypogon monospeliensis*), feather windmill grass (*Chloris virgata*), and sprangletop (*Leptochloa fusca*), which are all species commonly found in disturbed wetlands, and non-native forbs such as hyssop loosestrife (*Lythrum hyssopifolium*).

Two irrigation ponds are present on the site that were constructed in the last ten years, one in the almond orchard in the southwest part of the site, and one in the fig orchard near the center of the site. The pond in the almond orchard was generally devoid of vegetation, while the pond in the fig orchard supported vegetation similar to the understory vegetation in the surrounding orchard.

Two large sheds are located on the site. These are large, metal open structures with no evidence of use by local wildlife (e.g., bats and birds).

The orchards provide low habitat value for local wildlife species due to the limited understory vegetation and continuous ground disturbance resulting from agricultural practices. These factors constrain the amount of cover and available prey base that might occur on the site. However, rangelands are located immediately to the north of the site, so terrestrial wildlife occurring in these lands could access the site.

Amphibians would be restricted on the site; however, it is possible that species breeding in the pools of the rangeland located immediately to the north of the site could aestivate in burrows along the boundary of the site. American bullfrogs (*Lithobates catesbeiana*) were present at the irrigation ponds, and bullfrog tadpoles were observed in a puddle in the northern part of the site.

Reptiles that may occasionally occur on the site include species such as the western fence lizard (*Sceloporus occidentalis*), common kingsnake (*Lampropeltis getula*), and gopher snake (*Pituophis melanoleucus*).

A number of avian species are expected to move through the site regularly. Raptors observed flying over the site during the December 2006 and March 2016 surveys include the turkey vulture (*Cathartes aura*) and red-tailed hawk (*Buteo jamaicensis*), and barn owl (*Tyto alba*) boxes have been installed around the property. Passerine species occurring on the site include

the black phoebe (*Sayornis nigricans*), western scrub-jay (*Aphelocoma californica*), house finch (*Carpodacus mexicanus*), American crow (*Corvus brachyrhynchos*), American robin (*Turdus migratorius*), and northern mockingbird (*Mimus polyglottos*). Other birds seen on the site include the mourning dove (*Zenaida macroura*) northern flicker (*Colaptes auratus*). Avian species, particularly raptors, are unlikely to nest in the fig or almond trees of the site. However, birds could establish nests in the eucalyptus trees along the southern boundary of property.

Burrows belonging to small mammals common in the area, such as California ground squirrels (*Spermophilus beecheyi*), deer mice (*Peromyscus maniculatus*), and California meadow vole (*Microtus californicus*) were observed onsite. Common mammalian predators attracted to these small mammals would likely be limited to coyotes (*Canis latrans*) and red foxes (*Vulpes vulpes*), as these species are well adapted to human disturbance. A coyote was observed fleeing from a large brush pile on the site during the December 2006 survey.

2.4 MOVEMENT CORRIDORS

Wildlife movement corridors are areas where regional wildlife populations regularly and predictably move during dispersal or migration. Movement corridors in California are typically associated with valleys, rivers and creeks supporting riparian vegetation, and ridgelines. With increasing encroachment of humans on wildlife habitats, it has become important to establish and maintain linkages, or movement corridors, for animals to be able to access locations containing different biotic resources that are essential to maintaining their life cycles.

The importance of an area as a movement corridor depends on the species in question and its consistent use patterns. Animal movements generally can be divided into three major behavioral categories:

- Movements within a home range or territory;
- Movements during migration; and
- Movements during dispersal.

While no detailed study of animal movements has been conducted for the study area, knowledge of the site, its habitats, and the ecology of the species potentially occurring onsite permits

sufficient predictions about the types of movements occurring in the region and whether or not proposed development would constitute a significant impact to animal movements.

As noted in section 2.1, wildlife species may use the site as part of their normal home range and dispersal movements between the site and more open lands to the north and east or to the Fresno River to the south. However, the site would not be expected to facilitate regional movements of wildlife in a disproportionate way as to function as a movement corridor because animals would have to travel through miles of marginal to poor habitat (i.e., agricultural fields and orchards) to reach the site, which itself holds little habitat value, and urban development to the west and south serves as a barrier to regional wildlife movements. Wildlife would move through all portions of the site, as they would also do on surrounding lands, and any animals reaching the site from the more open lands to the north and east would be expected to disperse back in these directions.

2.5 SPECIAL STATUS PLANTS AND ANIMALS

Several species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered rare and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural, urban, and other uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as candidates for such listing. Still others have been designated as species of special concern by the CDFW. The CDFW and California Native Plant Society (CNPS) have developed their own set of lists (i.e., California Rare Plant Ranks, or CRPR) of native plants considered rare, threatened, or endangered. Collectively, these plants and animals are referred to as "special status species."

A number of special status plants and animals occur in the site's vicinity (Figure 5). These species and their potential to occur in the study area are listed in Table 2 on the following pages. Sources of information for this table included *Wildlife, Volumes I, II, and III* (Zeiner et al. 1988a,

1988b, and 1988c), California Natural Diversity Data Base (CDFW 2016a), *Endangered and Threatened Wildlife and Plants* (USFWS 2015), *State and federally listed endangered, threatened, and rare plants of California* (CDFW 2016b), *State and federally listed endangered and threatened animals of California* (CDFW 2016c), and the California Native Plant Society's *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2017). This information was used to evaluate the potential for special status plant and animal species to occur on the site. Other factors considered in this evaluation include the ability of the habitats occurring onsite to support the species, geographical distance of the site from known populations or occurrences of the species, and ability of the species to travel from areas of known populations or occurrences to the site. Figure 5 depicts the location of special status species found by the California Natural Diversity Data Base (CNDDB). It is important to note that the CNDDB is a volunteer database; therefore, it may not contain all known or gray literature records.

A search of published accounts for all relevant special status plant and animal species was conducted for the Kismet and Madera USGS 7.5" quadrangles in which the project site occurs and for the ten surrounding quadrangles (Bonita Ranch, Berenda, Le Grand, Raynor Creek, Raymond, Daulton, Gregg, Herndon, Biola, and Gravelly Ford) using the CNDDB.

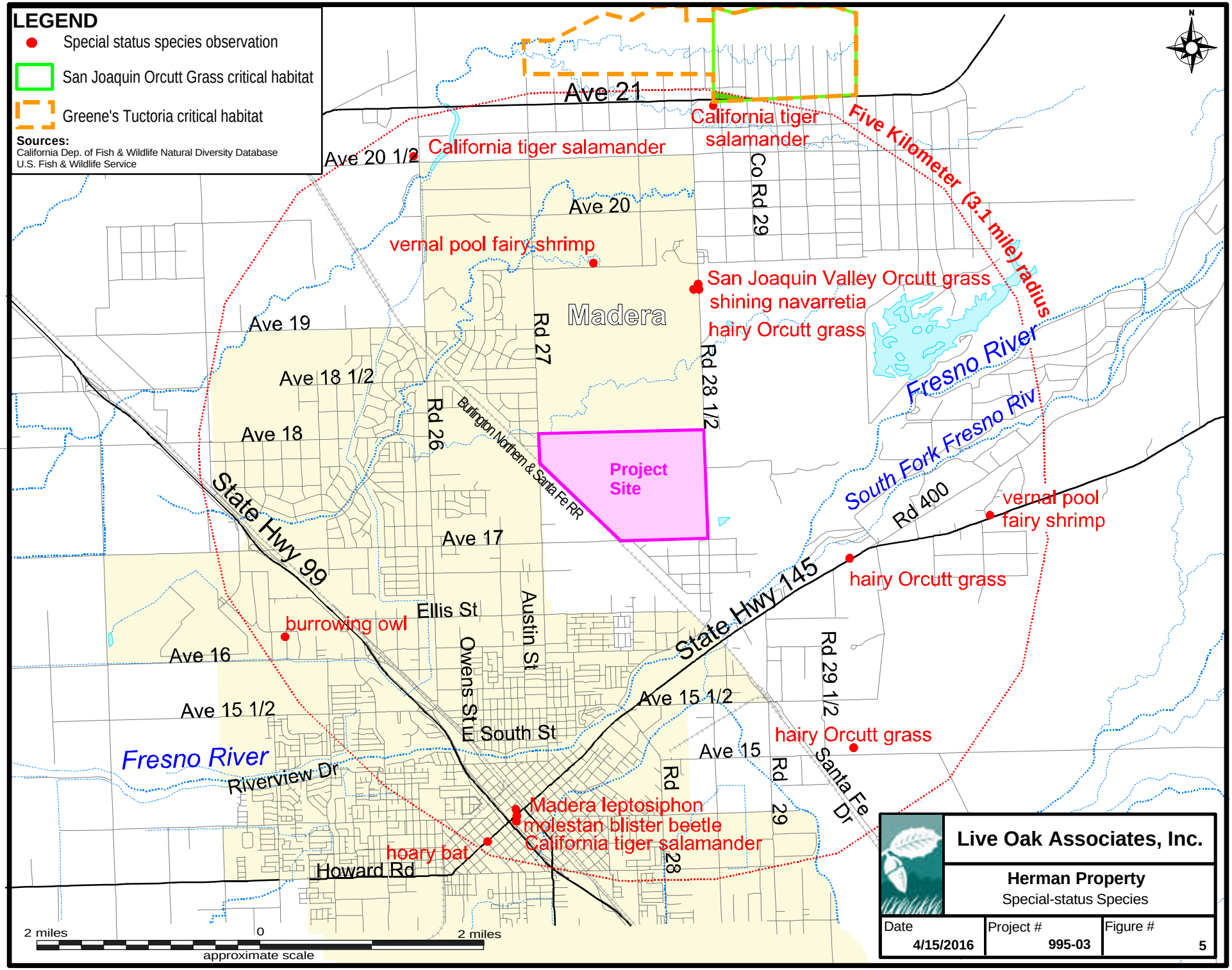

LEGEND
Special status species observation
San Joaquin Orcutt Grass critical habitat
Greene's Tuctoria critical habitat
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service
Ave 21
Ave 20 1/2
Ave 20
Ave 19
Ave 18 1/2
Ave 18
Ave 17
Ave 16
Ave 15 1/2
Ave 15
California tiger salamander
California tiger salamander
vernal pool fairy shrimp
San Joaquin Valley Orcutt grass
shining navarretia
hairy Orcutt grass
Five Kilometer (3.1 mile) radius
Co Rd 29
Rd 27
Rd 28 1/2
Rd 26
Madera
Project Site
Burlington Northern & Santa Fe RR
Fresno River
South Fork Fresno Riv
Rd 400
vernal pool fairy shrimp
hairy Orcutt grass
State Hwy 99
State Hwy 145
burrowing owl
Ellis St
Austin St
Owens St
South St
Riverview Dr
Fresno River
Rd 29 1/2
Rd 29
Rd 28
Santa Fe Dr
hairy Orcutt grass
Madera leptosiphon
molestan blister beetle
California tiger salamander
hoary bat
Howard Rd
2 miles
0
2 miles
approximate scale
Live Oak Associates, Inc.
Herman Property
Special-status Species
Date 4/15/2016
Project # 995-03
Figure # 5

Table 2. Special status species that could occur in the project vicinity.

PLANTS (adapted from CDFW 2017a, b and CNPS 2017)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description and blooming period	*Occurrence in the study area
Succulent owl's-clover *Castilleja campestris* ssp. *succulenta*	FT, CE, CRPR 1B	Habitat: Vernal pools. Elevation: 50-750 meters. Blooms: April–May. Life form: Annual herb.	**Absent.** Vernal pools are absent from the site.
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	FT, CE, CRPR 1B	Habitat: Vernal pools. Elevation: 10-755 meters. Blooms: April–September. Life form: Annual herb.	**Absent.** Vernal pools are absent from the site.
Hairy Orcutt grass *Orcuttia pilosa*	FE, CE, CRPR 1B	Habitat: Vernal pools. Elevation: 46-200 meters. Blooms: May–September. Life form: Annual herb.	**Absent.** Vernal pools are absent from the site.
Greene's tuctoria *Tuctoria greenei*	FE, CR, CRPR 1B	Habitat: Vernal pools. Elevation: 30-1070 meters. Blooms: May–September. Life form: Annual herb.	**Absent.** Vernal pools are absent from the site.

Table 2. Special status species that could occur in the project vicinity (cont'd.).

PLANTS (adapted from CDFW 2017a, b and CNPS 2017)
Other special status plants listed by CNPS

Common and scientific names	Status	General habitat description and blooming period	*Occurrence in the study area
Heartscale *Atriplex cordulata* var. *cordulata*	CRPR 1B	Habitat: Alkaline flats and scalds in chenopod scrub valley and foothill grassland, and meadows of the Central Valley, usually in sandy soils. Elevation: 0-560 meters. Blooms: April–October. Life form: Annual herb.	**Absent.** Alkaline habitat is absent from the site. The site is an active orchard and is subject to regular anthropogenic disturbances. Any suitable habitat that may have historically occurred onsite is no longer present.
Lesser saltscale *Atriplex minuscula*	CRPR 1B	Habitat: Alkali sink and grassland in sandy, alkaline soils of chenopod scrub, playas, and valley and foothill grassland. Elevation: 15-200 meters. Blooms: May–October. Life form: Annual herb.	**Absent.** Alkaline habitat is absent from the site. The site is an active orchard and is subject to regular anthropogenic disturbances. Any suitable habitat that may have historically occurred onsite is no longer present.
Vernal pool smallscale *Atriplex persistens*	CRPR 1B	Habitat: Alkaline vernal pools. Elevation: 10-115 meters. Blooms: June–October. Life form: Annual herb.	**Absent.** Vernal pools are absent from the site.

Table 2. Special status species that could occur in the project vicinity (cont'd.).

PLANTS (adapted from CDFW 2017a, b and CNPS 2017)
Other special status plants listed by CNPS

Common and scientific names	Status	General habitat description and blooming period	*Occurrence in the study area
Subtle orache *Atriplex subtilis*	CRPR 1B	Habitat: Alkaline soils of valley and foothill grasslands. Elevation: 40-100 meters. Blooms: June–October. Life form: Annual herb.	**Absent.** Alkaline habitat is absent from the site. The site is an active orchard and is subject to regular anthropogenic disturbances. Any suitable habitat that may have historically occurred onsite is no longer present.
Hoover's calycadenia *Calycadenia hooveri*	CRPR 1B	Habitat: Cismontane woodland and valley and foothill grassland on exposed, rocky, or barren soils. Elevation: 65-300 meters. Blooms: July–September. Life form: Annual herb.	**Absent.** Suitable habitat is absent from the site.
Beaked clarkia *Clarkia rostrata*	CRPR 1B	Habitat: Cismontane woodland and valley and foothill grassland on north-facing slopes and sometimes on sandstone. Elevation: 60-500 meters. Blooms: April–May. Life form: Annual herb.	**Absent.** Suitable habitat is absent from the site.
Sierra clarkia *Clarkia virgata*	CRPR 4	Habitat: Cismontane woodland and lower montane coniferous forest. Elevation: 400-1615 meters. Blooms: May–August. Life form: Annual herb.	**Absent.** Suitable habitat is absent from the site.
Ewan's larkspur *Delphinium hansenii* ssp. *ewanianum*	CRPR 4	Habitat: Cismontane woodland and valley and foothill grassland on rocky soils. Elevation: 60-600 meters. Blooms: March–May. Life form: Perennial herb.	**Absent.** Alkaline habitat is absent from the site. The site is an active orchard and is subject to regular anthropogenic disturbances. Any suitable habitat that may have historically occurred onsite is no longer present.
Recurved larkspur *Delphinium recurvatum*	CRPR 1B	Habitat: Chenopod scrub, cismontane woodland, and valley and foothill grassland on alkaline soils. Elevation: 3-790 meters. Blooms: March–June. Life form: Perennial herb.	**Absent.** Alkaline habitat is absent from the site. The site is an active orchard and is subject to regular anthropogenic disturbances. Any suitable habitat that may have historically occurred onsite is no longer present.
Spiny-sepaled button-celery *Eryngium spinosepalum*	CRPR 1B	Habitat: Vernal pools and valley and foothill grasslands. Elevation: 80-975 meters. Blooms: April–June. Life form: Annual/perennial herb.	**Absent.** Vernal pools are absent from the site. The site is an active orchard and is subject to regular anthropogenic disturbances. Any suitable habitat that may have historically occurred onsite is no longer present.

Table 2. Special status species that could occur in the project vicinity (cont'd.).

PLANTS (adapted from CDFW 2017a, b and CNPS 2017)
Other special status plants listed by CNPS

Common and scientific names	Status	General habitat description and blooming period	*Occurrence in the study area
Madera leptosiphon *Leptosiphon serrulatus*	CRPR 1B	Habitat: Cismontane woodland and lower montane coniferous forest on dry slopes, often on decomposed granite. Elevation: 300-1300 meters. Blooms: April–May. Life form: Annual herb.	**Absent.** Suitable habitat is absent from the site.
Shining navarretia *Navarretia nigelliformis* ssp. *radians*	CRPR 1B	Habitat: Cismontane woodland, valley and foothill grasslands, and vernal pools. Sometimes occurs in clay soils. Elevation: 76-1000 meters. Blooms: April–July. Life form: Annual herb.	**Absent.** Vernal pools are absent from the site. The site is an active orchard and is subject to regular anthropogenic disturbances. Any suitable habitat that may have historically occurred onsite is no longer present.
Merced phacelia *Phacelia ciliata* var. *opaca*	CRPR 3	Habitat: Adobe or clay soils of valley floors, open hills, or alkaline flats. Elevation: 60-150 meters. Blooms: February–May. Life form: Annual herb.	**Absent.** Alkaline habitat is absent from the site. The site is an active orchard and is subject to regular anthropogenic disturbances. Any suitable habitat that may have historically occurred onsite is no longer present.
California alkali grass *Puccinellia simplex*	CRPR 1B	Habitat: Meadows and seeps, chenopod scrub, valley and foothill grasslands, vernal pools. Occurs in alkaline or vernally mesic soils of sinks, flats, and lake margins. Elevation: 2-930 meters. Blooms: March–May. Life form: Annual herb.	**Absent.** Alkaline habitat and vernal pools are absent from the site. The site is an active orchard and is subject to regular anthropogenic disturbances. Any suitable habitat that may have historically occurred onsite is no longer present.

Table 2. Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2017a, c and USFWS 2015)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Vernal pool fairy shrimp *Branchinecta lynchi*	FT	Vernal pools of California's Central Valley.	**Absent.** Low-lying areas of the site that pooled water were surveyed at protocol levels for vernal pool branchiopods from February to May 2007. No vernal pool branchiopods were detected. In October 2007, the USFWS issued a "no take" letter concurring with LOA's finding that the site does not constitute habitat for the species (USFWS 2007). The nearest recorded observation is approximately 0.7 miles to the south of the site (CNDDB 2017).
Vernal pool tadpole shrimp *Lepidurus packardi*	FE	Deep vernal pools containing clear to highly turbid water in unplowed grasslands of the Central Valley.	**Absent.** Vernal pools are absent from the site. Low-lying areas of the site that pooled water were surveyed at protocol levels for vernal pool branchiopods from February to May 2007. No vernal pool branchiopods were detected. In October 2007, the USFWS issued a "no take" letter concurring with LOA's finding that the site does not constitute habitat for the species (USFWS 2007). The nearest recorded observation of VPTS is more than 15 miles from the site (CNDDB 2017).
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	Mature elderberry shrubs of California's Central Valley and Sierra Foothills.	**Absent.** Elderberry shrubs are absent from the site.
California tiger salamander *Ambystoma californiense*	FT, CT, CSC	Breeds in vernal pools and stock ponds of central California. Adults aestivate in grassland habitats adjacent to breeding sites.	**Unlikely.** Breeding habitat is absent from the site. Marginal aestivation habitat is present in the form of a few burrows along the site's boundaries. Potential breeding habitat exists on adjacent rangelands to the north and northeast of the site, but any CTS occurring on these lands would be likely to aestivate on the same lands rather than on the subject property. In October 2007, the USFWS issued a "no take" letter concurring with LOA's finding that the site does not constitute breeding habitat and only marginal aestivation habitat for the species (USFWS 2007). The nearest documented occurrence of this species is at a pond approximately 2.8 miles northwest of the site (CNDDB 2017).

Table 2. Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2017a, c and USFWS 2015)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Blunt-nosed leopard lizard *Gambelia sila*	FE, CE, CP	Frequents grasslands, alkali meadows and chenopod scrub of the San Joaquin Valley from Merced south to Kern County. Seeks cover in mammal burrows.	**Absent.** Suitable habitat for this species has either been highly disturbed or eliminated as a result of agricultural activities. The nearest recorded observation is approximately 7.5 miles to the southwest of the site (CNDDB 2017).
Swainson's hawk (nesting) *Buteo swainsoni*	CT	Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah. Requires adjacent suitable foraging areas such as grasslands or alfalfa fields supporting rodent populations.	**Unlikely.** Foraging habitat is limited on the site. Breeding habitat for Swainson's hawk is not present on the site. However, as the nearest recorded observation of Swainson's hawk is approximately 4 miles south of the site (CNDDB 2017), Swainson's hawks may be expected to fly over the site from time to time or forage on the adjacent rangelands north of the site.
Bald eagle (nesting & nonbreeding/wintering) *Haliaeetus leucocephalus*	CE, CP	Breeding habitat is usually within 4 km of a water source in a tall tree or cliffs; roosting in large numbers in winter is common.	**Unlikely.** Suitable breeding and foraging habitat is not present on the site. However, as the nearest recorded observation of the bald eagle is approximately 14.5 miles to the northeast of the site (CNDDB 2017), bald eagles may be expected to occasionally fly over the site.
Fresno kangaroo rat *Dipodomys nitratoides exilis*	FE, CE	Chenopod scrub, alkali sink, and open grassland habitats in western Fresno County on gentle slopes with friable, sandy-loam soils.	**Absent.** Suitable habitat for this species is absent from the site. The nearest recorded observations for Fresno kangaroo rat are more than 18 miles southeast of the site from 1934 and earlier.
San Joaquin kit fox *Vulpes macrotis mutica*	FE, CT	Frequents desert alkali scrub and annual grasslands and may forage in adjacent agricultural habitats. Utilizes enlarged (4 to 10 inches in diameter) ground squirrel burrows as denning habitat.	**Unlikely.** The few burrows onsite do not provide adequate potential denning habitat. The site occurs on the edge of the known range of this species. There are no documented occurrences of this species within ten miles of the site and the nearest documented occurrence of the SJKF is approximately 13 miles to the southwest of the site (CNDDB 2017). In addition, the orchard habitat of the site is not suitable habitat for the SJKF. Therefore, it is highly unlikely that SJKF occur onsite, although it is not possible to rule out a dispersing individual traversing the site.

Table 2. Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2017a, c and USFWS 2015)
California Species of Special Concern and Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Western spadefoot *Spea hammondii*	CSC	Primarily occurs in grasslands, but also occurs in valley and foothill hardwood woodlands. Requires vernal pools or other temporary wetlands for breeding.	**Unlikely.** Breeding habitat is absent from the site. Marginal aestivation habitat is present in the form of a few burrows along the site's boundaries. Potential breeding habitat exists on adjacent rangelands to the north and northeast of the site, but any spadefoot occurring on those lands would be likely to aestivate on the same lands rather than on the site. The nearest documented occurrence of this species is more than 5.5 miles to the north of the site (CNDDB 2017).
Western pond turtle *Actinemys marmorata*	CSC	Open, slow-moving water of rivers and creeks of central California with rocks and logs for basking.	**Unlikely.** Two irrigation ponds were built on the site in 2009 and 2014. However, western pond turtles are unlikely to access the site due to the lack of nearby, permanent watercourses that could serve as a movement corridor to the site. Aquatic features on adjacent lands are only seasonally wet. The nearest documented occurrence of WPT is more than 3 miles north of the site (CNDDB 2017).
Coast horned lizard *Phrynosoma blainvillii*	CSC	Grasslands, scrublands, oak woodlands, etc. of central California. Common in sandy washes with scattered shrubs.	**Absent.** The site does not support suitable habitat for this species. The nearest documented occurrence of this species is more than 3 miles from the site (CNDDB 2017).
Golden eagle *Aquila chrysaetos*	CP	Typically frequents rolling foothills, mountain areas, woodland areas, sage-juniper flats, and desert habitats.	**Unlikely.** Suitable breeding habitat is absent from the site. The site would not be considered suitable foraging habitat for this species. However, this species may occasionally fly over the site. The nearest documented occurrence of this species is more than 10 miles from the site (CNDDB 2017).
Burrowing owl *Athene cunicularia*	CSC	Open, dry grasslands, deserts and ruderal areas. Requires suitable burrows. This species is often associated with California ground squirrels.	**Possible.** Orchards are generally not suitable habitat for the BUOW. However, suitable breeding habitat in the form of ground squirrel burrows is present but limited onsite and is mostly concentrated along the northern boundary. Rangelands to the north of the site and roadsides may also support potentially suitable habitat for the BUOW. The nearest documented occurrence of this species is approximately 5.5 miles to the east of the site (CNDDB 2017).

Table 2. Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2017a, c and USFWS 2015)
California Species of Special Concern and Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Tricolored blackbird *Agelaius tricolor*	CSC	Breeds near fresh water, primarily emergent wetlands, with tall thickets. Forages in nearby grassland and cropland habitats.	**Unlikely.** Breeding habitat is absent from the site, as the irrigation basins are well managed. This species may occasionally forage on or fly over the site. The nearest documented occurrence of this species is more than 10 miles from the site (CNDDB 2017).
Pallid bat *Antrozous pallidus*	CSC	Roosts in rocky outcrops, cliffs, and crevices with access to open habitats for foraging. May also roost in caves, mines, hollow trees and buildings.	**Unlikely.** Foraging habitat is present on the site. However, roosting habitat is absent. The nearest documented occurrence of this species is more than 3 miles from the site (CNDDB 2017).
American badger *Taxidea taxus*	CSC	Found in drier open stages of most shrub, forest and grassland habitats with friable soils. Also found on edges of agricultural lands.	**Unlikely.** The site provides poor habitat for this species due to its orchard operations, but rangelands to the north and northeast support suitable habitat for the badger. Therefore, the badger can be expected to occasionally move through the site. The nearest documented occurrence of this species is approximately 6 miles to the southeast of the site (CNDDB 2017).

***Explanation of Occurrence Designations and Status Codes**

Present: Species observed on the sites at time of field surveys or during recent past.
Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible: Species not observed on the sites, but it could occur there from time to time.
Unlikely: Species not observed on the sites, and would not be expected to occur there except, perhaps, as a transient.
Absent: Species not observed on the sites, and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE	Federally Endangered
FT	Federally Threatened
FPE	Federally Endangered (Proposed)
FC	Federal Candidate

CE	California Endangered
CT	California Threatened
CR	California Rare
CP	California Protected
CTC	California Threatened (Candidate)
CSC	California Species of Special Concern

CRPR	California Rare Plant Rank
1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened, or Endangered in California and elsewhere
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere
3	Plants about which we need more information – a review list
4	Plants of limited distribution – a watch list

2.6 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and that, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and the California Regional Water Quality Control Board (RWQCB). See Section 3.2.6 of this report for additional information.

A formal wetland delineation and waters of the U.S. analysis has been completed by LOA for the site but has not been submitted to the USACE for verification as of the writing of this report. Until it is submitted to and verified by the USACE, waters of the U.S. are presumed to be absent from the site, but waters of the State are presumed to be present on the site in the form of a seasonal, irrigated wetland in the northwest part of the property.

The project site is located in an area of the San Joaquin Valley that historically was dominated by hummocky terrain supporting numerous vernal pool complexes. Historic aerial photography clearly indicates that the site consisted of a mosaic of grassland and vernal pool/vernal swale habitats, not unlike the property bordering the site to the north. Prior to its conversion to an orchard in 1978, the soils of the site would have been deep-ripped to break up any subsurface hardpan that may have been present. While deep ripping and subsequent discing has smoothed out the minor topography associated with vernal pools and the interconnecting swales, the property has retained some of its rolling terrain. A few discontinuous swales and low-lying areas at various locations of the site are all that remain of the site's natural topography. Numerous shallow depressions within the orchard capture irrigation runoff during the summer, and these depressions are sometimes characterized by algal mats and/or weedy vegetation that either includes or is made up of wetland indicator species. The soils of such areas, however, are not typically hydric. One swale relict met all three technical criteria for jurisdictional wetlands. This segment collects and holds irrigation water through much of the summer growing season. It is, however, hydrologically isolated from waters of the U.S. Therefore, while it is believed that this feature is not a water of the U.S., it would nonetheless be considered a water of the State subject to the RWQCB's jurisdiction.

A swale passes through the northwest corner of the study area. This swale is part of a USGS blue line tributary of Schmidt Creek that drains a large area of vernal swales/vernal pools located to the north of the study area. On the site itself, a defined channel bed and bank was not present at the time of the field survey, nor was a defined bed and bank observed in 2006. Because it lacks a defined bed and bank and does not have indicators of an OHW mark, it should not be considered a tributary water or a water of the U.S.

3.0 IMPACTS AND MITIGATION MEASURES

3.1 SIGNIFICANCE CRITERIA

Approval of general plans, area plans, and individual development projects that require discretionary approvals are subject to the provisions of the California Environmental Quality Act (CEQA). The overarching purposes of CEQA are to assess and disclose the potential impacts of proposed projects on the environment before they are carried out to facilitate informed decision making. CEQA is concerned with the significance of a proposed project's impacts. For example, a proposed development project may require the removal of some or all of a site's existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc., may replace those species formerly occurring on the site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed.

Whenever possible, public agencies are required to avoid or minimize environmental impacts by implementing practical alternatives or mitigation measures. According to Section 15382 of the CEQA Guidelines, a significant effect on the environment means a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest."

Specific project impacts to biological resources may be considered "significant" if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make a "mandatory findings of significance" if the project has the potential to

> Substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory.

3.2 REGULATORY FRAMEWORK: RELEVANT GOALS, POLICIES, AND LAWS

3.2.1 Threatened and Endangered Species

State and federal endangered species legislation has provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal endangered species acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as "species of special status." Permits may be required from the CDFW and/or USFWS if activities associated with a proposed project will result in the "take" of a listed species. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFW and the USFWS are responsible/trustee agencies under the California Environmental Quality Act (CEQA). Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.2.2 Migratory Birds

State and federal laws also protect most birds. The Federal Migratory Bird Treaty Act (16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

Migratory birds and their nests are also protected in California under the provisions of sections 3503 and 3513 of the California Fish and Game Code. Section 3503 of the Fish and Game Code makes it "unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." Section 3513 of the California Fish and Game Code makes it unlawful to "take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty Act."

3.2.3 Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5, which states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

3.2.4 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 U.S.C., scc. 668-668c) prohibits anyone from taking bald or golden eagles, including their parts, nests, or eggs, unless authorized under a federal permit. The act prohibits any disturbance that directly affects an eagle or an active eagle nest. The act also prohibits any disturbance caused by humans around a previously used nest site during a time when eagles are not present, if, upon its return, the disturbance agitates or bothers

an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

3.2.5 Bats

Section 2000 and 4150 of the California Fish and Game Code states that it unlawful to take or possess a number of species, including bats, without a license or permit as required by Section 3007. Additionally, Title 14 of the California Code of Regulations states it is unlawful to harass, herd, or drive a number of species, including bats. To harass is defined as "an intentional act which disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering."

3.2.6 Wetlands and Other Jurisdictional Waters

Natural drainage channels and adjacent wetlands may be considered "waters of the United States" (hereafter referred to as "jurisdictional waters") subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands:
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e., the bulleted items above);
- The territorial seas; and
- Wetlands adjacent to waters (other than waters which are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section (i.e., the bulleted items above).

As determined by the United States Supreme Court in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (i.e., the SWANCC decision), channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. However, the U.S Supreme Court decisions *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers* (referred together as the Rapanos decision) impose a "significant nexus" test for federal jurisdiction over wetlands. In June 2007, the USACE and Environmental Protection Agency (EPA) established guidelines for applying the significant nexus standard (USACE and EPA 2007a). This standard includes 1) a case-by-case analysis of the flow characteristics and functions of the tributary or wetland to determine if they significantly affect the chemical, physical, and biological integrity of downstream navigable waters; and 2) consideration of hydrologic and ecologic factors (USACE and EPA 2007b).

The USACE has jurisdiction over waters of the U.S. under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by “ordinary high water marks” on opposing channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils saturated intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008).

All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE (Wetland Training Institute, Inc. 1991). Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards. The filling of isolated wetlands, over which the USACE has disclaimed jurisdiction under the SWANCC decision, is regulated by the RWQCB. It is

unlawful to fill isolated wetlands without filing a Notice of Intent with the RWQCB. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System (NPDES) permits, including the General Construction Activity Storm Water Permit. All projects requiring federal money must also comply with Executive Order 11990 (Protection of Wetlands).

The California Department of Fish and Wildlife has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that would disturb these drainages are regulated by the CDFW via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented that protect the habitat values of the drainage in question.

3.2.7 Local Policies and Ordinances

No known local ordinances or habitat conservation plans are in effect for this project.

3.3 IMPACTS AND MITIGATION MEASURES SPECIFIC TO THE PROJECT SITE

The following analysis assumes that the site would be developed as a master-planned community, as currently described in the Castellina Specific Plan and represented in the site plans provided by Kimley-Horn & Associates, Inc. (2016). Any substantial and material difference in either scope or general location of the proposed project would require an additional impact assessment to ensure that all project impacts to biotic resources are fully analyzed and disclosed.

3.3.1 Loss of Habitat for Special Status Plants

Potential Impacts. Eighteen special status plant species were evaluated for their potential to occur on the site, based on their ecology and regional occurrences (Table 2). It was determined, based on the absence of suitable habitat on the site, that all eighteen species were absent from the site. The proposed project would have no effect on these species because they are not present on the site.

Mitigation. Mitigation measures are not warranted.

3.3.2 Loss of Habitat for Special Status Animals

Potential Impacts. Seventeen special status animal species occur, or once occurred, regionally (Table 2). Most special status animal species known to occur in the region would not be affected by proposed project buildout because of the absence of suitable habitat from the site or surrounding lands and/or because of the site's distance to known populations. Agricultural activities have altered the site's landscape, rendering it unsuitable for many of these species. Species that are absent from or unlikely to occur on the site include the vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, California tiger salamander, western spadefoot, western pond turtle, blunt-nosed leopard lizard, coast horned lizard, Fresno kangaroo rat, and American badger would not occur on the site. It is unlikely that the San Joaquin kit fox would occur onsite due to current land use activities and the lack of known populations in the vicinity of the City of Madera. The pallid bad and most special status avian species (i.e., Swainson's hawk, bald eagle, golden eagle, and tricolored blackbird) would also be unlikely to occur onsite incidental to their home range and migratory movements because the property does not provide optimal foraging, breeding, or roosting habitat. Project buildout would result in a less-than-significant impact to habitat for these species.

The site provides suitable, albeit limited, habitat for the western burrowing owl. The site provides poor foraging habitat for the western burrowing owl due to the lack of open habitat on the site itself. However, the site provides suitable, albeit very limited, nesting habitat for the burrowing owl, which could nest in the ground squirrel burrows along the northern fence line adjacent to the open rangeland habitat and forage on lands immediately north of the site. Therefore, project buildout would not result in the loss of foraging habitat but would result in a small reduction of potential nesting habitat. This loss of habitat would be considered less than significant. Additionally, construction activities may result in harm to individual burrowing owls, which would be considered significant (section 3.3.3).

Mitigation. Mitigation to compensate for the loss of habitat for special status species is not warranted.

While impacts to habitat are considered less-than-significant, construction of the project could harm individual burrowing owls. Mitigation measures to specifically avoid and minimize these potential impacts to individuals are discussed in section 3.3.3.

3.3.3 Impacts to Western Burrowing Owl

Potential Impacts. The project will result in a less-than-significant impact to habitat for burrowing owls. However, although no direct or indirect evidence of burrowing owls was observed on the site, a very limited amount of potential nesting habitat for burrowing owls is present along the site's boundaries, particularly the northern boundary. If a burrowing owl were to nest on the site prior to the start of construction, construction activities could result in the abandonment of active nests or direct mortality to these birds. Construction activities that adversely affect the nesting success or result in mortality of individual owls would be considered a significant impact under CEQA.

Mitigation. In order to reduce impacts to burrowing owls to a less-than-significant level, the following measures should be implemented as necessary prior to site grading:

> ***Pre-construction Surveys.*** In order to avoid impacts to active burrowing owl nests, a qualified biologist should conduct pre-construction surveys for burrowing owls within the project footprint and within 250 ft of the project footprint no more than 14 days prior to the onset of ground disturbance. These surveys should be conducted in a manner consistent with the CDFW's burrowing owl survey methods (CDFW 2012).
>
> ***Avoidance of Active Nests During Breeding Season.*** If burrowing owls are detected within or immediately adjacent to the project footprint during the breeding season (February 1 through August 31), a construction-free buffer of up to 250 ft should be established around all active owl nests. The buffer area should be enclosed with temporary fencing, and construction equipment and personnel should not enter the enclosed setback areas. Buffers should remain in place for the duration of the breeding season or until it has been confirmed by a qualified biologist that all chicks have fledged and are independent of their parents. After the breeding season, passive relocation of any remaining owls may take place under the conditions described below.
>
> ***Avoidance of Occupied Burrows During Non-breeding Season, and Passive Relocation of Resident Owls.*** During the non-breeding season (September 1 through January 31), any burrows occupied by resident owls in areas planned for development should be protected by a construction-free buffer with a radius of up to 250 ft around each active burrow. Passive relocation of resident owls is not recommended by CDFW where it can be avoided. If passive relocation is not avoidable, resident owls may be passively relocated according to a relocation plan prepared by a qualified biologist.

Compliance with the above mitigation measures would reduce impacts to burrowing owls to a less-than-significant level.

Regulatory issues. No permit or consultation is required from CDFW to conduct preconstruction surveys, establish construction free buffers nor in the development of a passive relocation plan.

3.3.4 Impacts to Migratory Birds and Other Birds of Prey

Potential Impacts. While no stick nests were observed during the March 2016 survey, raptors and migratory birds could establish nests in the eucalyptus trees along the southern boundary of the property. Construction activities could interfere with their breeding success due to the proximity of the trees to the project footprint. Birds may also nest in the orchards, although they may be less likely to do so because of ongoing disturbances associated with orchard maintenance. However, one cannot rule out the possibility of a bird nesting in an orchard tree. If a migratory bird or other bird of prey were to nest on or adjacent to the site prior to or during construction, such activities could disrupt nesting behavior and result in the abandonment of active nests or direct mortality or other harm to these birds. This would be considered a significant impact.

Mitigation. In order to minimize construction disturbance to active raptor and other bird nests, the following measure(s) should be implemented as necessary prior to initial site disturbance:

> ***Tree Removal.*** To the maximum extent practicable, trees planned for removal should be removed during the non-breeding season (September 1 through January 31).
>
> ***Pre-construction Surveys*.** If tree removal, grading, or construction is planned to occur within the breeding period (i.e., between February 1 and August 31), a qualified biologist should conduct pre-construction surveys in the eucalyptus trees adjacent to the site for active nests of birds of prey and migratory birds within 14 days of the onset of these activities. If construction is planned to commence outside the breeding period, no pre-construction surveys are required for nesting birds and raptors.
>
> ***Establish Buffers*.** If nesting raptors or other migratory birds are detected in the eucalyptus trees adjacent to the site during the survey, a suitable construction-free buffer should be established around all active nests. The precise dimension of the buffer, which is typically up to 250 ft, would be determined at that time and may vary depending on such factors as location, species, topography, and line of sight to the construction area. The buffer area should be enclosed with temporary fencing, and construction equipment and personnel should not enter the enclosed area. Buffers should remain in place for the

duration of the breeding season or until it has been confirmed by a qualified biologist that all chicks have fledged and are independent of their parents.

Implementation of the above measures would ensure that construction of the project would have no impact on nesting raptors and migratory birds and that the project would be in compliance with state and federal laws protecting these species.

3.3.5 Impacts to San Joaquin Kit Fox

Potential Impacts. Given the lack of recent occurrences in the region, it is highly unlikely that the San Joaquin kit fox would ever occur on the site. At most, a dispersing individual may move through the site to access more suitable habitat in the region, but this is expected to be an extremely rare event given the lack of evidence that kit foxes are extant in the region. Therefore, while San Joaquin kit foxes are highly unlikely to occur on the site, construction-related activities may result in harm or injury to individual kit foxes were an errant individual to wander onto the site.

Mitigation. The small possibility of the San Joaquin kit fox's occurrence on the project site warrants prudent protection measures, should any individuals wander onto the site at the time of associated construction activities. As such, we recommend that the following measures be implemented:

- Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance, construction activities, and/or any project activity likely to impact the San Joaquin kit fox. The primary objective is to identify kit fox habitat features (e.g., potential dens and refugia) on the project site and evaluate their use by kit foxes. If an active kit fox den is detected within or immediately adjacent to the area of work, the USFWS shall be contacted immediately to determine the best course of action for proceeding with work.

- Permanent and temporary construction activities and other types of project-related activities should be carried out in a manner that minimizes disturbance to kit foxes, should their presence be detected on the site during pre-construction surveys. Minimization measures include, but are not limited to: restriction of project-related vehicle traffic to established roads, construction areas, and other designated areas; inspection and covering of structures (e.g., pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash.

- The Sacramento field office of the USFWS and the Fresno field office of CDFW will be notified in writing within three working days in case of the accidental death or injury to a San Joaquin kit fox during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

Implementation of these measures would further minimize the already low risk that construction activities would result in mortality to individual kit foxes.

3.3.6 Disturbance to Waters of the United States, Other Jurisdictional Waters, or Riparian Habitats

Potential Impacts. Riparian habitats are absent from the site. Pending verification from the USACE, it is presumed that waters of the U.S. are also absent from the site. However, waters of the State are presumed to be present on the site in the form of a seasonal, irrigated wetland in the northwest part of the property.

The seasonal, irrigated wetland is typical of wetlands formed as a result of agricultural operations. It occurs within a swale segment that is a relic of the site's historical topography. Precipitation likely pools in this feature during the wet season, but, unlike smaller shallow depressions on the site, it also collects and holds irrigation water through much of the summer growing season. It supports weedy vegetation that includes wetland indicator species. This feature has little value as a wetland habitat and does not support hydrophytic plants or wildlife species typical of such habitats that naturally occur in the region. Therefore, impacts to wetlands on the site would be considered less than significant.

Mitigation. Mitigation measures are not warranted.

Regulatory issues. The project proponent must comply with all state and federal laws and regulations related to disturbance to jurisdictional waters. Should the seasonal, irrigated wetland be determined to be a jurisdictional wetland, the project proponent would be required to obtain a section 401 water quality certification from the RWQCB prior to initiating any construction within this feature. The project proponent would need to satisfy all agency mitigation requirements to compensate for impacts.

3.3.7 Interference with the Movement of Native Wildlife

Potential Impacts. The site does not function as a movement corridor for native wildlife, although species potentially move within and through it. Site development is not expected to have a significant effect on home range and dispersal movements of native wildlife that occur on the site. Many migratory species that now pass through the study area are neo-tropical migrant birds that are likely to pass through and over the site, even when it is eventually developed. A considerable amount of rangelands and agricultural lands adjacent to and in the vicinity of the site will continue to be used by native species for home range and dispersal movements. Therefore, the proposed project will result in a less-than-significant effect on the movements of native wildlife.

Mitigation. Mitigation measures are not warranted.

3.3.8 Loss of Habitat for Native Wildlife

Potential Impacts. The proposed project would result in the permanent loss of approximately 794 ac of orchards. While orchards provide some habitat for regional wildlife populations, these lands are not of unique or particularly significant value to such populations. After project completion, large areas of agricultural habitats will remain in the region. This suggests that the project, when considered by itself, will neither result in a wildlife population dropping below self-sustaining levels nor threaten to eliminate an animal community. Therefore, conversion of agricultural habitats of the site would not constitute a significantly adverse impact on wildlife resources.

Mitigation. Mitigation measures are not warranted.

3.3.9 Degradation of Water Quality in Seasonal Drainages, Reservoirs, and Downstream Waters

Potential Impacts. Proposed construction activities can result in soils temporarily left barren on the site. Extensive grading often leaves the soils of construction zones barren of vegetation and, therefore, vulnerable to sheet, rill, or gully erosion. Eroded soils may be carried as sediment in

surface runoff to be deposited in downstream waters and adjacent wetlands. Furthermore, urban runoff is often polluted with grease, oil, residues of pesticides and herbicides, heavy metals, and other pollutants, which may eventually be carried to sensitive wetland habitats used by a diversity of native wildlife species.

The project proponent is expected to comply with the provisions of a grading permit and other applicable permits, including standard erosion control measures that employ best management practices (BMPs). Projects involving the grading of large tracts of land must also be in compliance with provisions of a General Construction permit (a type of NPDES permit) available from the California Regional Water Quality Control Board. Compliance with such permits should result in no impact to water quality in seasonal creeks, reservoirs, and downstream waters from the proposed project and should not result in the deposition of pollutants and sediments in sensitive riparian and wetland habitats.

Mitigation. Mitigation measures are not warranted.

3.3.10 Degradation of Downstream Aquatic Habitats

Potential Impacts. The project proposes a water resources management plan that uses no more groundwater than is recharged to the aquifer (Tully & Young 2016). Part of the groundwater recharge will come from impounding water entering the project site from the Schmidt Creek tributary in the site's northwest corner. The Schmidt Creek tributary drains a large area of vernal swales and vernal pools located to the north of the site. On the site itself, the Schmidt Creek tributary is a broad swale that leads to a culvert and daylights to another swale on the west side of Road 27. Swales are generally a physical indicator of infrequent or low volumes of surface flow. There is no physical evidence of frequent, large volumes of water entering the onsite swale from the north or of the site contributing large volumes of water downstream; in such cases, one would expect to see indicators of flow within a defined channel. The offsite swale west of Road 27 extends past several homes, and standing water is present there during the winter and spring that may provide aquatic habitat or a source of drinking water for local wildlife. Given that water was present in the offsite swale in March 2016 but no surface water was present on the site in March 2016, the contribution of water coming from onsite or upstream of the site is minimal

compared to the contribution of stormwater coming directly from precipitation and from sheet flow or directed flow coming from lands immediately surrounding the swale or other lands in the region. Therefore, the effects to downstream aquatic habitats as a result of impounding water entering the project site from the Schmidt Creek tributary would be considered less than significant.

Mitigation. Mitigation measures are not warranted.

3.3.11 Local Ordinances or Habitat Conservation Plans

No local ordinances, HCPs, or NCCPs are known to be in effect for this project.

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APPENDIX A: REPRESENTATIVE SITE PHOTOS

Almond orchard. Photo taken March 31, 2016.

Fig orchard. Photo taken March 31, 2016.

Metal structure. Photo taken July 14, 2016.

Seasonal/irrigated wetland swale within the almond orchard. Photo taken July 14, 2016.

APPENDIX B: VASCULAR PLANTS OF THE STUDY AREA

The plants species listed below were observed on the Herman Property/Castellina site during field surveys conducted by Live Oak Associates on December, 2, 2006, and on March 31 and July 14, 2016. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland

AMARANTHACEAE – Amaranthus Family		
*Amaranthus albus**	Tumbleweed	FACU
Amaranthus blitoides	Mat amaranth	FACU
ASTERACEAE – Sunflower Family		
*Cichorium intybus**	Chicory	FACU
Erigeron canadensis	Canadian horseweed	FAC
*Lactuca serriola**	Prickly lettuce	FACU
Lasthenia sp.	Goldfields	-
Matricaria occidentalis	Pineappleweed	FACW
*Senecio vulgaris**	Common groundsel	FACU
*Sonchus asper**	Prickly sowthistle	FAC
BORAGINACEAE – Borage Family		
Plagiobothrys sp.	Popcornflower	-
BRASSICACEAE – Mustard Family		
*Brassica nigra**	Black mustard	UPL
*Capsella bursa-pastoris**	Shepherd's purse	FACU
CARYOPHYLLACEAE – Pink Family		
*Stellaria media**	Chickweed	FACU
CHENOPODIACEAE – Goosefoot Family		
*Chenopodium album**	Lamb's-quarters	FACU
*Salsola tragus**	Russian thistle	FACU
CYPERACEAE – Sedge Family		
Cyperus eragrostis	Tall flatsedge	FACW
Eleocharis macrostachya	Common spikerush	OBL
EUPHORBIACEAE – Spurge Family		
Croton setiger	Doveweed	UPL
FABACEAE – Legume Family		
*Medicago polymorpha**	Burclover	FACU
GERANIACEAE – Geranium Family		
*Erodium cicutarium**	Redstem filaree	UPL
*Erodium moschatum**	Whitestem filaree	UPL
LYTHRACEAE – Loosestrife Family		
*Lythrum hyssopifolium**	Hyssop loosestrife	OBL

*Punica granatum**	Pomegranate	UPL
MALVACEAE – Mallow Family		
*Malva parviflora**	Cheeseweed	UPL
MOLLUGINACEAE – Carpetweed Family		
*Mollugo verticillata**	Green carpetweed	FACU
MORACEAE – Mulberry Family		
*Ficus carica**	Edible fig	UPL
MYRSINACEAE – Myrsine Family		
*Anagallis arvensis**	Scarlet pimpernel	FAC
ONAGRACEAE – Evening Primrose Family		
Epilobium brachycarpum	Willow herb	FACU
PLANTAGINACEAE – Plantain Family		
*Plantago lanceolata**	English plantain	FAC
POACEAE – Grass Family		
Avena sp.*	Oat	UPL
Bromus carinatus	California brome	UPL
*Bromus diandrus**	Ripgut brome	UPL
*Bromus hordeaceus**	Soft chess	FACU
*Chloris virgata**	Feather windmill grass	FACU
*Crypsis schoenoides**	Swamp timothy	OBL
*Cynodon dactylon**	Bermuda grass	FACU
Echinochloa crus-galli	Barnyard grass	FACW
*Festuca myuros**	Rattail fescue	FACU
Hordeum marinum ssp. *gussoneaum**	Mediterranean barley	FAC
*Hordeum murinum**	Foxtail barley	FACU
Leptochloa fusca	Sprangletop	UPL
Panicum sp.	Panicgrass	-
*Poa annua**	Annual bluegrass	FACU
*Polypogon monospeliensis**	Rabbitsfoot grass	FACW
POLYGONACEAE – Knotweed Family		
Polygonum aviculare ssp. *depressum**	Common knotweed	FAC
*Rumex crispus**	Curly dock	FAC
*Rumex pulcher**	Fiddle dock	FAC
ROSACEAE – Rose Family		
*Eriobotrya japonica**	Loquat	UPL
*Prunus dulcis**	Cultivated almond	UPL
SALICACEAE – Willow Family		
Salix sp.	Willow	-
SOLANACEAE – Nightshade Family		
Datura wrightii	Jimsonweed	UPL
ZYGOPHYLLACEAE - Caltrop Family		
*Tribulus terrestris**	Puncture vine	UPL

* Introduced non-native species

APPENDIX C: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE STUDY AREA

The species listed below are those that may reasonably be expected to occur on the Herman Property/Castellina site. The list is not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed on or adjacent to the site on December, 2, 2006, and March 31, 2016, have been noted with an asterisk.

CLASS AMPHIBIA (Amphibians)
ORDER ANURA (Frogs and Toads)
FAMILY BUFONIDAE (True Toads)
Western toad — *Bufo boreas*
FAMILY HYLIDAE (Tree Frogs and Relatives)
Pacific treefrog — *Hyla regilla*
FAMILY RANIDAE (True Frogs)
*****Bullfrog — *Lithobates catesbeiana*

CLASS REPTILIA (Reptiles)
ORDER SQUAMATA (Lizards and Snakes)
FAMILY ANGUIDAE (Alligator Lizards and relatives)
Southern alligator lizard — *Elgaria multicarinata*
FAMILY PHRYNOSOMATIDAE (Spiny lizards)
Side-blotched lizard — *Uta stansburiana*
Western fence lizard — *Sceloporus occidentalis*
FAMILY COLUBRIDAE (Harmless egg-laying snakes)
Racer — *Coluber constrictor*
Coachwhip — *Coluber flagellum*
Glossy snake — *Arizona elegans*
Gopher snake — *Pituophis catenifer*
Common kingsnake — *Lampropeltis getula*
Long-nosed snake — *Rhinocheilus lecontei*
FAMILY NATRICIDAE (Harmless live-bearing snakes)
Common garter snake — *Thamnophis sirtalis*
FAMILY CROTALIDAE (Pitvipers)
Western rattlesnake — *Crotalis oreganus*

CLASS AVES (Birds)
ORDER ACCIPITRIFORMES (Hawks, Kites, Eagles, and Allies)
FAMILY CATHARTIDAE (New World Vultures)
*Turkey vulture — *Cathartes aura*
FAMILY ACCIPITRIDAE (Hawks, Kites, Eagles, and Allies)
Rough-legged hawk — *Buteo lagopus*
Ferruginous hawk — *Buteo regalis*
*Red-tailed hawk — *Buteo jamaicensis*
White-tailed kite — *Elanus leucurus*
Northern harrier — *Circus cyaneus*

ORDER FALCONIFORMES (Caracaras and Falcons)
FAMILY FALCONIDAE (Caracaras and Falcons)

Prairie falcon	*Falco mexicanus*
Merlin	*Falco columbarius*
American kestrel	*Falco sparverius*

ORDER COLUMBIFORMES (Pigeons and Doves)
FAMILY COLUMBIDAE (Pigeons and Doves)

Rock pigeon	*Columba livia*
*Mourning dove	*Zenaida macroura*

ORDER STRIGIFORMES (Owls)
FAMILY TYTONIDAE (Barn Owls)

Barn owl	*Tyto alba*

ORDER APODIFORMES (Swifts and Hummingbirds)
FAMILY TROCHILIDAE (Hummingbirds)

*Anna's hummingbird	*Calypte anna*

ORDER PICIFORMES (Woodpeckers and Relatives)
FAMILY PICIDAE (Woodpeckers and Allies)

*Northern flicker	*Colaptes auratus*

ORDER PASSERIFORMES (Perching Birds)
FAMILY TYRANNIDAE (Tyrant Flycatchers)

Western kingbird	*Tyrannus verticalis*
Say's phoebe	*Sayornis saya*
*Black phoebe	*Sayornis nigricans*

FAMILY LANIIDAE (Shrikes)

Loggerhead shrike	*Lanius ludovicianus*

FAMILY CORVIDAE (Jays, Magpies and Crows)

*Western scrub-jay	*Aphelocoma californica*
Yellow-billed magpie	*Pica nuttallii*
*American crow	*Corvus brachyrhynchos*
Common raven	*Corvus corax*

FAMILY HIRUNDINIDAE (Swallows)

Tree swallow	*Tachycineta bicolor*
Violet-green swallow	*Tachycineta thalassina*
Northern rough-winged swallow	*Stelgidopteryx serripennis*
Cliff swallow	*Petrochelidon pyrrhonota*
Barn swallow	*Hirundo rustica*

FAMILY TURDIDAE (Thrushes)

*American robin	*Turdus migratorius*
Mountain bluebird	*Sialia currucoides*

FAMILY MIMIDAE (Mockingbirds and Thrashers)

*Northern mockingbird	*Mimus polyglottos*

FAMILY STURNIDAE (Starlings and Allies)

European starling	*Sturnus vulgaris*

FAMILY ICTERIDAE (Blackbirds, Orioles and Allies)

Brown-headed cowbird	*Molothrus ater*
Brewer's blackbird	*Euphagus cyanocephalus*

FAMILY FRINGILLIDAE (Finches)
*House finch — *Haemorhous mexicanus*
FAMILY PASSERIDAE (Old World Sparrows)
House sparrow — *Passer domesticus*

CLASS MAMMALIA (Mammals)
ORDER CHIROPTERA (Bats)
FAMILY VESPERTILIONIDAE (Evening Bats)
Pallid bat — *Antrozous pallidus*
FAMILY MOLOSSIDAE (Free-tailed Bats)
Brazilian free-tailed bat — *Tadarida brasiliensis*
ORDER RODENTIA (Rodents)
FAMILY SCIURIDAE (Squirrels, Chipmunks, and Marmots)
*California ground squirrel — *Otospermophilus beecheyi*
FAMILY CRICETIDAE (Mice, Rats and Voles)
Deer mouse — *Peromyscus maniculatus*
California vole — *Microtus californicus*
ORDER CARNIVORA (Carnivores)
FAMILY: CANIDAE (Foxes, Wolves and Relatives)
*Domestic dog — *Canis familiaris*
*Coyote — *Canis latrans*
Red fox — *Vulpes vulpes*
FAMILY: FELIDAE (Cats)
Feral cat — *Felis catus*

D-2 Habitat Assessments for California Tiger Salamander and Vernal Pool Fairy Shrimp on the Herman Property

LIVE OAK ASSOCIATES, INC.
an Ecological Consulting Firm

June 12, 2019

Mr. Glenn Pace
Castellina, LLC
175 East Main Avenue, Suite 110
Morgan Hill, CA 95037

Subject: Habitat assessments for California tiger salamander and vernal pool fairy shrimp on the Herman property in Madera County, California (PN 995-03)

Dear Mr. Pace:

Live Oak Associates, Inc. (LOA), has prepared this letter report discussing the results of the habitat assessments that were completed for the Herman property in Madera County, California. A habitat assessment was completed of the site and surrounding properties by LOA associate herpetologist Dr. Mark Jennings for California tiger salamanders (*Ambystoma californiense*; CTS) and by LOA wildlife biologist Jeff Gurule for the vernal pool fairy shrimp (*Branchinecta lynchi*), both of which are listed as threatened under the federal Endangered Species Act. CTS are also listed as threatened under California's Endangered Species Act.

The purpose of the assessments was to determine if conditions on the site or immediately surrounding lands have changed in a manner that would possibly change the assessment of California tiger salamander and vernal pool fairy shrimp occurrence on the project site that was made in 2007 by LOA and the U.S. Fish and Wildlife Service (2007) and again by LOA in 2017. In October 2007, the USFWS issued a "no take" letter concurring with LOA's finding that 1) the site does not constitute breeding habitat and only marginal aestivation habitat for CTS and 2) the site does not constitute habitat for vernal pool branchiopods. The renewed assessments follow the occurrence of California tiger salamanders and vernal pool fairy shrimp discovered in 2016/2017 during surveys of the high-speed train (HST) alignment adjacent to and across the western end of the Herman property, along Road 27 and the Burlington Northern Santa Fe (BNSF) Railway.

Recent CNDDB Occurrences

According to the California Natural Diversity Database (CNDDB), two occurrences from 2016/2017 of CTS were documented along the BNSF Railway during construction monitoring within the HST alignment. One occurrence was located near the southwest corner of the Herman property along the railroad, where two adults and juveniles were found and relocated

(CNDDB occurrence #1250), and the other occurrence was approximately 0.5 mi south of the Herman property along the railroad, where hundreds of larvae were observed (CNDDB occurrence #1259).

Two occurrences of vernal pool fairy shrimp near the Herman property were also reported to the CNDDB. Vernal pool fairy shrimp were detected in January 2017 near the southwest corner of the Herman property, near—or possibly in the same location—where CTS were detected (CNDDB occurrence #907). The other occurrence is also from 2017, less than 0.5 miles west of the site (CNDDB occurrence #902).

Existing Conditions

Land uses on the site and immediately surrounding lands to the north, east, and south were found to be essentially unchanged from previous years. Land use on the site continues to consist of almond and fig orchard operations across the entire site. Land use to the north continues to be undisturbed rangeland supporting a number of vernal pools and swales, some of which abut the Herman property; land use to the east and south continues to be orchards; and land use to the southwest continues to be rural residential land. However, approximately 100 ft of the western edge of the Herman property has experienced recent impacts from the HST in the form of orchard tree removal, grading, the installation of CTS fencing, and the installation of a new culvert beneath Road 27. Impacts from HST construction extend along the Road 27 alignment southwest of the Herman Property.

California Tiger Salamander (*Ambystoma californiense*)

A habitat assessment for California tiger salamanders (CTS) was completed by Dr. Jennings on April 25, 2019, at which time he walked the perimeter of the Herman property and portions of adjacent areas (i.e., the railroad track corridor along a portion of the property's western edge). In particular, Dr. Jennings focused on the distribution of small mammal burrows and California ground squirrels (*Otospermophilus beecheyi*) on and adjacent to the property.

Dr. Jennings observed Pacific treefrog (*Hyla regilla*) larvae in several ponds along the railroad track corridor. These ponds are presumed to be CTS breeding ponds. Several potential California tiger salamander breeding ponds were also present in the adjacent field along and near the northern edge of the property, and California ground squirrel and Botta's pocket gopher (*Thomomys bottae*) burrows were observed along and near the northern fence line. Dr. Jennings also noted a colony of California ground squirrels in the woody debris pile on the adjacent property near the southeast corner. On the Herman property itself, ground squirrel burrows were present but limited onsite and were mostly concentrated along the northern boundary.

Although the fully developed orchards on the Herman property are not habitat for California tiger salamanders, the presence of any small mammal burrows on the property could potentially provide suitable aestivation habitat for any juvenile and adult California tiger salamanders from surrounding breeding habitats located just off-site. This is especially true for any juvenile salamanders that disperse away from breeding pond sites with the onset of the winter rainy season. Otherwise, there is no reason for salamanders to attempt to utilize the property.

The most effective option to prevent any California tiger salamanders from potentially utilizing the site is to install a low "salamander fence" on the north, south, and west sides to prevent any salamanders from entering the property. However, this is likely not an economical option for a property of this size. A more economical approach would be to implement a rodent control program, as part of regular farming activities, to plug any rodent burrows as they are observed and prevent ground squirrels and gophers from digging new burrows. This could include trapping any gophers or squirrels as soon as a new burrow is discovered and then plugging such burrows with dirt. Additionally, the use of poison grain bait stations, which appears to already be used on site, could continue by being placed near any areas where California ground squirrels continue to be present (e.g., the north side of the property and the southeast corner). The use of poison gas to kill rodents in their burrows is not recommended.

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)

On April 24, 2019, Mr. Gurule conducted a driving survey of the project site and examined the offsite 2017 vernal pool fairy shrimp occurrence southwest of the Herman property. Occasional areas of interest were investigated on foot. Photographs taken during the survey are included as Attachment 1.

Based on the coordinates provided in the CNDDB, the location of CNDDB occurrence #907 is southwest of the intersection of the existing BNSF railway and Road 27, approximately 215 ft southwest of the site. Investigation of this location found the area to be highly disturbed from HST construction activities. Ponded areas at this location, visible on historical aerial imagery and apparently the location of the 2017 vernal pool fairy shrimp occurrence, no longer exist. The area has been graded and is within the HST construction zone. Aerial images illustrating the change in conditions at this location are presented in Attachment 2. Standing water was observed along the northeast side of the existing railway, between the railway and the fence line to the site. While not visible during the survey due to no access of the HST construction area, ponded water on the southwest side of the railway is presumed to persist as aerial images show this area supporting a similar inundation regime as the ponded area north of the railway.

Conclusions

The Herman property does not constitute California tiger salamander breeding habitat and only marginal aestivation habitat in the few areas where small mammal burrows exist. The site would not constitute aestivation habitat if adequate steps are taken to ensure that burrowing rodents do not encroach within the property boundaries and also that any small mammal burrows discovered are plugged as soon as possible.

The location of the 2017 vernal pool fairy shrimp occurrence southwest of the site has been altered such that conditions suitable for fairy shrimp no longer exist at the location in which they were found. Presumably, the HST fairy shrimp survey covered the linear area of ponded water on both sides of the existing railway east of Road 27, as these features are, at least partially, within the HST right-of-way and have the potential to be impacted by HST construction. Presumably, the surveys did not find vernal pool fairy shrimp in these pools, although it is not clear from the CNDDB record whether protocol surveys were conducted. It is possible that once vernal pool fairy shrimp were discovered at the location of CNDDB occurrence #907, all other potentially suitable habitat was presumed occupied. While the linear area of ponded water along

the existing railway was found to continue to support water during the April 2019 site assessment, it is doubtful these aquatic features support vernal pool fairy shrimp due to the ruderal nature of these pools and the presumed absence of fairy shrimp in these pools during 2017 HST surveys. In the unlikely event that vernal pool fairy shrimp occur here, there is no hydrologic connectivity between these pools and the Herman property, with the southern pool further separated from the Herman property by the raised bed of the railway.

Based on the April 2019 site assessments, review of recent CNDDB CTS and vernal pool fairy shrimp occurrences, and historic aerial imagery, we find no reason to believe that the assessment of CTS and listed branchiopod occurrence on the site made by LOA in 2007 and 2017, and by the USFWS in their concurrence letter from 2007, would not hold true today.

If you have any questions regarding our findings, please contact me at (408) 281-5886 or via email at dohlson@loainc.com.

Sincerely,

Davinna Ohlson, M.S.
Senior Project Manager
Staff Ecologist

References

U. S. Fish and Wildlife Service (USFWS). 2007. Letter from Peter A. Cross to Melissa Denena. Sacramento, CA. October 29, 2007.

ATTACHMENT 1: SITE PHOTOS

Photo 1. Typical orchard row on the Herman Property.

Photo 2. Rangeland to the north of the Herman Property with vernal pool in foreground against the Herman Property fence line.

Photo 3. One of many drainage swales within the Herman Property orchards. Such swales have existed since the orchard installation decades ago.

Photo 4. HST disturbance at western edge of Herman Property.

Photo 5. Ponded water along railway adjacent to the Herman Property. HST construction related fencing in foreground.

Photo 6. Pond supporting *B. lynchi* Occurrence No 907 was historically located where the pallets of wood and other construction material are stored in the background of the photo.

ATTACHMENT 2: HISTORIC AERIAL IMAGES


Herman Property Fairy Shrimp Assessment
March 2017 Aerial Photo
Legend
B. lynchi 2017 Occurence No 907
Rd 27
B. lynchi 2017 Occurence No 907
N
200 ft
Google Earth


Herman Property Fairy Shrimp Assessment
August 2018 Aerial Photo
Legend
B. lynchi 2017 Occurence No 907
Rd 27
B. lynchi 2017 Occurence No 907
Google Earth
© 2018 Google
N
200 ft

D-3 Protocol Surveys for Vernal Pool Fairy Shrimp and California Tiger Salamander Evaluation

LIVE OAK ASSOCIATES, INC.
an Ecological Consulting Firm

June 29, 2007

Jeffrey P. Jorgenson, Ph.D.
Endangered Species Program
U.S. Fish and Wildlife Service
2800 Cottage Way, W-2605
Sacramento, CA 95825-1846

RE: Results of the Protocol Level Branchiopod Wet Season Surveys and California Tiger Salamander Evaluation for the Herman Property, Madera County, California (PN 995-02)

Dear Jeff:

Live Oak Associates, Inc. (LOA) conducted protocol level branchiopod wet season surveys, with emphasis placed on vernal pool fairy shrimp (*Branchinecta lynchi*), and conducted an overall evaluation of site suitability for the California tiger salamanders (*Ambystoma californiense*) during the 2006/2007 rainy season on the approximately 793-acre Herman Property (APN #'s 031-221-001 and 031-222-01). The site is located in central Madera County, between Roads 27 and 28 ½, north of Avenue 17, with the Santa Fe Railway running along the southwestern boundary (Figure 1). The property is located primarily in the Kismet 7.5" U.S. Geological Survey (USGS) quadrangle, with the southern most portion of the site in the Madera 7.5' USGS quadrangle (Figure 2). The site can be found in portions of Sections 5 and 6 of Township 11 south, Range 18 east. The entire property currently consists of an active fig (*Ficus carica*) and almond (*Prunus amygdalus*) orchard that has been farmed for decades. However, the site has retained its rolling terrain in spite of agricultural practices; therefore, a few low-lying areas throughout the site pool water regardless of the ongoing anthropogenic influences.

Neither vernal pool fairy shrimp nor California tiger salamanders (CTS) have been documented on the property itself (Figure 3). The site has been farmed since well before the listing of the shrimp in 1994 and the salamander in 2004. The nearest documented occurrence of vernal pool fairy shrimp is approximately 1.5 miles from the site and the nearest documented occurrence of CTS is greater than 2.5 miles from the site. Nonetheless, the Herman Property was further analyzed during the 2006/2007 rainy season for the potential presence of these two species due to the historical evidence of the onsite soils exhibiting a hardpan layer resulting in the likelihood of scattered inundation, the presence of rolling terrain onsite regardless of agricultural practices, and the presence of natural rangeland supporting vernal pools immediately north and northeast of the site.

The results of our surveys and analysis are as follows.

Branchiopod Survey Results

Branchiopod surveys were conducted in accordance to the *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Brachiopods* (USFWS, April 19, 1996) with authorization from the U.S. Fish and Wildlife Service issued on January 24, 2007. Surveys were led by either Melissa Denena (TE-108681-0) and/or Austin Pearson (TE-108683-0) and occurred between February 2 and May 23, 2007, with reconnaissance surveys of the site beginning on December 2, 2006.

LOA surveyed the Herman Property for areas of inundation throughout the 2006/2007 rainy season. The entirety of the site remained dry until February 2, 2007, at which time a combination of storm and irrigation waters resulted in nine orchard pools totaling 3.8 acres in size becoming inundated (Figure 4; see datasheets and photos in back of letter). These nine orchard pools filled and dried throughout the sampling period, with all pools having been observed to be dry on May 23, 2007. Much of the water present in these nine pools was a result of excessive irrigation water runoff not storm water runoff due to the relatively dry rainy season. The 2006/2007 rainy season resulted in below average rainfall with an estimated rainfall average of approximately 50%. It is believed than many of these pools would likely become inundated solely due to storm water runoff in an average rainfall year. Nonetheless, the site has been manipulated for decades, with irrigation water running most months of the year resulting in the high likelihood of many of the low lying areas supporting runoff irrigation water in the peak of the dry season. Due to the excessive irrigation practice on the site, any vernal pool fairy shrimp that may have historically occurred onsite would not have persisted. Historic cyst banks that may have been present in the soils of the site would have rotted years ago when the irrigation system was originally installed.

Typically LOA would not recommend branchiopod surveys to be conducted within orchard habitat. However, the Herman Property is unique in that natural rangeland habitat occurs immediately to the north of the site. In fact, there are approximately four areas along the northern boundary where offsite vernal pools providing suitable habitat for vernal pool fairy shrimp abut the fenceline (see photos in back of letter). Where these vernal pools are present, onsite orchard trees closest to the boundary have not survived, likely due to over watering. It is believed that when the offsite vernal pools become fully inundated during high rainfall years, water overflows onsite the Herman Property either as surface flows under the fenceline and over an agricultural roadway or through a culvert present under the agricultural roadway between the vernal pool and the orchard. During the 2006/2007 rainy season, inundation was not observed in any of the onsite low lying areas along the northern boundary. In fact, only two of the offsite vernal pools along the northern boundary became inundated, but did not fill to a level where water overflowed onto the Herman Property. It is believed in years of above average rainfall, and possibly even average rainfall, some water from the vernal pools to the north of the site would overflow onto the Herman Property potentially carrying shrimp and/or shrimp cysts. However, it is not believed that the onsite low lying areas along the northern boundary support independent shrimp banks. If shrimp were to occur onsite along the northern boundary, their

presence would likely be the result of overflow from the vernal pools to the north and would persist only for that particular rainy season with a population not becoming established.

In summary, LOA believes that Federally protected branchiopod species, in particular the vernal pool fairy shrimp, are absent from the Herman Property. Any shrimp that would potentially occur onsite would 1) be a result of overflow from the vernal pools to the north, 2) be present in very low numbers, and 3) would persist only for one rainy season. The areas that pooled during the 2006/2007 rainy season were all orchard pools located south of the northern boundary that are highly unlikely to support shrimp. No shrimp were observed during the sampling effort put forth between February and May 2007. LOA recommends that a second season of sampling within these pools is unnecessary and that it should be determined that Federally protected branchiopod species are absent from the Herman Property based on the evidence provided.

California Tiger Salamander Results

The Herman Property does not support suitable breeding habitat for CTS onsite and provides marginal, at best, estivation habitat in the form of a few burrows along the boundaries of the site. Nonetheless, it was concluded that there was a small likelihood that a very low number of CTS could occur onsite from time to time. CTS have not been observed in the immediate vicinity of the site (i.e. within 2.5 miles), which reduces the likelihood of onsite occurrence even further. Regardless, LOA decided to gather additional data during the 2006/2007 rainy season to provide solid evidence as to the true lack of onsite suitability for this species.

The pools of the site are influenced by ongoing agricultural practices (i.e. continual maintenance, potential of polluted runoff, sporadic inundation, relatively small in size) and surrounded by orchard habitat. Therefore, suitable breeding habitat has been deemed absent within the project boundaries.

The orchard habitat is highly maintained with very little potential estivation habitat (i.e. a few rodent burrows) present. However, burrows are present along the fencelines of the property that could provide a minimal amount of estivation habitat for this species. CTS are not known to occur in the natural rangeland to the north and northeast, but this could be the result of the lack of sampling effort. Only one offsite pool potential suitable for CTS breeding was observed closer to the site than the location of the documented occurrences greater than 2.5 miles from the site. This pool is located across Road 28 ½, immediately northeast of the site (see photo in back of letter). Water was observed in this pool during the 2006/2007 rainy season. The inundation within this pool was not only the result of storm water runoff, but again the result of irrigation water overflow from the offsite orchard immediately to its south and to the east of the Herman Property. Therefore, the quality of this pool would be greatly reduced due to the potential presence of agricultural pollutants and unnatural inundation from a source other than storm water. It cannot be determined with certainty if CTS are breeding in this pool, but if breeding were to occur within this pool, individuals would likely choose to estivate in the natural rangeland habitat northeast of the pool. A few individuals may disperse to the west of the pool, but individuals would have to cross Road 28 ½ and would again likely choose to estivate in the natural rangeland to the north of the Herman Property, not along the fencelines of a manipulated orchard. It is also believed that if a CTS population were present within this pool, it is likely that

someone would have reported the presence of the species within this roadside pool or while driving or walking along the regularly traveled Road 28 ½.

LOA has concluded that the likelihood of CTS occurring on the Herman Property is very low. Any undocumented CTS population that may breed in pools within the rangelands to the north and northeast of the site would likely choose to estivate in burrows within the grassland habitat not along the edge of the highly maintained orchards of the Herman Property. LOA is not discounting the potential for a very low number of CTS to occur along the edges of the site, but the likelihood of "take" of the species would be very low.

Conclusions

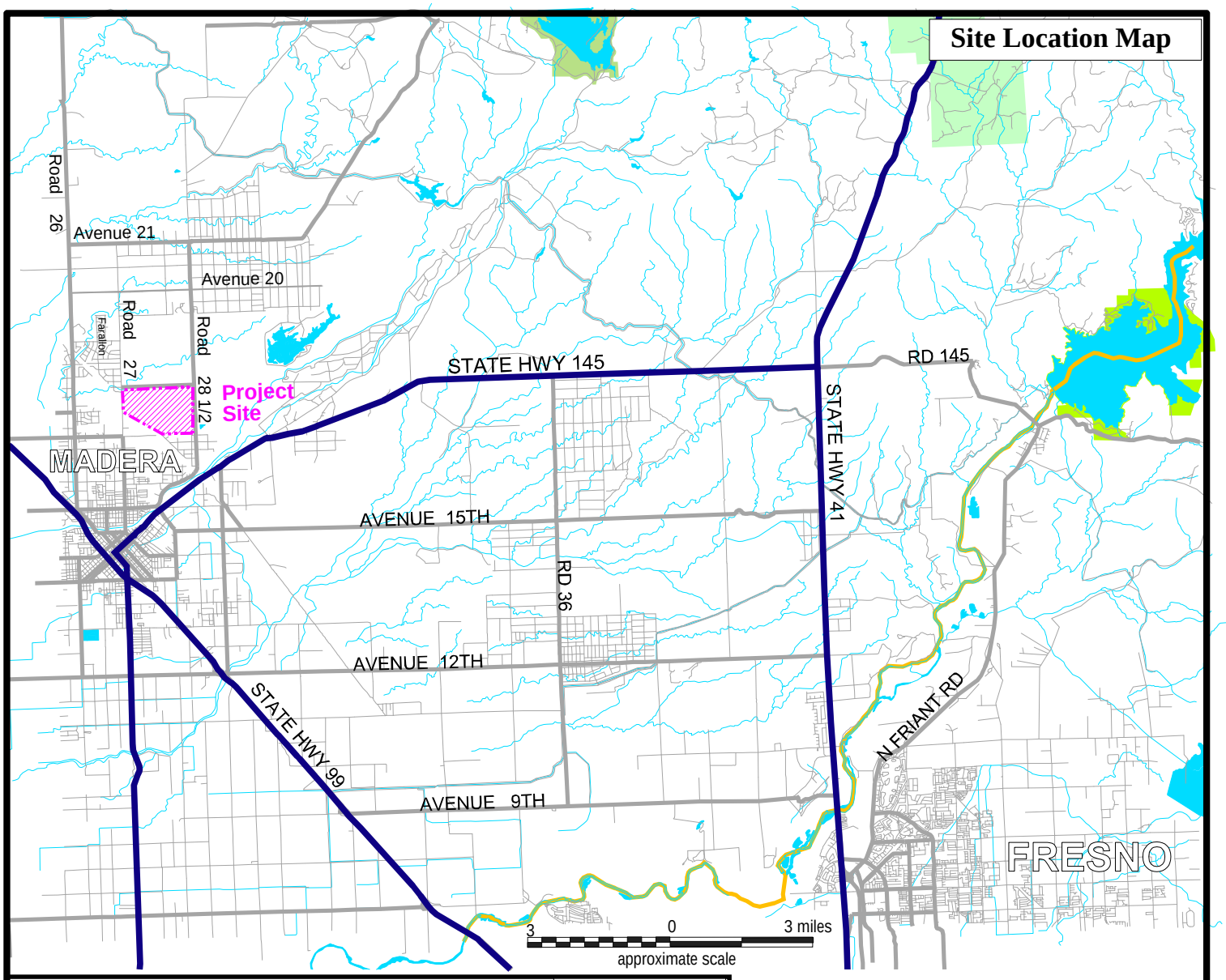
In conclusion, LOA does not feel that the Herman Property should be considered suitable habitat for Federally listed branchiopods or California tiger salamanders. It is not believed that any potential future land use change of the site would result in "take" of any Federally protected special status species. If the U.S. Fish and Wildlife Service concurs with our conclusions, we are requesting that a "not likely to adversely affect" letter be written providing assurance to our client that they do not have endangered species issues on the Herman Property.

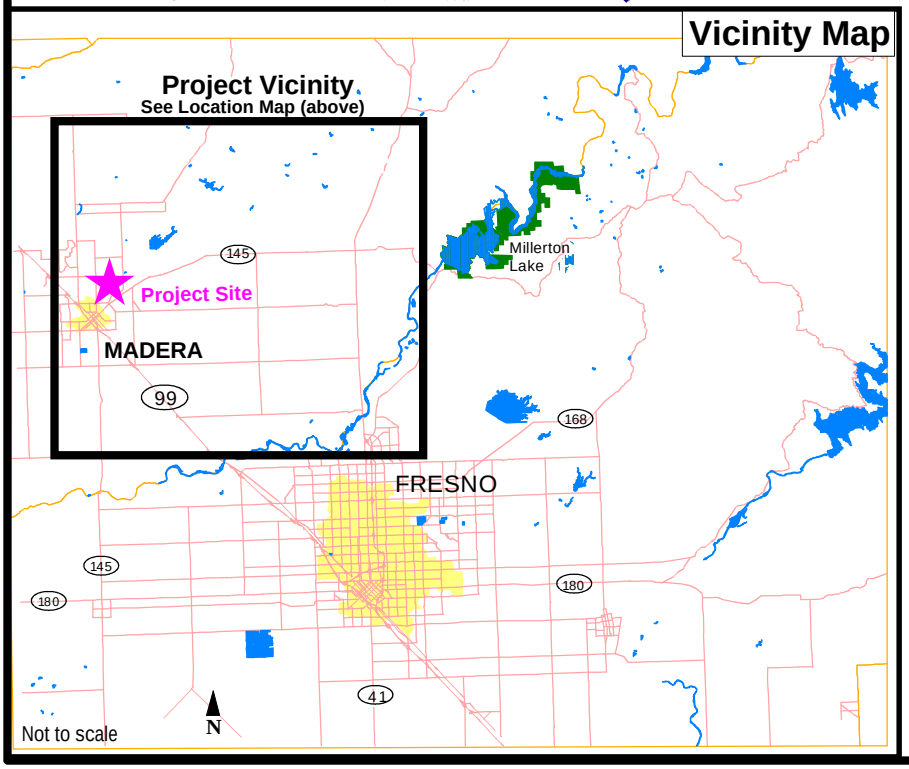
Thank you very much for taking the time to review the information regarding the existing conditions of the Herman Property. This letter also serves as the 90-day report for the completion of the branchiopod wet season surveys. Please let me know if you have any questions or comments. I look forward to hearing from you.

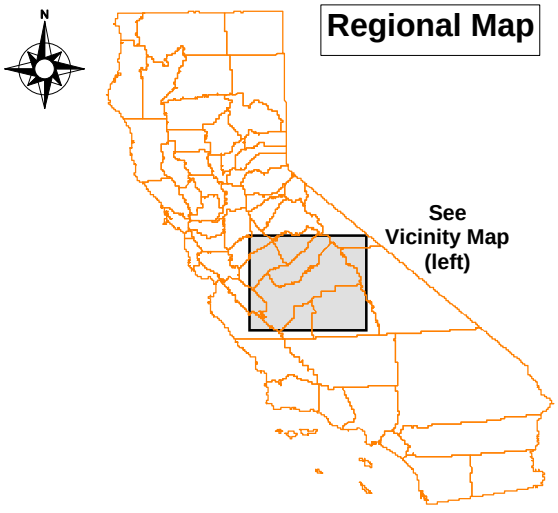
Sincerely,

Melissa Denena, M.S.
Director of Ecological Services

HERMAN PROPERTY
FIGURES



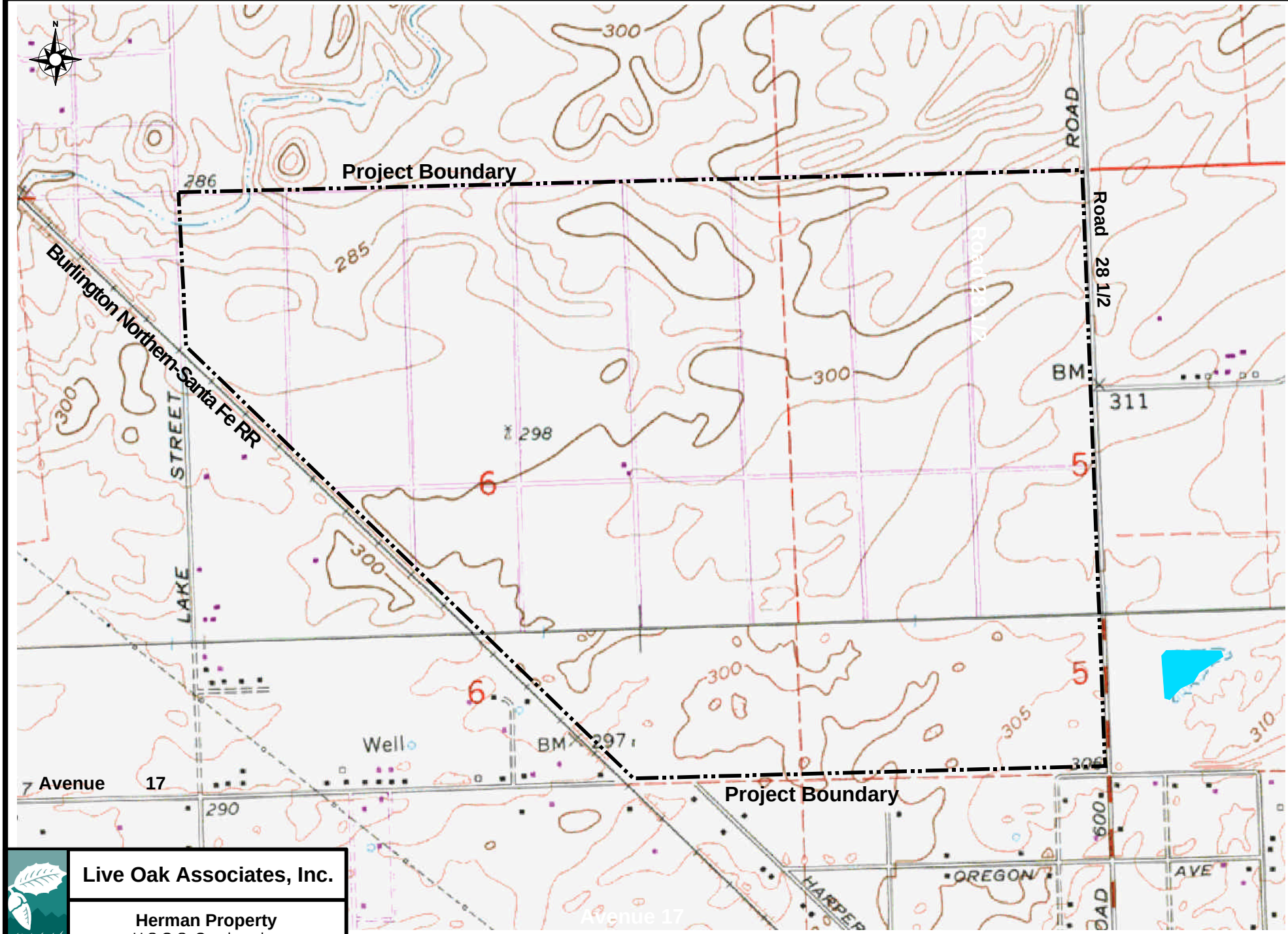




Live Oak Associates, Inc.

Herman Property
Site / Vicinity Map

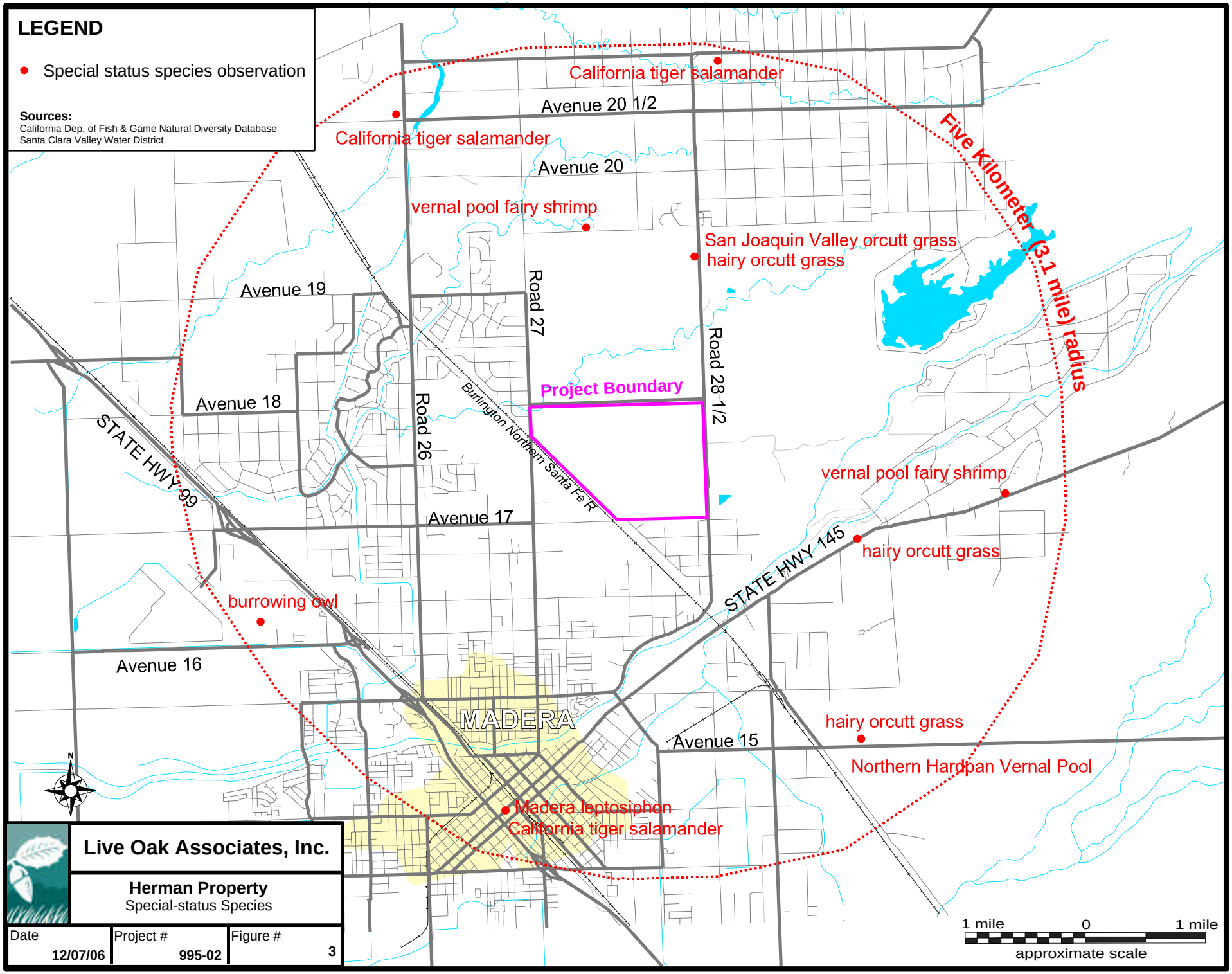
Date	Project #	Figure #
3/22/07	995-02	1

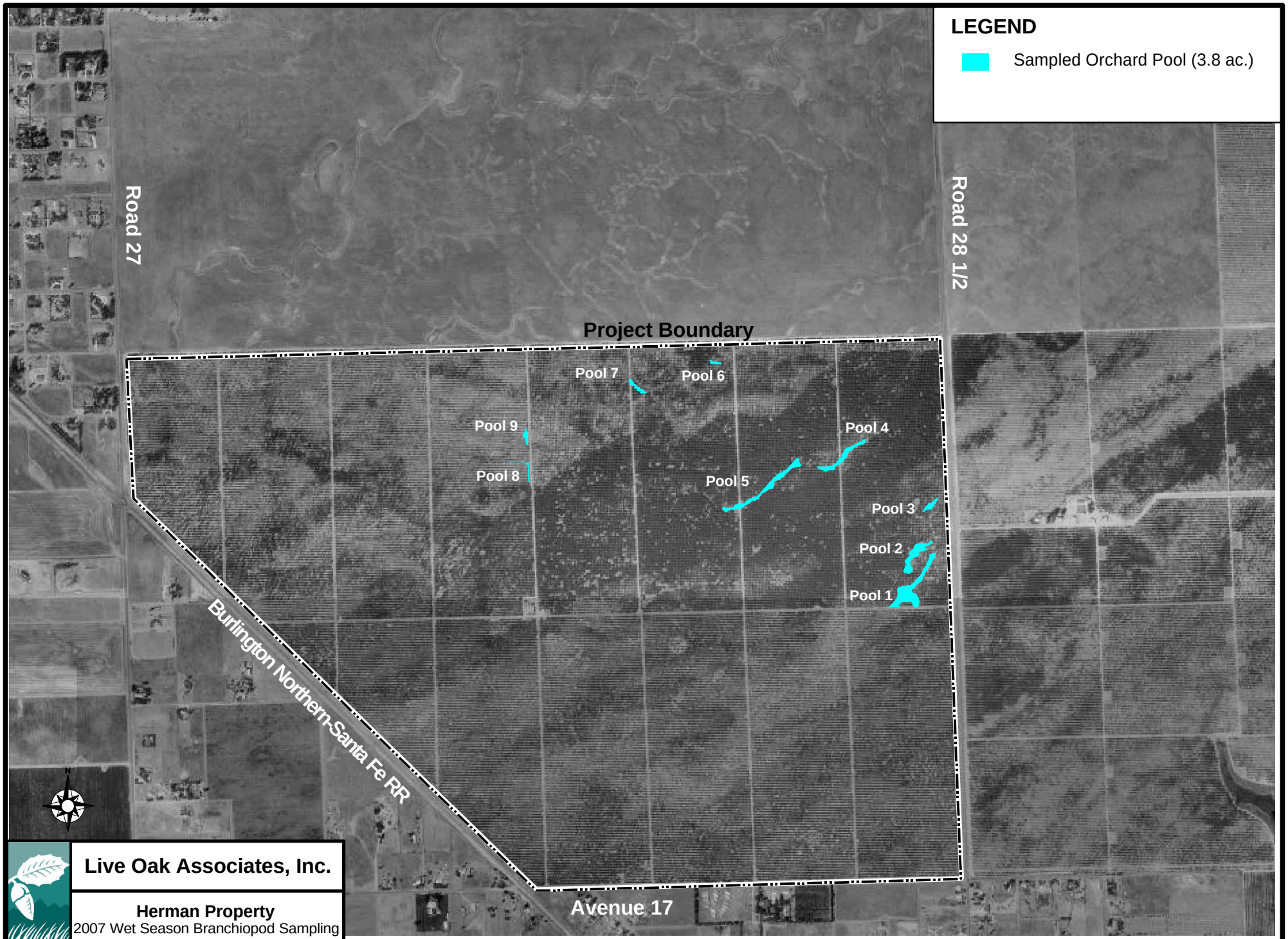


Live Oak Associates, Inc.		
Herman Property U.S.G.S. Quadrangles		
Date **3/22/07**	Project # **995-02**	Figure # **2**

Source:
U.S.G.S. Kismet Quadrangle,1987 & U.S.G.S. Madera Quadrangle,1981
Courtesy of TERRAserver

2,000' 0 2,000 feet
approximate scale


LEGEND
Special status species observation
Sources:
California Dep. of Fish & Game Natural Diversity Database
Santa Clara Valley Water District
California tiger salamander
Avenue 20 1/2
California tiger salamander
Avenue 20
vernal pool fairy shrimp
San Joaquin Valley orcutt grass
hairy orcutt grass
Five Kilometer (3.1 mile) radius
Avenue 19
Road 27
Road 28 1/2
Project Boundary
Avenue 18
Road 26
Burlington Northern Santa Fe R
STATE HWY 99
vernal pool fairy shrimp
Avenue 17
STATE HWY 145
hairy orcutt grass
burrowing owl
Avenue 16
MADERA
hairy orcutt grass
Avenue 15
Northern Hardpan Vernal Pool
Madera leptosiphon
California tiger salamander
N
1 mile
0
1 mile
approximate scale
Live Oak Associates, Inc.
Herman Property
Special-status Species
Date
12/07/06
Project #
995-02
Figure #
3



Live Oak Associates, Inc.

Herman Property
2007 Wet Season Branchiopod Sampling

Date	Project #	Figure #
3/22/07	995-02	4

HERMAN PROPERTY
BRANCHIOPOD DATA SHEETS

HERMAN PROPERTY - PN 995-02
Branchiopod Data Sheet
Pool #1

Collectors	Date	Time	Width (m)	Length (m)	Depth (cm.)	Air temp. ^{0}C	H2O temp. ^{0}C	Species Observed	Species Collected
AP, JG	2/2/07	11:00	40,15	54,80	10,5	10.5,10.5	10.0,13.0	---	---
AP, MD	2/16/07	11:08	13,30	40,40	5,7	13.0	12.0,13.0	---	---
MD, DO	3/2/07	11:51	15	150	10	14.0	21.0	ostracod tadpole	---
MD, DO	3/16/07	---	DRY			28.0	---	---	---
AP, JG	3/29/07	15:00	50	65	10	25.0	28.0	---	---
MD, DO	4/12/07	13:28	---	---	<3	19.0	---	---	---
MD	4/26/07	11:40	---	---	<3	20.0	---	---	---
AP	5/10/07	---	DRY			30.0	---	---	---
MD	5/23/07	---	DRY			24.0	---	---	---

AP = Austin Pearson (TE-108683-0)
JG = Jeff Gurule
MD = Melissa Denena (TE-108681-0)
DO = Davinna Ohlson

Protected Shrimp Observed: No

HERMAN PROPERTY - PN 995-02
Branchiopod Data Sheet
Pool #2

Collectors	Date	Time	Width (m)	Length (m)	Depth (cm.)	Air temp. ^{0}C	H2O temp. ^{0}C	Species Observed	Species Collected
AP, JG	2/2/07	11:35	23	30	5	10.5	14.0	---	---
AP, MD	2/16/07	11:03	15	25	7	13.0	12.0	---	---
MD, DO	3/2/07	11:59	5	25	7	14.0	21.0	ostracod backswimmer	---
MD, DO	3/16/07	---	DRY			28.0	---	---	---
AP, JG	3/29/07	15:15	19	21	11	25.0	29.5	---	---
MD, DO	4/12/07	13:20	---	---	<3	19.0	---	---	---
MD	4/26/07	---	DRY			20.0	---	---	---
AP	5/10/07	---	DRY			30.0	---	---	---
MD	5/23/07	---	DRY			24.0	---	---	---

AP = Austin Pearson (TE-108683-0)
JG = Jeff Gurule
MD = Melissa Denena (TE-108681-0)
DO = Davinna Ohlson

Protected Shrimp Observed: No

HERMAN PROPERTY - PN 995-02
Branchiopod Data Sheet
Pool #3

Collectors	Date	Time	Width (m)	Length (m)	Depth (cm.)	Air temp. ^{0}C	H2O temp. ^{0}C	Species Observed	Species Collected
AP, JG	2/2/07	12:04	8	17	5	10.5	16.0	water boatman	---
AP, MD	2/16/07	10:41	2	15	3	13.0	13.0	---	---
MD, DO	3/2/07	12:19	15	20	5	14.0	22.0	ostracod backswimmer	---
MD, DO	3/16/07	---	DRY			28.0	---	---	---
AP, JG	3/29/07	15:25	4	9	12	25.0	20.5	---	---
MD, DO	4/12/07	13:30	---	---	<3	19.0	---	---	---
MD	4/26/07	---	DRY			20.0	---	---	---
AP	5/10/07	---	DRY			30.0	---	---	---
MD	5/23/07	---	DRY			24.0	---	---	---

AP = Austin Pearson (TE-108683-0)
JG = Jeff Gurule
MD = Melissa Denena (TE-108681-0)
DO = Davinna Ohlson

Protected Shrimp Observed: No

Branchiopod Data Sheet
Pool #4

Collectors	Date	Time	Width (m)	Length (m)	Depth (cm.)	Air temp. ^{0}C	H2O temp. ^{0}C	Species Observed	Species Collected
AP, JG	2/2/07	12:37	20	120	10	10.5	11.0	water boatman	---
AP, MD	2/16/07	10:25	12	100	12	13.0	12.0	tadpole	---
MD, DO	3/2/07	12:28	10	80	10	14.0	22.0	ostracod back swimmer	---
MD, DO	3/16/07	---	DRY			28.0	---	---	---
AP, JG	3/29/07	15:32	10	167	15	25.0	29.0	---	---
MD, DO	4/12/07	13:35	---	---	<3	19.0	---	---	---
MD	4/26/07	11:48	6	30	6	20.0	32.0	ostracod	---
AP	5/10/07	---	DRY			30.0	---	---	---
MD	5/23/07	---	DRY			24.0	---	---	---

AP = Austin Pearson (TE-108683-0)
JG = Jeff Gurule
MD = Melissa Denena (TE-108681-0)
DO = Davinna Ohlson

Protected Shrimp Observed: No

Pool #5

Collectors	Date	Time	Width (m)	Length (m)	Depth (cm.)	Air temp. ^{0}C	H2O temp. ^{0}C	Species Observed	Species Collected
AP, JG	2/2/07	13:50	20	300	20	10.5	14.5	water boatman	---
AP, MD	2/16/07	10:05	20,15	30,150	15,20	13.0	10.0	western toad tadpole	---
MD, DO	3/2/07	12:45	15	300	20	14.0	18.0	ostracod, mosquito, tadpole	---
MD, DO	3/16/07	12:45	5	3	5	28.0	25.0	tadpoles ostracod	---
AP, JG	3/29/07	16:03	41	290	27	25.0	21.0	---	---
MD, DO	4/12/07	13:37	5	10	10	19.0	26.0	ostracod tadpole	---
MD	4/26/97	11:59	15	25	10	20.0	29.0	ostracod back swimmer	---
AP	5/10/07	16:45	20	30	7	30.0	33.5	back swimmer	---
MD	5/23/07	---	DRY			24.0	---	---	---

AP = Austin Pearson (TE-108683-0)
JG = Jeff Gurule
MD = Melissa Denena (TE-108681-0)
DO = Davinna Ohlson

Protected Shrimp Observed: No

HERMAN PROPERTY - PN 995-02
Branchiopod Data Sheet
Pool #6

Collectors	Date	Time	Width (m)	Length (m)	Depth (cm.)	Air temp. ^{0}C	H2O temp. ^{0}C	Species Observed	Species Collected
AP, JG	2/2/07	14:40	8	25	9	10.5	16.0	---	---
AP, MD	2/16/07	9:50	5	27	15	13.0	11.0	---	---
MD, DO	3/2/07	13:50	5	25	15	15.0	23.0	ostracod	---
MD, DO	3/16/07	---	DRY			28.0	---	---	---
AP, JG	3/29/07	16:11	0.5	7	23	25.0	25.0	---	--
MD, DO	4/12/07	---	DRY			19.0	---	---	--
MD	4/26/07	---	DRY			20.0	---	---	--
AP	5/10/07	---	DRY			30.0	---	---	--
MD	5/23/07	---	DRY			24.0	---	---	---

AP = Austin Pearson (TE-108683-0)
JG = Jeff Gurule
MD = Melissa Denena (TE-108681-0)
DO = Davinna Ohlson

Protected Shrimp Observed: No

HERMAN PROPERTY - PN 995-02
Branchiopod Data Sheet
Pool #7

Collectors	Date	Time	Width (m)	Length (m)	Depth (cm.)	Air temp. ^{0}C	H2O temp. ^{0}C	Species Observed	Species Collected
AP, JG	2/2/07	14:46	10	35	9	10.5	16.0	---	---
AP, MD	2/16/07	9:40	8	28	17	13.0	10.0	---	---
MD, DO	3/2/07	13:55	10	15	15	15.0	23.0	ostracod	---
MD, DO	3/16/07	---	DRY			28.0	---	---	---
AP, JG	3/29/07	16:12	13	20	17	25.0	29.0	---	--
MD, DO	4/12/07	13:47	---	---	<3	19.0	---	---	--
MD	4/26/07	12:05	---	---	<3	20.0	---	---	--
AP	5/10/07	17:00	5	13	8	30.0	33.0	---	--
MD	5/23/07	---	DRY			24.0	---	---	---

AP = Austin Pearson (TE-108683-0)
JG = Jeff Gurule
MD = Melissa Denena (TE-108681-0)
DO = Davinna Ohlson

Protected Shrimp Observed: No

HERMAN PROPERTY - PN 995-02
Branchiopod Data Sheet
Pool #8

Collectors	Date	Time	Width (m)	Length (m)	Depth (cm.)	Air temp. ^{0}C	H2O temp. ^{0}C	Species Observed	Species Collected
AP, JG	2/2/07	15:11	5	43	6	10.5	16.0	---	---
AP, MD	2/16/07	9:20	30	37	6	13.0	11.0	---	---
MD, DO	3/2/07	14:02	15	25	5	15.0	21.0	ostracod	---
MD, DO	3/16/07	14:00	15	25	4	28.0	25.0	ostracod	---
AP, JG	3/29/07	16:18	2,2,2	7,5,7	5	25.0	25.0	---	---
MD, DO	4/12/07	---	DRY			19.0	---	---	--
MD	4/26/07	---	DRY			20.0	---	---	--
AP	5/10/07	---	DRY			30.0	---	---	--
MD	5/23/07	---	DRY			24.0	---	---	---

AP = Austin Pearson (TE-108683-0)
JG = Jeff Gurule
MD = Melissa Denena (TE-108681-0)
DO = Davinna Ohlson

Protected Shrimp Observed: No

HERMAN PROPERTY - PN 995-02
Branchiopod Data Sheet
Pool #9

Collectors	Date	Time	Width (m)	Length (m)	Depth (cm.)	Air temp. ^{0}C	H2O temp. ^{0}C	Species Observed	Species Collected
AP, JG	2/2/07	15:17	2	24	5	10.5	16.0	---	---
AP, MD	2/16/07	9:05	5	120	7	13.0	12.0	diving beetle water	---
MD, DO	3/2/07	14:07	3	75	5	15.0	21.0	ostracod tadpole	---
MD, DO	3/16/07	14:10	5	40	5	28.0	25.0	ostracod	---
AP, JG	3/29/07	16:21	2	7	7	25.0	26.0	---	---
MD, DO	4/12/07	13:52	---	---	<3	19.0	---	---	---
MD	4/26/07	12:10	---	---	<3	20.0	---	---	---
AP	5/10/07	---	DRY			30.0	---	---	---
MD	5/23/07	---	DRY			24.0	---	---	---

AP = Austin Pearson (TE-108683-0)
JG = Jeff Gurule
MD = Melissa Denena (TE-108681-0)
DO = Davinna Ohlson

Protected Shrimp Observed: No

HERMAN PROPERTY
PHOTOS

Pool 1 looking northwest (A. Pearson 02/02/07)

Pool 4 looking northeast (A. Pearson 02/02/07)

Pool 5 looking northwest (A. Pearson 02/02/07)

Pool 6 looking northwest (A. Pearson 02/02/07)

Pool 9 looking west (A. Pearson 02/02/07)

Northern boundary of the site looking west (Melissa Denena 05/31/07)

Northern boundary of the site looking west (Melissa Denena 05/31/07)

Offsite pool across Road 28 ½ (Melissa Denena 02/16/07)

D-4 Jurisdictional Delineation and Correspondence

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

INVESTIGATION OF POTENTIAL WATERS OF THE UNITED STATES HERMAN PROPERTY/CASTELLINA MADERA COUNTY, CALIFORNIA

Prepared by

LIVE OAK ASSOCIATES, INC.

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February 23, 2017 (Revised: October 22, 2018) PN 995-03

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EXECUTIVE SUMMARY

Live Oak Associates, Inc. (LOA) investigated an approximately 794-acre parcel (i.e., the "study area") located approximately one mile north of the City of Madera, Madera County, California for waters of the United States (also referred to as "jurisdictional waters") in July 2016. Such waters generally include navigable waters, interstate drainages, impoundments of jurisdictional waters, tributaries to navigable and interstate waters, and wetlands, as defined by the U.S. Army Corps of Engineers, that are adjacent to such waters. LOA conducted this investigation and prepared this report for the purpose of seeking an approved jurisdictional determination per the Clean Water Rule published June 29, 2015.

At the time of field surveys conducted by LOA, the entire study area consisted of irrigated almond and fig orchards, farm roads, irrigation infrastructure, sheds, and equipment storage areas. The native land once present at the location of the study area consisted of a mosaic of non-native grassland and vernal pool/vernal swale wetlands. Such lands border the study area to its north. All such lands once present within the study area were converted to irrigated agriculture and ancillary infrastructure in 1978. Therefore, lands of the study area have been in agricultural production for the last 38 years. The management of such lands includes regular disking, the operation of vehicles to facilitate the application of pesticides and herbicides, the annual harvesting of fruits and nuts, and the annual pruning of orchard trees. Almond trees are productive for 25 to 30 years and then bulldozed, removed, and replaced with new trees. Therefore, the lands of the study area are highly disturbed on an ongoing basis.

Traditional navigable waters (TNWs), relatively permanent waters, and impoundments of such waters were absent from the highly disturbed lands of the study area at the time of LOA's field survey. Disconnected segments of two ephemeral swales, one that passes through the study area's northwest corner and another that passes through the study area from east to west, are discernible on aerial photography of the site. These swale segments lack a defined bed and bank and physical evidence of ordinary high water. In places where irrigation runoff pools in the swale segments, the segments support weedy wetland indicator plant species typical of irrigated agricultural lands in California's San Joaquin Valley.

Winter storm runoff leaves the study area as sheet flow or via non-wetland swale segments passing through its western boundary. These swales are tributary to Schmidt Creek, a natural drainage that has never had any hydrologic connection to a traditional navigable water (i.e., the San Joaquin River) or its tributaries. Therefore, the one area meeting all three wetland criteria within the study area is isolated from traditional navigable waters of the U.S. or their tributaries.

Areas meeting the technical criteria of jurisdictional wetlands were generally absent from the study area. Native vernal pools species were entirely absent from the study area. Numerous shallow depressions within the orchard capture irrigation runoff during the summer, and these depressions are sometimes characterized by algal mats and/or weedy vegetation that either include or is made up of wetland indicator species. While these shallow depressions may hold water episodically during the rainy season, their hydrology is primarily driven by irrigation during the summer, which accounts for the weedy vegetation observed in the summer of 2016. The soils of such areas, however, are not generally hydric. One swale segment having an area of

19,755 square feet (0.45 acre) met all three wetland criteria (i.e., vegetation, soils, and hydrology). This segment appears to collect and hold irrigation water through much of the summer growing season. It is, however, hydrologically isolated from other aquatic and wetland features offsite.

The two areas meeting the technical criteria of jurisdictional wetlands would not be considered waters of the United States per provisions of the Clean Water Rule. These wetlands are not adjacent to downstream waters of the United States, they are not case-specific wetlands meeting the definitions of such wetlands in CFR§328.3, and they are agricultural wetlands sustained by artificial irrigation, and would revert to dry land in the absence of irrigation.

TABLE OF CONTENTS

1.0 INTRODUCTION

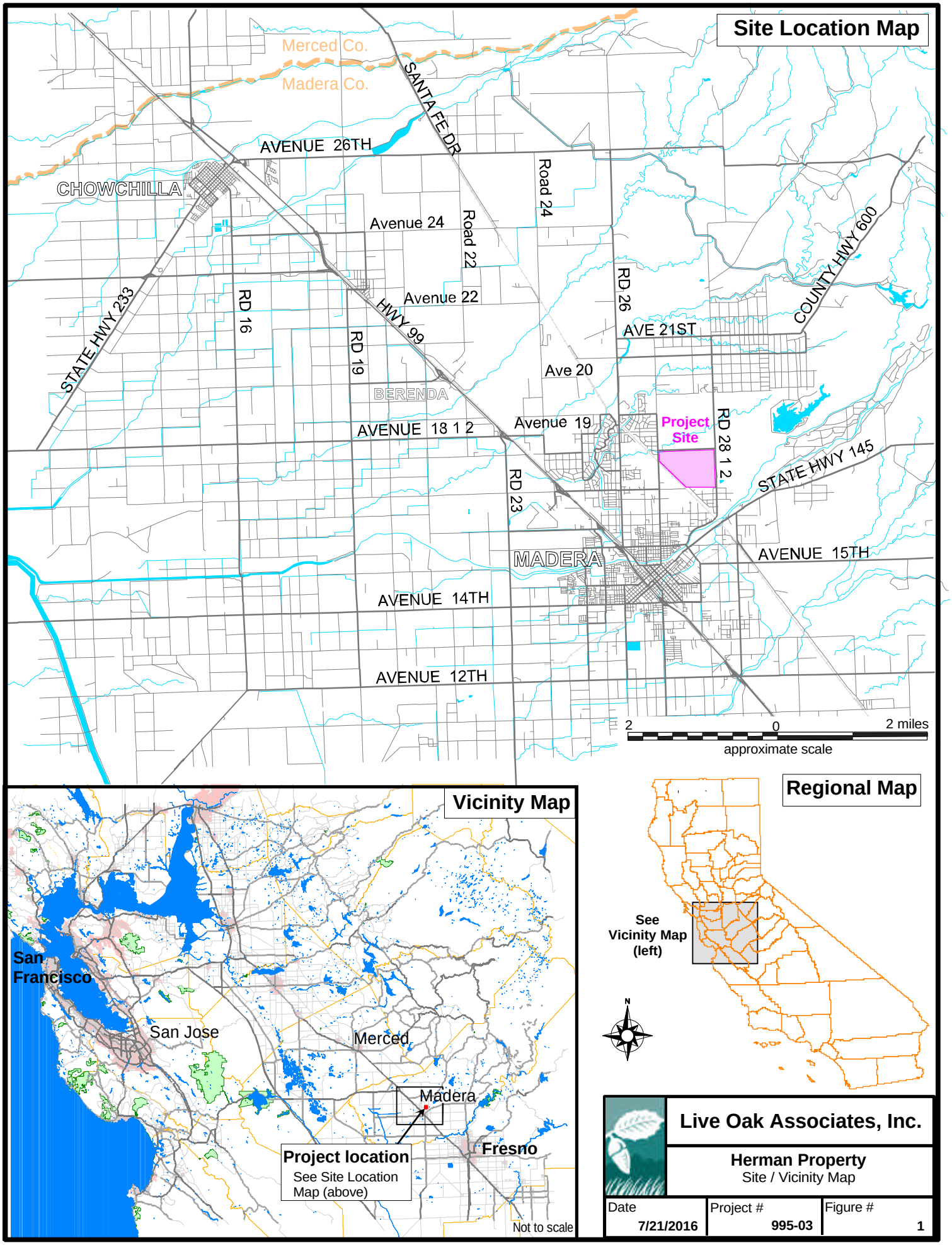
Live Oak Associates, Inc. (LOA), surveyed the approximately 794-acre Herman property (also referred to as the "site") located approximately one mile north of the City of Madera, Madera County, California, for potential waters of the United States, including areas meeting the technical criteria of wetlands (Figure 1). The site is located approximately one mile north of the City of Madera and three miles east of Highway 99 (APNs 031-221-001 and 031-222-001). The site is bounded by Road 27 to the west, rangelands to the north, Road 28 ½ to the east, rural residential lands to the south, and the Burlington Northern Santa Fe Railway to the southwest (Figure 1). The site is in the Kismet and Madera 7.5" U.S. Geological Survey (USGS) quadrangles. The site can be found in portions of sections 5 and 6 of township 11 south, range 18 east (Figure 2).

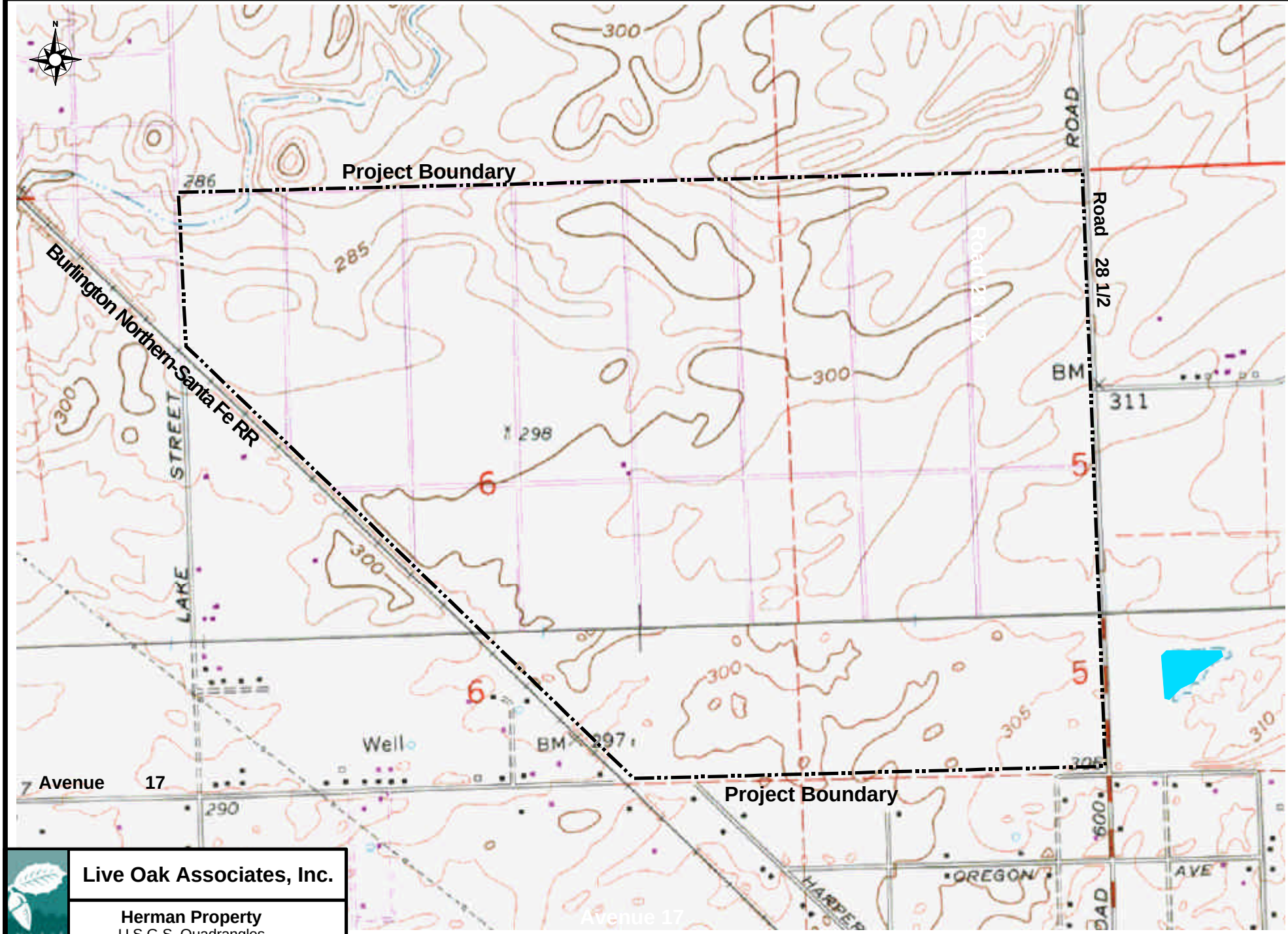
The Department of the Army, acting through the U.S. Army Corps of Engineers (USACE), is authorized to issue permits for the discharge of dredged or fill material into waters of the United States under section 404 of the Clean Water Act (CWA). They may also regulate activities in or on navigable waters per provisions of sections 9 and 10 of the Rivers and Harbors Act.

The reach and extent of Clean Water Act jurisdiction over aquatic features has been the subject of several U.S. Supreme Court decisions, including *United States v. Riverside Bayview Homes* (Riverside), *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC) and *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers* (referred together as the Rapanos decision). Recently, the USACE has offered project proponents the option of having the jurisdictional status of hydrologic features determined via the 2015 Clean Water Rule, a rule finalized by the U.S. Environmental Protection Agency and the USACE under the Obama administration in 2015 that had the objective of definitively clarifying what, exactly, are waters of the United States.

United States v. Riverside Bayview Homes

In Riverside (1985), the Supreme Court unanimously ruled that adjacent wetlands are "inseparably bound up" with the waters that they are adjacent to. "Adjacent" has been defined to


Site Location Map
Merced Co.
Madera Co.
SANTA FE DR
AVENUE 26TH
CHOWCHILLA
Avenue 24
Road 24
Road 22
RD 26
COUNTY HWY 600
AVE 21ST
STATE HWY 233
RD 16
RD 19
HWY 99
Avenue 22
Ave 20
BERENDA
AVENUE 18 1 2
Avenue 19
Project Site
RD 28 1 2
STATE HWY 145
RD 23
MADERA
AVENUE 15TH
AVENUE 14TH
AVENUE 12TH
2
0
2 miles
approximate scale
Vicinity Map
San Francisco
San Jose
Merced
Madera
Fresno
Project location
See Site Location Map (above)
Not to scale
Regional Map
See Vicinity Map (left)
N
Live Oak Associates, Inc.
Herman Property
Site / Vicinity Map
Date
7/21/2016
Project #
995-03
Figure #
1



Live Oak Associates, Inc.

Herman Property
U.S.G.S. Quadrangles

Date	Project #	Figure #
7/21/2016	995-03	2

Source:
U.S.G.S. Kismet Quadrangle,1987 & U.S.G.S. Madera Quadrangle,1981
Courtesy of TERRAserver

2,000' 0 2,000 feet
approximate scale

mean "bordering, contiguous, or neighboring a water...including waters separated by constructed dikes or barriers, natural river berms, beach dunes, and the like." Therefore, wetlands, including intrastate wetlands, adjacent to waters of the United States were, themselves, waters of the United States (80 Fed. Reg. 37076, 2015).

***Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC)**

In SWANCC (2001), the Supreme Court ruled that "non-navigable, isolated, intrastate" waters could not be claimed as jurisdictional by the USACE on the basis of their use by migratory birds. Although the Court did not specifically define the term "isolated," it upheld the jurisdictional status of "adjacent" wetlands and other waters, which are defined as "bordering, contiguous, or neighboring" other jurisdictional waters. Therefore, an "isolated wetland" was implicitly defined as "wetlands that are not bordering, contiguous, or neighboring" other jurisdictional waters.

***Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers* (referred together as the Rapanos decision)**

In Rapanos (2006), the Supreme Court looked beyond the issue of "isolated" waters and considered what broader types of aquatic features are and are not subject to CWA Section 404 regulation. In June 2007, the USACE and the U.S. Environmental Protection Agency (EPA) issued guidance on how to apply the complicated, multiple-opinion rulings in Rapanos. The agencies revised this guidance memorandum in December 2008. In short, the USACE would assert CWA jurisdiction over traditional navigable waters, wetlands adjacent thereto, non-navigable tributaries thereto that are "relatively permanent" (flow year-round or continuously on a seasonal basis), and wetlands that directly abut such tributaries. The USACE also currently asserts CWA jurisdiction over non-navigable tributaries that are not relatively permanent, and wetlands adjacent thereto, if such features are shown based on site-specific hydrologic and ecological factors to have a "significant nexus" with a traditional navigable water. The USACE will generally not assert CWA jurisdiction over swales or erosional features, or ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water (USACE and EPA 2008).

2015 Clean Water Rule: Definition of Waters of the United States

While the post-Rapanos guidance document was intended to clarify the regulatory status of aquatic features, its practical application has led to a time-intensive and inconsistent interpretation of CWA jurisdiction. For jurisdictional determinations to be made in a more timely, consistent, and predictable manner, the EPA and the USACE published the Clean Water Rule in 2015, which redefines the scope of waters that are protected under the CWA (USACE and EPA 2015). However, in October 2015, the U.S. Court of Appeals for the Sixth Circuit issued a nationwide stay of the Clean Water Rule pending further action of the court. Therefore, until recently, prior regulations defining waters of the U.S. remained in effect. The USACE has, however, notified Live Oak Associates, Inc. that the applicant for the Herman property may seek a jurisdictional determination (AJD) from the Sacramento Army Corps of Engineers District using the 2015 rule. This rule clarifies the jurisdictional status of hydrologic features in agricultural settings such as prevail on the Herman Property, and is therefore the appropriate rule to use in determining which, if any, hydrologic features of the Herman Property might be waters of the United States.

Waters of the U.S. are defined in 33 CFR §328.3(a) as:

1. All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters, including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    a. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    c. Which are used or could be used for industrial purpose by industries in interstate commerce;

4. All impoundments of water otherwise defined as waters of the United States under the definition;
5. Tributaries to waters identified in paragraphs (a)(1) through (4) of this section;
6. The territorial seas;
7. Wetlands adjacent to waters (other than waters which are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section.

Examples of potential waters of the U.S. include stream channels, impoundments such as stock ponds occurring along a stream channel, and wetlands (Wetland Training Institute, Inc. 1990). Potentially jurisdictional wetlands are those wetlands that are adjacent to traditional navigable waters and tributaries of such waters.

The 2015 rule does not fundamentally change the Clean Water Act, nor does it alter the definition of a water of the United States with respect to relatively permanent waters. It does clarify that tributaries of downstream navigable waters (i.e., both permanent and relatively non-permanent waters possessing a defined bed and bank and ordinary high water) and adjacent waters to tributaries (bordering, contiguous, or neighboring, including waters separated from other waters of the United States by constructed dikes or barriers, natural river berms, beach dunes, and the like) are, by definition, waters of the United States. Such waters are considered to have a significant nexus (without any analysis) to traditional navigable waters, interstate waters, or the territorial seas.

Per the 2015 rule, certain types of hydrologic features are subject to the "significant nexus analysis" used to determine if a significant nexus between such waters and downstream jurisdictional waters exists. A significant nexus would establish federal jurisdiction over the hydrologic feature in question under Section 404 of the Clean Water Act (USACE and EPA, 2015). However, such waters are limited on a case-specific basis, and must fall within one of the following categories to be considered potentially jurisdictional:

- Prairie potholes (located in the upper Midwest);
- Carolina bays and Delmarva bays (located on the Atlantic coastal plain);
- Pocosins (Central Atlantic coastal plain);
- Western vernal pools (located adjacent to the Herman Property, but not on it);
- Texas coastal prairie wetlands (Texas Gulf Coast);

- All waters within the 100-year floodplain of waters (1) currently used (or formerly used in the past) for interstate and foreign commerce; (2) interstate waters, including interstate wetlands; (3) the territorial seas; (4) all impoundments of waters otherwise identified as waters of the United States; and (5) all tributaries of waters identified in (1) through (4) above;
- All waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in the previous bullet.

Waters not falling within the above categories, not hydrologically connected to downstream waters via tributaries possessing physical indicators of a bed and bank and ordinary high water, and not adjacent to 7 categories of waters as defined in 33 CFR § 328.3(a) (listed above) are not themselves waters of the United States.

Furthermore, the 2015 rule explicitly excludes from jurisdiction "artificially irrigated areas that would revert to dry land should application of water to that area cease." Given that the property subject to this investigation is made up entirely of irrigated orchard, the 2015 rule is relevant in determining if any waters observed on the site are waters of the United States.

2.0 METHODS

LOA's investigation into the location and extent of possible waters of the United States within the study area was based on a review of background literature and the performance of a field survey necessary to collect site-specific information related to vegetation, hydrology, and soils. The background literature reviewed by LOA included soil maps and soil descriptions prepared by the Natural Resources Conservation Service for Madera County (NRCS 2015), the Madera USGS 7.5 minute quadrangle, aerial photographs of the site, and field data gathered by LOA in 2006 during protocol vernal pool fairy shrimp surveys.

LOA wetland ecologists Dave Hartesveldt and Davinna Ohlson surveyed the site for potential jurisdictional waters on July 14, 2016. This survey was conducted on foot in order to maximize visual coverage of the entire study area; collect vegetation, hydrology, and soils data; and locate and delineate aquatic features. Potential waters of the U.S. were surveyed using a GPS unit with sub-meter accuracy. The surveys were consistent with guidelines found in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008), and *Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* (USACE 2016a). Color photographs were taken in various areas of the site (Appendix A).

The delineation of waters of the United States within the project site was problematic due to the fact that the entire site consists of an orchard and associated infrastructure (i.e., access roads, irrigation infrastructure, and equipment storage areas). The orchard was originally planted in 1978. Hydrologic features that may have once been present were eliminated with the deep ripping and discing of the site. Since that time, ongoing orchard operations, which include irrigation, weed control, pruning, and harvesting, have obscured what historically might have been wetlands and what, under current circumstances, could be wetlands.

2.1 AREAS MEETING THE TECHNICAL CRITERIA OF WETLANDS

Wetlands are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands

generally include swamps, marshes, bogs and similar areas" (33 U.S.C. § 328.3(b)). Wetlands are characterized by the presence of hydrophytic vegetation (i.e., an association of plants adapted to saturated soils), hydric soils (i.e., soils which have developed under the anaerobic conditions imposed by soil saturation), and wetland hydrology (i.e., surface inundation or saturated soils). Accordingly, LOA surveyed the site for wetland indicator plants, positive indicators of hydric soils, and wetland hydrology.

Based on the likelihood of presence of wetland characteristics after review of aerial photography, six representative sample locations were selected within the study area. These include one within a potential wetland area and a paired sampling site just outside of a potential wetland site. Each sample location was assessed for the diagnostic environmental characteristics of wetlands (i.e., hydrophytic vegetation, hydric soils, and a hydrology characterized by an aquic or peraquic moisture regime). Vegetation, soils, and hydrology information were collected at these sample locations to document site conditions; the data collected were entered on standard data sheets patterned after those used by the USACE (Appendix B). The dominant species observed within the plant community of each sample location were recorded. Plants observed at the sample locations were identified using the *Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012) to the lowest taxonomic level necessary to obtain their wetland indicator status. The wetland indicator status of each species was obtained from the 2016 National Wetland Plant List (USACE 2016b). A complete list of vascular plant species observed on the site is provided in Appendix C.

Wetland indicator species are designated according to their frequency of occurrence in wetlands:

OBLIGATE (OBL)	Probability to occur in wetland is >99%
FACULTATIVE WETLAND (FACW)	Probability to occur in wetland is >67 to 99%
FACULTATIVE (FAC)	Probability to occur in wetland is 33 to 67%
FACULTATIVE UPLAND (FACU)	Probability to occur in wetland is 1 to <33%.
UPLAND (UPL)	Probability to occur in wetland is <1%

Hydrophytic vegetation is considered present when "inundation or soil saturation is either permanent or of sufficient frequency and duration to exert a controlling influence on the plant species present" (USACE 2008). The presence of hydrophytic vegetation is typically determined

using the dominance test, which is met when more than 50% of the dominant species across all vegetative strata (i.e., trees, shrubs, herbs, and woody vines) at a given location are composed of obligate, facultative wetland, and facultative plant species. On sites where the vegetation initially fails the dominance test but indicators of hydric soil and wetland hydrology are present, a plot-based prevalence index is calculated. The prevalence index is a weighted average of the wetland indicator status of all plant species in the sampling plot. Hydrophytic vegetation is considered present when the prevalence index is 3.0 or less. The presence of hydrophytic vegetation was determined using the dominance test for all sample locations in this evaluation.

Each sample location was also examined for positive indicators of wetland hydrology and hydric soils. Evidence of wetland hydrology consists of primary indicators including, but not limited to, the presence of surface water, saturation, water marks in non-riverine systems, water-stained leaves, and a biotic crust. Secondary indicators of wetland hydrology include, but are not limited to, water marks in riverine systems, drainage patterns, and a dry season water table. In accordance with USACE guidelines, a soil pit 10" to 12" in depth was dug at all sampling locations that were not inundated at the time of the site survey. Excavated soil horizons were examined for low chromas, gleying, mottling, concretions, sulfidic odors, and other hydric soil indicators.

2.2 TRADITIONAL NAVIGABLE WATERS AND TRIBUTARY WATERS

Pursuant to USACE regulations (33 CFR §329), navigable waters are those waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide. Such waters are referred to as "traditional navigable waters" in the USACE and EPA guidance regarding the *Rapanos* decision.

Tributary waters are waters that contribute flow to a navigable water, interstate water, or the territorial seas. Tributaries are "characterized by the presence of the physical indicators of a bed and bank and an ordinary high water mark" (33 CFR §328.3). Such features may carry a permanent, intermittent, or ephemeral flow of water. Perennial streams are those with "flowing water year-round during a typical year, with groundwater or contributions of flow from higher in the stream or river network as primary sources of water for stream flow. Intermittent streams are

those that have both precipitation and groundwater providing part of the stream's flow, and flow continuously only during certain times of the year (e.g., during certain seasons such as the rainy season). Ephemeral streams have flowing water only in response to precipitation events in a typical year and are always above the water table" (80 FR 37076).

In the absence of adjacent wetlands, the limit of CWA jurisdiction of traditional navigable waters, rivers, streams, and their tributaries extends to the "ordinary high water" (OHW) mark. The OHW mark refers to "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR § 328.3(e)).

The site does not contain any traditional navigable waters but was inspected for tributary waters.

3.0 RESULTS

3.1 EXISTING CONDITIONS

Topographically, the site is relatively level, ranging in elevation from approximately 280 ft (85 m) National Geodetic Vertical Datum (NGVD) in the northwest corner to approximately 310 ft (95 m) NGVD at the east end of the site. Surrounding land uses include rangelands, orchards, and residences. The site itself consists of an active almond and fig orchard that was first planted in 1978.

3.1.1 Hydrology

The site is located within the larger Schmidt Creek watershed. Schmidt Creek is an intermittent creek tributary to Dry Creek, which is in turn tributary to the San Joaquin River via the Fresno River and Eastside by-pass. The Herman property is not, however, hydrologically connected to downstream waters via any tributary waters. Tributary waters are defined as waters that contribute flow, either directly or through another water of the U.S., to downstream waters of the U.S. that are characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark. Two broad and somewhat discontinuous swales lacking distinct beds and banks carry ephemeral stormwater runoff off the site and eventually to Schmidt Creek 1.6 miles to the west of the site's western boundary. Otherwise, runoff leaves the site via sheet flow.

3.1.2 Vegetation

Prior to 1978, the site was a mosaic of non-native grassland and vernal pools interconnected by vernal swales. Non-native grasses and forbs of the non-native grassland consisted almost entirely of annual species that originated in the Mediterranean region of Europe. Native plants endemic to vernal pools of the region were no doubt once present in vernal pools of the site. The site was, however, converted to irrigated orchard in 1978 and since that time has supported the cultivation of figs and almonds. The planting of the orchard entailed deep-ripping of the soil (breaking up the subsurface soil hardpan and mixing the various soil horizons). The maintenance of the orchard consists of periodic disking to control weeds and irrigation throughout the growing season. The non-native and native grasses and forbs common to the site

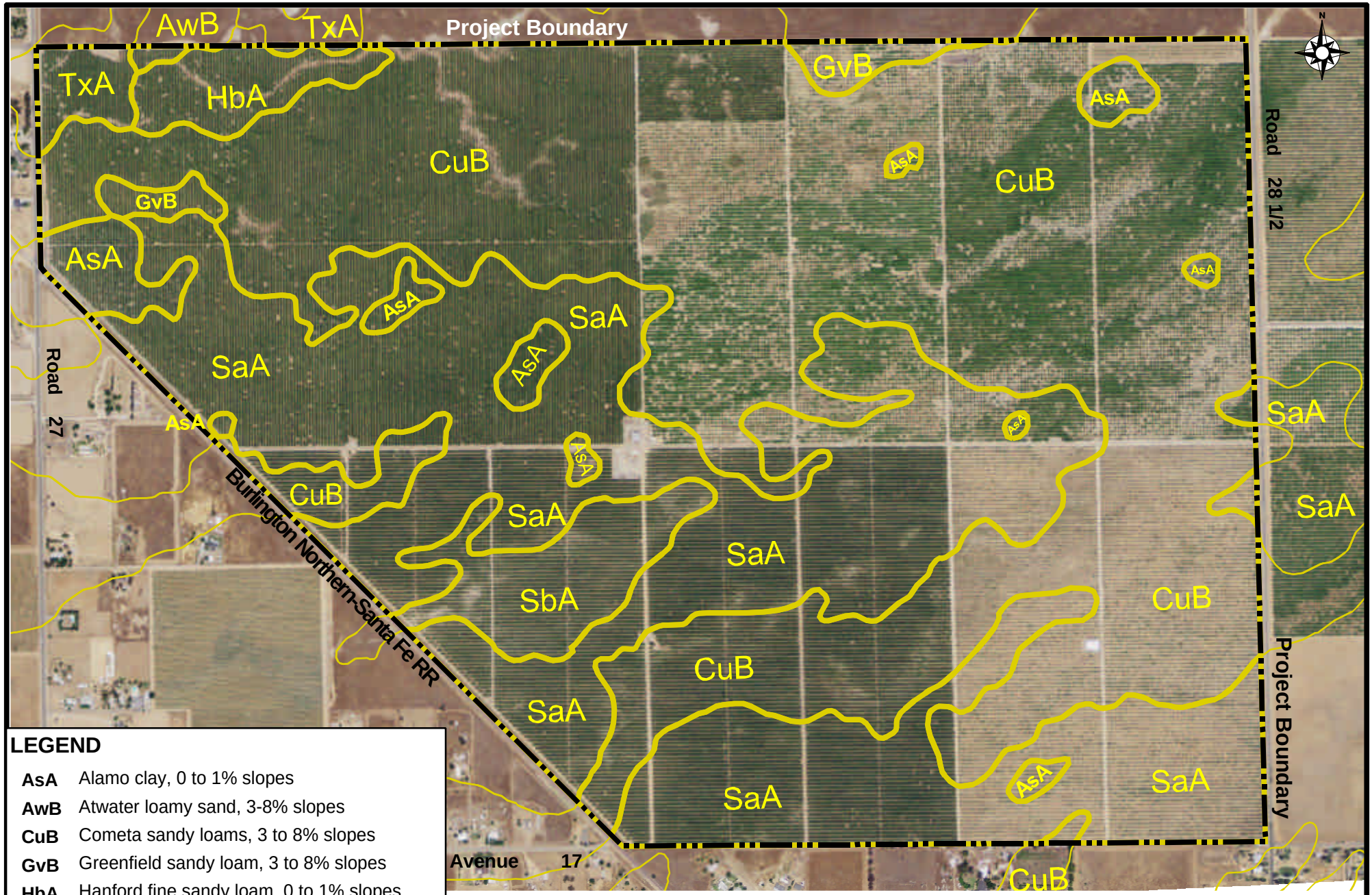
prior to 1978 have been replaced with other weedy annuals tolerant of irrigation throughout the growing season. Native grasses and forbs are largely absent from the site.

3.1.3 Soils

Eight soil types from seven soil series were identified on the project site (Figure 3; Table 1; NRCS 2015). Like most soils of the San Joaquin Valley, the soils of the project site consist of alluvium primarily derived from plutonic rocks of the Sierra Nevada (NRCS 1962). This alluvium was carried from the Sierra to the Central Valley during the Pleistocene by the considerable volume of runoff generated from melting snow and glaciers. Therefore, soil development on the project site and adjoining lands has occurred principally during the Holocene.

Alamo, Atwater, Cometa, San Joaquin, and Tujunga soils are considered hydric. Hydric soils are soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. Under sufficiently wet conditions, they support the growth and regeneration of hydrophytic vegetation. The other soil types are not considered hydric, although hydric inclusions may occur. Alamo soils are considered poorly drained. Atwater, Cometa, Greenfield, and Hanford soils are considered well drained. San Joaquin soils are considered moderately well drained. Tujunga soils are considered somewhat excessively drained. Drainage refers to the frequency and duration of periods when the soil is saturated with water. Tujunga soils are also considered to be slightly alkaline. This soil type is restricted to the site's northwest corner.

Some alluvial soils of the region developed a subsurface iron-silica hardpan 2-6 ft below the surface. In some places, this is a dominant characteristic of the soil. In others, this hardpan occurs sporadically as hydric inclusions. This water-restricting layer often perches water during the last half of the winter and early spring. In hummocky terrain, perched water creates seasonal pools in topographic depressions that support a unique flora and fauna, many of which are state and/or federal endangered species, endemic to such pools occurring in the region. These seasonal pools are typically known as vernal pools. Extensive vernal pool complexes are known



LEGEND

AsA	Alamo clay, 0 to 1% slopes
AwB	Atwater loamy sand, 3-8% slopes
CuB	Cometa sandy loams, 3 to 8% slopes
GvB	Greenfield sandy loam, 3 to 8% slopes
HbA	Hanford fine sandy loam, 0 to 1% slopes
SaA	San Joaquin sandy loams, 0 to 3% slopes
SbA	San Joaquin-Alamo complex, 0 to 3% slopes
TxA	Tujunga loamy sand, 0 to 3% slopes

Source:
U.S. Dept. of Agriculture, Natural Resources Conservation Service

2,000' 0 2,000 feet
approximate scale

Live Oak Associates, Inc.

Herman Property
Soils

Date	Project #	Figure #
7/21/2016	995-03	3

Table 1. Soils occurring on the Castellina/Herman site (NRCS 2015).					
Soil Series/Soil	**Map Symbol**	**Parent Material**	**Surface Permeability**	**Hardpan/ Duripan**	**Hydric**
ALAMO SERIES Alamo clay, 0 to 1% slopes	AsA	Clayey alluvium derived from igneous, metamorphic and sedimentary rock	Very slow	Yes	Yes
ATWATER SERIES Atwater loamy sand, 3 to 8% slopes, MLRA 17	AwB	Sandy alluvium derived from granite	Moderately rapid	Yes	Yes
COMETA SERIES Cometa sandy loams, 3 to 8% slopes,	CuB	Alluvium derived from granite	Very slow	No	Yes
GREENFIELD SERIES Greenfield sandy loam, moderately deep and deep over hardpan, 3 to 8% slopes	GvB	Alluvium derived from igneous, metamorphic and sedimentary rock	Moderately rapid	No	No
HANFORD SERIES Hanford fine sandy loam, moderately deep and deep over hardpan, 0 to 1% slopes	HbA	Alluvium derived from igneous rock	Moderately rapid	No	No
SAN JOAQUIN SERIES San Joaquin sandy loam, 0 to 3% slopes, MLRA 17 San Joaquin-Alamo complex, 0 to 3% slopes	SaA SbA	Alluvium derived from granite	Very slow	Yes	Yes
TUJUNGA SERIES Tujunga loamy sand, moderately deep and deep over hardpan, 0 to 3% slopes	TxA	Sandy alluvium derived from granite	Rapid	No	Yes

to occur in the open rangeland in the vicinity of the site. Soils suitable for vernal pool development on the site include the Alamo, Atwater, and San Joaquin Series, which are known to possess the subsurface hardpan necessary for vernal pool formation. However, due to the deep ripping that has occurred and 38 years of periodic disking, the underlying hardpan is likely no longer intact, and the soil profile of all existing soils mapping units has been thoroughly disrupted as well.

3.1.4 Climate

The San Joaquin Valley has a Mediterranean climate with warm to hot dry summers and cool winters. Annual precipitation in the general vicinity of the site is highly variable from year to year. Average annual rainfall is approximately 11 inches, most of which falls between

November and April (WRCC 2016). Stormwater readily infiltrates the soils of the site; when field capacity has been reached, water may drain west towards the railroad tracks and Road 27 or may perch in onsite depressions or swales.

3.2 SITE HISTORY AFFECTING DISTRIBUTION OF ONSITE HYDROLOGICAL FEATURES

As noted in Sections 2.0 and 3.1 of this report, the entire site consists of an orchard and associated infrastructure. The site has been an orchard since 1978, when it was originally planted with figs. The orchard has been gradually replaced with new figs or almonds, with the most recent replacement occurring between 2005 and 2010. At the time of the 2016 field surveys, the sole crops were almonds and figs.

Prior to the planting of the site as a fig orchard in 1978, historic aerial photography clearly indicates that it consisted of a mosaic of grassland and vernal pool/vernal swale habitats. A blue line stream passed through the northwest corner of the site at that time, although it is not possible to know if this drainage feature every met the regulatory definition of a tributary. A swale passing through the site from east to west joined the blue line tributary to Schmidt Creek near the site's western boundary. Historic aerial photography is otherwise not of adequate quality to locate definitively swales and vernal pool wetlands that may have originally occurred on the site.

At the time the site was converted from grasslands and the associated seasonal wetlands, the soils were deep-ripped to break up any subsurface hardpan that may have been present. Deep ripping and subsequent disking would have smoothed out the minor topography associated with vernal pools and the interconnecting swales, while at the same time mixing the various soil horizons and destroying typical indicators of wetland hydrology. Since that time, surface water generated by winter storms has continued to flow across the site, but mostly as sheet flow. A few discontinuous swales at various locations of the site exhibited drainage patterns consisting of sorted soil particles, deposits of fine-grained sand where slack water formed small pools in depressional areas, and an absence of leaf litter and woody debris. At the time of the field survey in July 2016, the blue line tributary to Schmidt Creek could still be detected as a swale exhibiting flow patterns, and in areas of slack water, a biotic crust composed of dried algae was present. This swale was not a clearly defined channel possessing physical evidence of a bed and bank and

ordinary high water. After more than 38 years of farming, aquatic features that might have once been present could not generally be detected from typical hydrology indicators.

Further complicating the delineation of possible jurisdictional waters on this site was the fact that the orchard is irrigated throughout the dry season. Irrigation is via sprinklers located within the dripline of the tree canopy of each tree. Irrigation occurs at a frequency and for a duration sufficient to support weedy herbaceous annuals that are often associated with agricultural wetlands. While these weedy annuals occur in relatively obscure swales of the site, they are by no means confined to them. They occur in the orchard understory throughout the site. For the most part, these weedy annuals do not occur in hydric soils.

Given these complications to the delineation of possible jurisdictional wetlands of the site, a set of criteria were developed for determining which areas met all the technical criteria of jurisdictional wetlands and which areas would be considered other waters of the site. An area was considered to meet the technical criteria of a jurisdictional wetland if it met all the criteria listed below:

- It was located in a swale visible on a historic aerial photograph;
- It supported hydrophytic vegetation as defined in the *1987 Corps of Engineers Wetland Delineation Manual*;
- The soils were clearly and unambiguously hydric;
- Wetland hydrology was determined to be present from observation during field surveys, the presence of one primary indicator or two secondary indicators of wetland hydrology detected in the field, and a review of historic aerial photography which clearly showed a given location to be ponded during the winter or spring.

This is not to suggest that these areas are necessarily waters of the United States. No area of the site meeting the technical criteria of jurisdictional waters was connected via a tributary as defined by code of federal regulations to downstream waters of the United States.

3.3 POTENTIAL WATERS OF THE UNITED STATES

Vegetation, soil, and hydrology data were gathered at six sample locations. The only aquatic resource identified on the site was a seasonal/irrigated wetland swale (Figure 4; Appendix D).

Ave 18

Tremaine Ave

Rd 27

Rd 28 1/2

Ave 17

761,927 E
4,100,128 N

764,356 E
4,100,180 N

764,422 E
4,098,574 N

SP1
SP2
SP3
SP4
SP5
SP6

Seasonal / Irrigated Wetland
19,755 SF

N

LEGEND

Areas meeting the technical criteria for wetlands

- Seasonal / Irrigated Wetland (19,755 SF / 0.45 Ac.)

Other Features

- Project Boundary (Approx. 802 Ac.)
- SP1 - Sample Points

Live Oak Associates, Inc.

Herman Property
Aquatic Wetland Resources

Date	Project #	Figure #
2/23/2017	995-03	4

1,000' 0 1,000 feet

Approximate Scale 1' = 600'

Source:
Aerial photograph courtesy of USDA FSA Aerial Photogaphy Field Office 12/23/2014
Universal Transverse Mercator Coordinate System Zone 10, NAD83 / NAVD 1988

3.3.1 Tributary Waters

Relatively permanent tributary of a traditional navigable water. No traditional navigable waters or relatively permanent tributaries of such waters are present on the site.

Non-relatively permanent tributaries. Non-relatively permanent tributaries are absent from the site. That is to say that no natural or man-made drainage possessing a defined bed and bank and physical evidence of ordinary high water was present on the Herman property at the time of the field survey conducted for this investigation, nor were any such drainages observed in 2006 at the time of an earlier investigation. A swale passes through the northwest corner of the study area. This swale is part of a USGS blue line tributary of Schmidt Creek that drains a large area of vernal swales/vernal pools located to the north of the study area. A second drainage feature, also tributary to Schmidt Creek, consisted of a broad swale exhibiting flow patterns, deposits of fine-grained sand in some areas of slack water, and a biotic crust in the form of dried algal mats in depressional areas where water pools. However, this swale lacked a defined bed and bank exhibiting physical evidence of ordinary high water.

This swale supported sparse hydrophytic vegetation (sample point 1). The two dominant species within the swale were barnyard grass (*Echinochloa crus-galli*) (FACW) and tall umbrella sedge (*Cyperus eragrostis*) (FACW). Other species included green carpetweed (*Mollugo verticillata*) (FACU), jimsonweed (*Datura wrightii*) (UPL), and feather fingergrass (*Chloris virgata*) (FACU). The soils of this swale were not hydric. The soil was a sandy loam having a Munsell soil notation of 10YR 3/3 throughout the soil profile. Redox features were absent.

3.3.2 Areas Meeting the Technical Criteria of Wetlands

Two hydrologic features within the study area have surface water, support hydrophytic vegetation, and have hydric soils (Sample Point 3). These features do not have a hydrologic connection to downstream waters via a tributary water. Tributary waters are absent from the site. However, one wetland (SW-1) does drain off site via the aforementioned swale during years of intense winter storm activity. As noted previously, this swale lacks a bed and bank and physical evidence of ordinary high water. The surface water and soil saturation is a result of irrigation

during the spring, summer, and fall, although winter rain events contribute, in small part, to these hydrologic conditions. Flow patterns within the seasonal/irrigated swale, including sorting of soil particles, deposition of sand in areas of slack water, and biotic crusts, all indicate inundation and surface flows within, and generally limited to, the truncated swale segment during winters of average to above average precipitation.

Patchy hydrophytic vegetation was observed within the swale. The dominant species was tall umbrella sedge (FACW). The soil at this location was determined to be hydric. The soil profile was a sandy loam throughout its entirety. It had a Munsell notation of 10YR 3/3 for the matrix and 5% redox features in the upper six inches and a Munsell notation of 10YR 4/1 for the matrix and 20% redox features from 6 to 12 inches.

The total area of this feature is 19,755 sq ft (0.45 ac).

3.4 UPLAND AREAS

The remainder of the site failed to meet any of the regulatory definitions of waters of the United States and did not meet all or any of the technical criteria of jurisdictional wetlands (sample points 2, 4, 5, and 6).

Scattered throughout the orchard were shallow depressions that captured irrigation water. Some of these depressions hold water during the summer long enough (i.e., several days) for algae to develop in them. The soils were not hydric. The dominant plants consisted of English plantain (*Plantago lanceolata*) (FAC), cheeseweed (*Malva parviflora*) (UPL), Bermuda grass (*Cynodon dactylon*) (FACU), and, in one location, creeping spikerush (*Eleocharis macrostachya*) (OBL). Other plants occurring in these areas included barnyard grass (FACW), rabbit's-foot grass (*Polypogon monspeliensis*) (FACW), yard knotweed (*Polygonum aviculare* ssp. *depressum*) (FAC), and rattail fescue (*Festuca myuros*) (FACU).

4.0 DISCUSSION

Based on the 2015 rule developed by the USACE and the EPA, LOA has determined that waters of the United States are absent from the Herman property. This conclusion is based on the following:

1) Traditional navigable waters are clearly absent from the property. Such waters were never present on the property.

2) Relatively permanent tributary waters are absent from the property. Such waters were never present on the property.

3) Relatively non-permanent tributary waters possessing a defined bed and bank and physical evidence of ordinary high water are absent from the property. This property was converted to an orchard in 1978, and the only conduit for surface stormwater flows were and remain to this day swales lacking physical evidence of ordinary high water. Thus, tributaries of any type to downstream waters of the United States are absent from the site.

4) Two seasonal wetlands of the site are not adjacent to other known waters of the United States. Adjacency is defined as bordering, contiguous, or neighboring a water of the United States identified in 33 CFR§328.3. Adjacent waters also include all waters that connect segments of a water identified in 33 CFR§328.3 or are located at the head of such waters so long as they are bordering, contiguous, or neighboring such waters. Furthermore, 33 CFR§328.3 stipulates that “waters being used for established normal farming, ranching, and silviculture activities are not adjacent.” The two on-site wetlands do not meet these conditions for adjacency.

5) A significant nexus analysis is not required for this site. The only on-site wetlands identified during field investigations in 2006 and 2016 are isolated from downstream waters by approximately 1.4 miles by non-jurisdictional swales and are clearly not one of five case-specific wetlands requiring a significant nexus analysis. The only areas meeting the technical criteria of jurisdictional wetlands are fed by irrigation tailwater. These areas do not meet the definition of prairie pothole, Carolina bays and Delmarva

bays, Pocosins, western vernal pools, or Texas coastal prairie wetlands. Hence, a significant nexus analysis is not required, and the on-site wetlands may be presumed not to be waters of the United States.

6) The two seasonal wetlands observed on the site are a function of irrigation. They meet the hydrology criterion during the dry season when irrigation supplies soils moisture, not rainfall. These two wetlands support non-native weedy hydrophytes that proliferate during the hot season when the orchard is irrigated. Per the provisions of 33 CFR 328.3(b)((4)(i), these two seasonal wetlands would not be waters of the United States. This part of the 2015 Rule states that "artificially irrigated areas that would revert to dry land should application of water to that area cease" are not waters of the United States.

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APPENDIX A: PHOTOGRAPHS OF THE STUDY AREA

Sample point 1. Swale that is represented as a USGS blue line tributary to Schmidt Creek. Did not meet technical criteria for wetlands.

Sample point 2. Upland area paired with sample point 1.

Sample point 3. Seasonal wetland swale within the almond orchard.

Seasonal/irrigated wetland swale within the almond orchard.

Sample point 4. Upland area paired with sample point 3.

Sample point 5. Topographic depression in the fig orchard.
Did not meet technical criteria for wetlands.

Sample point 6. Upland area in the fig orchard paired with sample point 5.

APPENDIX B: WETLAND DATASHEETS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Herman Property City/County: Madera/Madera County Sampling Date: 14 July 2016

Applicant/Owner: Castellina, LLC State: CA Sampling Point: 1

Investigator(s): Dave Hartesveldt, Davinna Ohlson Section, Township, Range: Section 6, township 11 south, range 18 east

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0-3%

Subregion (LRR): C Lat: 37° 0.621' N Long: 120° 3.356' W Datum: NAD 83

Soil Map Unit Name: Tujunga loamy sand, 0 to 3% slopes NWI classification: Riverine (R4SBC)

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

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

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

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

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

Remarks:

The site is an orchard. It has been planted to almonds and figs since 1978. Therefore, onsite conditions should be considered the "new normal circumstances." Sample point was taken in a swale in the almond orchard.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	- = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	- = Total Cover		
Herb Stratum (Plot size: 10' x 10')			
1. *Echinochloa crus-galli*	1	Y	FACW
2. *Cyperus eragrostis*	1	Y	FACW
3. *Mollugo verticillata*	<1	N	FACU
4. *Datura wrightii*	<1	N	UPL
5. *Chloris virgata*	<1	N	FACU
6.			
7.			
8.			
	2-3 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	- = Total Cover		

% Bare Ground in Herb Stratum 97 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

x Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes _____** **No x**

Remarks:

This plot was within a swale passing through the orchard. Herbaceous vegetation within the swale was patchy. Much of the swale was completely barren of vegetation. Where vegetation was present, the species within the plot for sample point #1 were the species observed. Because the swale is mostly barren, the vegetation criterion is not considered to be met.

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
6"	10 YR 3/3	100					Sandy loam	Redox not observed.
14"	10 YR 3/3	100					Sandy loam	Redox not observed.

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

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

Remarks:

Soils of the site were no doubt deep ripped prior to planting the orchard in 1978. Therefore, different horizons present at the time were thoroughly mixed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- x Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- x Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No x Depth (inches): _____

Water Table Present? Yes _____ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** x **No** _____

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

Remarks:

Surface flows in the swale had washed away clay and silt, leaving behind a sandy bottom. Algal matting was observed wherever water pooled for extended periods of time.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Herman Property City/County: Madera/Madera County Sampling Date: 14 July 2016

Applicant/Owner: Castellina, LLC State: CA Sampling Point: 2

Investigator(s): Dave Hartesveldt, Davinna Ohlson Section, Township, Range: Section 6, township 11 south, range 18 east

Landform (hillslope, terrace, etc.): Level area adjacent to swale Local relief (concave, convex, none): Concave Slope (%): 0-3%

Subregion (LRR): C Lat: 37° 0.621' N Long: 120° 3.356' W Datum: NAD 83

Soil Map Unit Name: Tujunga loamy sand, 0 to 3% slopes NWI classification: None

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

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

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

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

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

Remarks:

The site is an orchard. It has been planted to almonds and figs since 1978. Therefore, onsite conditions should be considered the "new normal circumstances." Sample point was taken in the almond orchard.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	- = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	- = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	- = Total Cover		
Woody Vine Stratum (Plot size: 10' x 10')			
1.			
2.			
	- = Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes _____ No x**

Remarks:

This sampling location is barren of vegetation.

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
6	10 YR 3/4	100					Sandy loam	Redox not observed.
12-15	10 YR 3/4	100					Sandy loam	Redox not observed.

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No x

Remarks:

Soils of the site were no doubt deep ripped prior to planting the orchard in 1978. Therefore, different horizons present at the time were thoroughly mixed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No x Depth (inches): _____

Water Table Present? Yes _____ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No x Depth (inches): _____

Wetland Hydrology Present? Yes _____ No x

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

Remarks:

This sampling location is on an upland slope (very gradual) within the orchard 20-30 ft from the swale.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Herman Property City/County: Madera/Madera County Sampling Date: 14 July 2016

Applicant/Owner: Castellina, LLC State: CA Sampling Point: 3

Investigator(s): Dave Hartesveldt, Davinna Ohlson Section, Township, Range: Section 6, township 11 south, range 18 east

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 3%

Subregion (LRR): C Lat: 37° 0.596' N Long: 120° 2.826' W Datum: NAD 83

Soil Map Unit Name: Cometa sandy loam, 3 to 8% slopes NWI classification: None

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

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

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

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

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

Remarks:

The site is an orchard. It has been planted to almonds and figs since 1978. Therefore, onsite conditions should be considered the "new normal circumstances." Sample point was taken in a swale segment in the almond orchard.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	- = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	- = Total Cover		
Herb Stratum (Plot size: 10' x 10')			
1. *Cyperus eragrostis*	50	Y	FACW
2. *Polygonum aviculare* ssp. *depressum*	10	N	FAC
3. *Malva parviflora*	2	N	UPL
4. *Amaranthus albus*	2	N	FACU
5. *Echinochloa crus-galli*	1	N	FACW
6.			
7.			
8.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	- = Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

x Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes x No _____**

Remarks:

Sample plot occurs in a large swale occurring in an almond orchard.

SOIL

Sampling Point: 3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
6	10 YR 3/3	95	7.5 YR 4/4	5	RM	M	Sandy loam	
12	10 YR 4/1	80	7.5 YR 4/4	20	RM	M	Sandy loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

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

Remarks:

Soils of the site were no doubt deep ripped prior to planting the orchard in 1978. Therefore, different horizons present at the time were thoroughly mixed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- x Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- x Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes x No _____ Depth (inches): < 0.5

Water Table Present? Yes _____ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** x **No** _____

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

Remarks:

Surrounding area is an almond orchard. Irrigation is currently running at the base of trees, which is creating some shallow ponded areas.

Inundation visible on aerial imagery from April 2011. Inundation may be a combination of stormwater and irrigation.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Herman Property City/County: Madera/Madera County Sampling Date: 14 July 2016

Applicant/Owner: Castellina, LLC State: CA Sampling Point: 4

Investigator(s): Dave Hartesveldt, Davinna Ohlson Section, Township, Range: Section 6, township 11 south, range 18 east

Landform (hillslope, terrace, etc.): Terrace adjacent to swale Local relief (concave, convex, none): Concave Slope (%): 3%

Subregion (LRR): C Lat: 37° 0.596' N Long: 120° 2.826' W Datum: NAD 83

Soil Map Unit Name: Cometa sandy loam, 3 to 8% slopes NWI classification: None

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

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

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

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

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

Remarks:

The site is an orchard. It has been planted to almonds and figs since 1978. Therefore, onsite conditions should be considered the "new normal circumstances." Sample point was taken in the almond orchard adjacent to a swale.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	-	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	-	= Total Cover	
Herb Stratum (Plot size: 10' x 10')			
1. *Malva parviflora*	30	Y	UPL
2. *Echinochloa crus-galli*	5	N	FACW
3. *Bromus hordeaceus*	5	N	FACU
4. *Polygonum aviculare* ssp. *depressum*	1	N	FAC
5.			
6.			
7.			
8.			
	41	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	-	= Total Cover	

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes _____ No x**

Remarks:

Criterion not met.

SOIL

Sampling Point: 4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 3/3	100					Sandy loam	Redox not observed.

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No x

Remarks:

Soils of the site were no doubt deep ripped prior to planting the orchard in 1978. Therefore, different horizons present at the time were thoroughly mixed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes x No _____ Depth (inches): < 0.25

Water Table Present? Yes _____ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No x Depth (inches): _____

Wetland Hydrology Present? Yes _____ No x

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

Remarks:

Some water present due to the irrigation system running at the time that the sample point was taken.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Herman Property City/County: Madera/Madera County Sampling Date: 14 July 2016

Applicant/Owner: Castellina, LLC State: CA Sampling Point: 5

Investigator(s): Dave Hartesveldt, Davinna Ohlson Section, Township, Range: Section 6, township 11 south, range 18 east

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 3%

Subregion (LRR): C Lat: 37° 0.587' N Long: 120° 2.347' W Datum: NAD 83

Soil Map Unit Name: Cometa sandy loam, 3 to 8% slopes NWI classification: None

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

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

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

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

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

Remarks:

The site is an orchard. It has been planted to almonds and figs since 1978. Therefore, onsite conditions should be considered the "new normal circumstances." Sample point was taken in a swale in a fig orchard.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	- = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	- = Total Cover		
Herb Stratum (Plot size: 10' x 10')			
1. *Eleocharis macrostachya*	50	Y	OBL
2. *Cynodon dactylon*	50	Y	FACU
3. *Polypogon monspeliensis*	10	N	FACW
4. *Hordeum marinum*	5	N	FAC
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	- = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	10	x 2 =	20
FAC species	5	x 3 =	15
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	115 (A)		285 (B)

Prevalence Index = B/A = 2.48

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

x Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes x No _____**

Remarks:

Swale occurs in an area of the orchard where fewer fig trees are growing. The dominance test wasn't met, but the prevalence index is less than 3.0.

SOIL

Sampling Point: 5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10 YR 4/3	90	indistinct	10	RM	M	Sandy loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No __x__

Remarks:

Soils of the site were no doubt deep ripped prior to planting the orchard in 1978. Therefore, different horizons present at the time were thoroughly mixed. Unable to dig past 8 inches.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No __x__ Depth (inches): _____

Water Table Present? Yes _____ No __x__ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No __x__ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No __x__

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

Remarks:

No wetland hydrology indicators were observed during field visits in March 2016 or July 2016. Surface water was observed at this location in the winter of 2006-07 and spring of 2007.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Herman Property City/County: Madera/Madera County Sampling Date: 14 July 2016

Applicant/Owner: Castellina, LLC State: CA Sampling Point: 6

Investigator(s): Dave Hartesveldt, Davinna Ohlson Section, Township, Range: Section 6, township 11 south, range 18 east

Landform (hillslope, terrace, etc.): Terrace adjacent to swale Local relief (concave, convex, none): Concave Slope (%): 3%

Subregion (LRR): C Lat: 37° 0.587' N Long: 120° 2.347' W Datum: NAD 83

Soil Map Unit Name: Cometa sandy loam, 3 to 8% slopes NWI classification: None

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

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

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

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

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

Remarks:

The site is an orchard. It has been planted to almonds and figs since 1978. Therefore, onsite conditions should be considered the "new normal circumstances." Sample point was taken adjacent to a swale in a fig orchard.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	-	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	-	= Total Cover	
Herb Stratum (Plot size: 10' x 10')			
1. *Cynodon dactylon*	50	Y	FACU
2. *Plantago lanceolate*	40	Y	FAC
3. *Lythrum hyssopifolium* (tire rut)	5	N	OBL
4. *Polypogon monspeliensis* (tire rut)	5	N	FACW
5. *Festuca myuros*	1	N	FACU
6.			
7.			
8.			
	101	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	-	= Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes _____ No x**

Remarks:

Criterion not met.

SOIL

Sampling Point: 6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 3/3	100					Sandy loam	Redox not observed.

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No x

Remarks:

Soils of the site were no doubt deep ripped prior to planting the orchard in 1978. Therefore, different horizons present at the time were thoroughly mixed. Unable to dig past 6 inches.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No x Depth (inches): _____

Water Table Present? Yes _____ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No x Depth (inches): _____

Wetland Hydrology Present? Yes _____ No x

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

Remarks:

No hydrology indicators are present.

APPENDIX C: VASCULAR PLANTS OF THE STUDY AREA

The plants species listed below were observed on the Herman Property/Castellina site during field surveys conducted by Live Oak Associates on December, 2, 2006, and on March 31 and July 14, 2016. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland

AMARANTHACEAE – Amaranthus Family		
*Amaranthus albus**	Tumbleweed	FACU
Amaranthus blitoides	Mat amaranth	FACU
ASTERACEAE – Sunflower Family		
*Cichorium intybus**	Chicory	FACU
Erigeron canadensis	Canadian horseweed	FAC
*Lactuca serriola**	Prickly lettuce	FACU
Matricaria occidentalis	Pineappleweed	FACW
*Senecio vulgaris**	Common groundsel	FACU
*Sonchus asper**	Prickly sowthistle	FAC
BRASSICACEAE – Mustard Family		
*Brassica nigra**	Black mustard	UPL
*Capsella bursa-pastoris**	Shepherd's purse	FACU
CARYOPHYLLACEAE – Pink Family		
*Stellaria media**	Chickweed	FACU
CHENOPODIACEAE – Goosefoot Family		
*Chenopodium album**	Lamb's-quarters	FACU
*Salsola tragus**	Russian thistle	FACU
CYPERACEAE – Sedge Family		
Cyperus eragrostis	Tall flatsedge	FACW
Eleocharis macrostachya	Common spikerush	OBL
EUPHORBIACEAE – Spurge Family		
Croton setiger	Doveweed	UPL
FABACEAE – Legume Family		
*Medicago polymorpha**	Burclover	FACU
GERANIACEAE – Geranium Family		
*Erodium cicutarium**	Redstem filaree	UPL
*Erodium moschatum**	Whitestem filaree	UPL
LYTHRACEAE – Loosestrife Family		
*Lythrum hyssopifolium**	Hyssop loosestrife	OBL
*Punica granatum**	Pomegranate	UPL
MALVACEAE – Mallow Family		

*Malva parviflora**	Cheeseweed	UPL
MOLLUGINACEAE – Carpetweed Family		
*Mollugo verticillata**	Green carpetweed	FACU
MORACEAE – Mulberry Family		
*Ficus carica**	Edible fig	UPL
MYRSINACEAE – Myrsine Family		
*Anagallis arvensis**	Scarlet pimpernel	FAC
ONAGRACEAE – Evening Primrose Family		
Epilobium brachycarpum	Willow herb	FACU
PLANTAGINACEAE – Plantain Family		
*Plantago lanceolata**	English plantain	FAC
POACEAE – Grass Family		
Avena sp.*	Oat	UPL
Bromus carinatus	California brome	UPL
*Bromus diandrus**	Ripgut brome	UPL
*Bromus hordeaceus**	Soft chess	FACU
*Chloris virgata**	Feather windmill grass	FACU
*Crypsis schoenoides**	Swamp timothy	OBL
*Cynodon dactylon**	Bermuda grass	FACU
Echinochloa crus-galli	Barnyard grass	FACW
Hordeum marinum ssp. *gussoneaum**	Mediterranean barley	FAC
*Hordeum murinum**	Foxtail barley	FACU
Leptochloa fusca	Sprangletop	UPL
Panicum sp.	Panicgrass	-
*Poa annua**	Annual bluegrass	FACU
*Polypogon monospeliensis**	Rabbitsfoot grass	FACW
POLYGONACEAE – Knotweed Family		
Polygonum aviculare ssp. *depressum**	Common knotweed	FAC
*Rumex crispus**	Curly dock	FAC
*Rumex pulcher**	Fiddle dock	FAC
ROSACEAE – Rose Family		
*Eriobotrya japonica**	Loquat	UPL
*Prunus dulcis**	Cultivated almond	UPL
SALICACEAE – Willow Family		
Salix sp.	Willow	-
SOLANACEAE – Nightshade Family		
Datura wrightii	Jimsonweed	UPL
ZYGOPHYLLACEAE - Caltrop Family		
*Tribulus terrestris**	Puncture vine	UPL

* Introduced non-native species

APPENDIX D: AQUATIC RESOURCES OF THE STUDY AREA

HERMAN PROPERTY AQUATIC RESOURCES TABLE

Waters Name	Cowardin Code	HGM Code	Measurement Type	Amount	Units	Waters Type	Latitude	Longitude	Local Waterway
Seasonal/irrigated wetland swale	PUB2	SLOPE	Area	19755	sq ft	ISOLATE	37° 0.592' N	120° 2.820' W	n/a

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

September 9, 2019

Regulatory Division (SPK-2017-00317)

Hardt Mason Law
Attn: Ms. Katherine Hardt-Mason
1145 Teresa Lane
Morgan Hill, California 95037
katiehardtmason@outlook.com

Dear Ms. Hardt-Mason:

We are responding to your October 26, 2018, request for an approved jurisdictional determination for the Herman Property site. The approximately 802-acre project site is located near Road 27 and the BNSF Railway, Sections 5 and 6, Township 11 South, Range 18 East, Mount Diablo Meridian, Latitude 37.00426°, Longitude -120.04049, Madera County, California.

Based on available information, we concur with the aquatic resources delineation for the site, as depicted on the enclosed February 5, 2018, *Delineation of Wetlands and Other Waters of the United States for Herman Property* drawing, prepared by the United States Army Corps of Engineers (enclosure 1). Approximately 0.56 acre of aquatic resources, consisting of 0.56 acre of seasonal wetlands, are present within the survey area.

The 0.56-acre of aquatic resources identified as “SW-1 and NW-1" on the above drawing are aquatic resources with no apparent interstate or foreign commerce connection. As such, these aquatic resources are not currently regulated by the U.S. Army Corps of Engineers. This disclaimer of jurisdiction is only for Section 404 of the Federal Clean Water Act.

We are enclosing a copy of the *Approved Jurisdictional Determination Form* for your site (enclosure 2).

This approved jurisdictional determination is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 Code of Federal Regulations (CFR) Part 331.

A *Notification of Appeal Process (NAP) and Request for Appeal (RFA) Form* is enclosed (enclosure 3). If you request to appeal this determination, you must submit a completed RFA form to the South Pacific Division Office at the following address:

Administrative Appeal Review Officer, Army Corps of Engineers, South Pacific Division, CESPD-PDO, 1455 Market Street, 2052B, San Francisco, California 94103-1399, Telephone: 415-503-6574, FAX: 415-503-6646.

In order for an RFA to be accepted by the Corps, we must determine that the form is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that the form was received by the Division Office within 60 days of the date of the NAP. It is not necessary to submit an RFA form to the Division Office unless you object to the determination in this letter.

We recommend that you provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This approved jurisdictional determination has been conducted to identify the limits of aquatic resources subject to U.S. Army Corps of Engineers jurisdiction under Section 404 of the Clean Water Act for the particular site identified in this request.

We appreciate feedback, especially about interaction with our staff and our processes.

Please refer to identification number SPK-2017-00317 in any correspondence concerning this project. If you have any questions, please contact Mr. Jesse Stovall at the address on the above letterhead, by email at *Jesse.T.Stovall@usace.army.mil*, or telephone at (916) 557-7506. For program information or to complete our Customer Survey, visit our website at *www.spk.usace.army.mil/Missions/Regulatory.aspx*.

Sincerely,

William Ness
Senior Project Manager
California South Section

Enclosures

cc: (w/o encls)
Ms. Stephanie Tadlock, Storm Water and Water Quality Certification Unit, Central Valley Regional Water Quality Control Board (5S), *stephanie.tadlock@waterboards.ca.gov*
Mr. Dave Hartensveldt, Senior Botanist/Wetland Biologist, Live Oak and Associates, Inc. *DHartesveldt@loainc.com*

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Hardt Mason Law, Attn: Ms. Katherine Hardt-Mason	File No.: SPK-2017-00317	Date: September 9, 2019

Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
→	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at *http://www.usace.army.mil/cecw/pages/reg_materials.aspx* or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Jesse Stovall
U.S. Army Corps of Engineers
Regulatory Division
California South Section
1325 J Street, Room 1350
Sacramento, California 95814-2922
Jesse.T.Stovall@usace.army.mil

If you only have questions regarding the appeal process you may also contact:

Thomas J. Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division
1455 Market Street, 2052B
San Francisco, California 94103-1399
Phone: 415-503-6574, FAX 415-503-6646
Email: *Thomas.J.Cavanaugh@usace.army.mil*

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or agent.		

Regulatory Program

INTERIM APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers
This form should be completed by following the instructions provided in the Interim Approved Jurisdictional Determination Form User Manual.

SECTION I: BACKGROUND INFORMATION

A. COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (AJD):

B. ORM NUMBER IN APPROPRIATE FORMAT (e.g., HQ-2015-00001-SMJ): SPK-2017-00317

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: California County/parish/borough: Madera County City:
Center coordinates of site (lat/long in degree decimal format): Lat. 37.0042565092837, Long. -120.040485386351.
Map(s)/diagram(s) of review area (including map identifying single point of entry (SPOE) watershed and/or potential jurisdictional areas where applicable) is/are: ☒ attached ☐ in report/map titled .
☐ Other sites (e.g., offsite mitigation sites, disposal sites, etc.) are associated with this action and are recorded on a different jurisdictional determination (JD) form. List JD form ID numbers (e.g., HQ-2015-00001-SMJ-1): .

D. REVIEW PERFORMED FOR SITE EVALUATION:
☐ Office (Desk) Determination Only. Date: .
☒ Office (Desk) and Field Determination. Office/Desk Dates: Field Date(s): September 18, 2017.

SECTION II: DATA SOURCES

Check all that were used to aid in the determination and attach data/maps to this AJD form and/or references/citations in the administrative record, as appropriate.
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant. Title/Date: INVESTIGATION OF POTENTIAL WATERS OF THE UNITED STATES HERMAN PROPERTY/CASTELLINA MADERA COUNTY, CALIFORNIA, October 22, 2018.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Data sheets/delineation report are sufficient for purposes of AJD form. Title/Date: INVESTIGATION OF POTENTIAL WATERS OF THE UNITED STATES HERMAN PROPERTY/CASTELLINA MADERA COUNTY, CALIFORNIA, October 22, 2018.
☐ Data sheets/delineation report are not sufficient for purposes of AJD form. Summarize rationale and include information on revised data sheets/delineation report that this AJD form has relied upon: .
Revised Title/Date: .
☐ Data sheets prepared by the Corps. Title/Date: .
☐ Corps navigable waters study. Title/Date: .
☐ CorpsMap ORM map layers. Title/Date: .
☐ USGS Hydrologic Atlas. Title/Date: .
☐ USGS, NHD, or WBD data/maps. Title/Date: .
☐ USGS 8, 10 and/or 12 digit HUC maps. HUC number: .
☒ USGS maps. Scale & quad name and date: 1:24k, Madera, 2012.
☒ USDA NRCS Soil Survey. Citation: April 9, 2019.
☒ USFWS National Wetlands Inventory maps. Citation: May 6, 2019.
☐ State/Local wetland inventory maps. Citation: .
☐ FEMA/FIRM maps. Citation: .
☒ Photographs: ☒ Aerial. Citation: Google Earth, August 23, 2018. or ☐ Other. Citation: .
☐ LiDAR data/maps. Citation: .

☒ Previous JDs. File no. and date of JD letter: SPK-2017-00317, March 6, 2018.
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

SECTION III: SUMMARY OF FINDINGS

Complete ORM "Aquatic Resource Upload Sheet" or Export and Print the Aquatic Resource Water Droplet Screen from ORM for All Waters and Features, Regardless of Jurisdictional Status – Required

A. RIVERS AND HARBORS ACT (RHA) SECTION 10 DETERMINATION OF JURISDICTION:
☐ "*navigable waters of the U.S.*" within RHA jurisdiction (as defined by 33 CFR part 329) in the review area.
- **Complete Table 1 - Required**

NOTE: If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Section 10 navigable waters list, DO NOT USE THIS FORM TO MAKE THE DETERMINATION. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Section 10 RHA navigability determination.

B. CLEAN WATER ACT (CWA) SECTION 404 DETERMINATION OF JURISDICTION: "*waters of the U.S.*" within CWA jurisdiction (as defined by 33 CFR part 328.3) in the review area. **Check all that apply.**
☐ (a)(1): All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide. (Traditional Navigable Waters (TNWs))
- **Complete Table 1 - Required**

☐ This AJD includes a case-specific (a)(1) TNW (Section 404 navigable-in-fact) determination on a water that has not previously been designated as such. Documentation required for this case-specific (a)(1) TNW determination is attached.

☐ (a)(2): All interstate waters, including interstate wetlands.
- **Complete Table 2 - Required**

☐ (a)(3): The territorial seas.
- **Complete Table 3 - Required**

☐ (a)(4): All impoundments of waters otherwise identified as waters of the U.S. under 33 CFR part 328.3.
- **Complete Table 4 - Required**

☐ (a)(5): All tributaries, as defined in 33 CFR part 328.3, of waters identified in paragraphs (a)(1)-(a)(3) of 33 CFR part 328.3.
- **Complete Table 5 - Required**

☐ (a)(6): All waters adjacent to a water identified in paragraphs (a)(1)-(a)(5) of 33 CFR part 328.3, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters.
- **Complete Table 6 - Required**

☐ Bordering/Contiguous.
Neighboring:
☐ (c)(2)(i): All waters located within 100 feet of the ordinary high water mark (OHWM) of a water identified in paragraphs (a)(1)-(a)(5) of 33 CFR part 328.3.
☐ (c)(2)(ii): All waters located within the 100-year floodplain of a water identified in paragraphs (a)(1)-(a)(5) of 33 CFR part 328.3 and not more than 1,500 feet of the OHWM of such water.
☐ (c)(2)(iii): All waters located within 1,500 feet of the high tide line of a water identified in paragraphs (a)(1) or (a)(3) of 33 CFR part 328.3, and all waters within 1,500 feet of the OHWM of the Great Lakes.

☐ (a)(7): All waters identified in 33 CFR 328.3(a)(7)(i)-(v) where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (a)(1)-(a)(3) of 33 CFR part 328.3.
- **Complete Table 7 for the significant nexus determination. Attach a map delineating the SPOE watershed boundary with (a)(7) waters identified in the similarly situated analysis. - Required**

☐ Includes water(s) that are geographically and physically adjacent per (a)(6), but are being used for established, normal farming, silviculture, and ranching activities (33 USC Section 1344(f)(1)) and therefore are not adjacent and require a case-specific significant nexus determination.

☐ (a)(8): All waters located within the 100-year floodplain of a water identified in paragraphs (a)(1)-(a)(3) of 33 CFR part 328.3 not covered by (c)(2)(ii) above and all waters located within 4,000 feet of the high tide line or OHWM of a water identified in paragraphs (a)(1)-(a)(5) of 33 CFR part 328.3 where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs (a)(1)-(a)(3) of 33 CFR part 328.3.

- **Complete Table 8 for the significant nexus determination. Attach a map delineating the SPOE watershed boundary with (a)(8) waters identified in the similarly situated analysis. - Required**

☐ Includes water(s) that are geographically and physically adjacent per (a)(6), but are being used for established, normal farming, silviculture, and ranching activities (33 USC Section 1344(f)(1)) and therefore are not adjacent and require a case-specific significant nexus determination.

C. NON-WATERS OF THE U.S. FINDINGS:

Check all that apply.

☐ The review area is comprised entirely of dry land.

☐ Potential-(a)(7) Waters: Waters that DO NOT have a significant nexus to a water identified in paragraphs (a)(1)-(a)(3) of 33 CFR part 328.3.

- **Complete Table 9 and attach a map delineating the SPOE watershed boundary with potential (a)(7) waters identified in the similarly situated analysis. - Required**

☐ Includes water(s) that are geographically and physically adjacent per (a)(6), but are being used for established, normal farming, silviculture, and ranching activities (33 USC Section 1344(f)(1)) and therefore are not adjacent and require a case-specific significant nexus determination.

☒ Potential-(a)(8) Waters: Waters that DO NOT have a significant nexus to a water identified in paragraphs (a)(1)-(a)(3) of 33 CFR part 328.3.

- **Complete Table 9 and attach a map delineating the SPOE watershed boundary with potential (a)(8) waters identified in the similarly situated analysis. - Required**

☐ Includes water(s) that are geographically and physically adjacent per (a)(6), but are being used for established, normal farming, silviculture, and ranching activities (33 USC Section 1344(f)(1)) and therefore are not adjacent and require a case-specific significant nexus determination.

☐ Excluded Waters (Non-Waters of U.S.), even where they otherwise meet the terms of paragraphs (a)(4)-(a)(8):

- **Complete Table 10 - Required**

☐ (b)(1): Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA.

☐ (b)(2): Prior converted cropland.

☐ (b)(3)(i): Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.

☐ (b)(3)(ii): Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands.

☐ (b)(3)(iii): Ditches that do not flow, either directly or through another water, into a water identified in paragraphs (a)(1)-(a)(3).

☐ (b)(4)(i): Artificially irrigated areas that would revert to dry land should application of water to that area cease.

☐ (b)(4)(ii): Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds.

☐ (b)(4)(iii): Artificial reflecting pools or swimming pools created in dry land.[1]

☐ (b)(4)(iv): Small ornamental waters created in dry land.[1]

☐ (b)(4)(v): Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water.

☐ (b)(4)(vi): Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways.[1]

☐ (b)(4)(vii): Puddles.[1]

☐ (b)(5): Groundwater, including groundwater drained through subsurface drainage systems.[1]

☐ (b)(6): Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.[1]

☐ (b)(7): Wastewater recycling structures created in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling.

☐ Other non-jurisdictional waters/features within review area that do not meet the definitions in 33 CFR 328.3 of (a)(1)-(a)(8) waters and are not excluded waters identified in (b)(1)-(b)(7).

- **Complete Table 11 - Required.**

D. ADDITIONAL COMMENTS TO SUPPORT AJD: The flow path from the study area to the Pacific Ocean can be seen in exhibit 1. Tributary of SJR flow path leaves project site via non-jurisdictional swales to Schmidt Creek, Dry Creek, Fresno River, then the East Side Bypass. After entering the East Side Bypass the flow path has numerous

[1] In many cases these excluded features will not be specifically identified on the AJD form, unless specifically requested. Corps Districts may, in case-by-case instances, choose to identify some or all of these features within the review area.

paths to reach the San Joaquin River, the nearest traditionally navigable water. Numerous diversions exists as either irrigation channels or bypass structures for flood controls. Determination of a primary flow path has not been made as it is beyond the scope of this evaluation however; each path will be listed as a potential path. After entering the East Side Bypass (ESB), the first potential flow path would exit the ESB via a diversion channel that meets the Fresno River again. The Fresno River at this location is discontinuous as it has been interrupted by the ESB. The Fresno River flows through partially channelized sections to the SJR. The next potential flow path exits the ESB to Brenda Slough to the Fresno River and to the SJR. The next potential flow path would exit the ESB into Sand Slough to the Mariposa Slough to the SJR. This path seems to be unlikely as satellite imagery seems to indicate a weir at the intersection of the ESB and Sand Slough that would prohibit flow into Sand Slough but this could not be determined as fact. The next potential flow path exits the ESB into the Mariposa Bypass to Mariposa Slough to the SJR. The last potential flow path exits the ESB into East Side Slough, Deep Slough, Bear Creek, SJR. .

Jurisdictional Waters of the U.S.

Table 1. (a)(1) Traditional Navigable Waters

(a)(1) Waters Name	(a)(1) Criteria	Rationale to Support (a)(1) Designation Include High Tide Line or Ordinary High Water Mark indicators, when applicable.
N/A	N/A	N/A

Table 2. (a)(2) Interstate Waters

(a)(2) Waters Name	Rationale to Support (a)(2) Designation
N/A	N/A

Table 3. (a)(3) Territorial Seas

(a)(3) Waters Name	Rationale to Support (a)(3) Designation
N/A	N/A

Table 4. (a)(4) Impoundments

(a)(4) Waters Name	Rationale to Support (a)(4) Designation
N/A	N/A
N/A	N/A

Table 5. (a)(5)Tributaries

(a)(5) Waters Name	Flow Regime	(a)(1)-(a)(3) Water Name to which this (a)(5) Tributary Flows	Tributary Breaks	Rationale for (a)(5) Designation and Additional Discussion. Identify flowpath to (a)(1)-(a)(3) water or attach map identifying the flowpath; explain any breaks or flow through excluded/non-jurisdictional features, etc.
N/A	Choose an item.	N/A	Choose an item.	N/A
N/A	Choose an item.	N/A	Choose an item.	N/A
N/A	Choose an item.	N/A	Choose an item.	N/A
N/A	Choose an item.	N/A	Choose an item.	N/A

Table 6. (a)(6) Adjacent Waters

(a)(6) Waters Name	(a)(1)-(a)(5) Water Name to which this Water is Adjacent	Rationale for (a)(6) Designation and Additional Discussion. Identify the type of water and how the limits of jurisdiction were established (e.g., wetland, 87 Manual/Regional Supplement); explain how the 100-year floodplain and/or the distance threshold was determined; whether this water extends beyond a threshold; explain if the water is part of a mosaic, etc.
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Table 7. (a)(7) Waters

SPOE Name	(a)(7) Waters Name	(a)(1)-(a)(3) Water Name to which this Water has a Significant Nexus	Significant Nexus Determination Identify SPOE watershed; discuss whether any similarly situated waters were present and aggregated for SND; discuss data, provide analysis, and summarize how the waters have more than speculative or insubstantial effect on the physical, chemical, or biological integrity of the (a)(1)-(a)(3) water, etc.
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Table 8. (a)(8) Waters

SPOE Name	(a)(8) Waters Name	(a)(1)-(a)(3) Water Name to which this Water has a Significant Nexus	Significant Nexus Determination Identify SPOE watershed; explain how 100-yr floodplain and/or the distance threshold was determined; discuss whether waters were determined to be similarly situated to subject water and aggregated for SND; discuss data, provide analysis, and then summarize how the waters have more than speculative or insubstantial effect the on the physical, chemical, or biological integrity of the (a)(1)-(a)(3) water, etc.
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Non-Jurisdictional Waters

Table 9. Non-Waters/No Significant Nexus

SPOE Name	Non-(a)(7)/(a)(8) Waters Name	(a)(1)-(a)(3) Water Name to which this Water DOES NOT have a Significant Nexus	Basis for Determination that the Functions DO NOT Contribute Significantly to the Chemical, Physical, or Biological Integrity of the (a)(1)-(a)(3) Water. Identify SPOE watershed; explain how 100-yr floodplain and/or the distance threshold was determined; discuss whether waters were determined to be similarly situated to the subject water; discuss data, provide analysis, and summarize how the waters did not have more than a speculative or insubstantial effect on the physical, chemical, or biological integrity of the (a)(1)-(a)(3) water.
N/A	SW-1	San Joaquin River	The nearest (a)(1)-(a)(5) water is over 4,000 linear feet from SW-1. SW-1 has been determined to not be adjacent or similarly situated to waters of the US. As seen in exhibit 1, SW-1 lies approximately 9,184 feet from the nearest a(5) water (Schmidt Creek). The nearest (a)(5) tributary is Schmidt Creek. This water has an ordinary high water mark (OHWM), defined bed and bank and flow patterns at beginning at approximately 37.011264°, -120.079695° (OHWM-1). National Wetland Inventory data sources identify Schmidt Creek as having a distinct flow path that continues eastward approximately 4.5 miles of OHWM-1. However based on field observation and satellite imagery this section eastward of OHWM-1 does not exhibit characteristics of an a(5) water. It lacks an ordinary high-water mark. The flow is discrete and confined within the swale but, is lacks an OHWM and has neither bed nor banks. Exhibit 3 documents all available locations where Schmidt Creek could be observed for defining characteristics. Therefore the point OHWM-1 becomes the closest a(5) to SW-1. OHWM-1 lies approximately 2 miles from SW-1, therefore it does not meet one of the parameters of similarly situated as it lies greater than 4,000 feet from the nearest water of the US, in this case Schmidt Creek an a(5) water. SW-1 is hydrologically connected to downstream waters via a defined swale be this flow path lacks an OHWM or defined bed and bank. SW-1 was delineated as a seasonal wetland by Live Oak Associates, Inc. on February 23, 2017. The October 22, 2018 Revised INVESTIGATION OF POTENTIAL WATERS OF THE UNITED STATES HERMAN PROPERTY/CASTELLINA MADERA COUNTY, CALIFORNIA, is incorporated as exhibit 2. A site visit was conducted on September 18, 2017, to confirm and document the extent of the delineated wetlands. The Corps concurs with the delineation of SW-1. A photo log of the site visit is incorporated as exhibit 4.
N/A	NW-1	San Joaquin River	The nearest (a)(1)-(a)(5) water is over 4,000 linear feet from NW-1. NW-1 has been determined to not be adjacent or similarly situated to waters of the US. As seen in exhibit 1, NW-1 lies approximately 9,184 feet from the nearest a(5) water (Schmidt Creek). The nearest (a)(5) tributary is Schmidt Creek. This water has an ordinary high water mark (OHWM), defined bed and bank and flow patterns at beginning at approximately

			37.011264°, -120.079695° (OHWM-1). National Wetland Inventory data sources identify Schmidt Creek as having a distinct flow path that continues eastward approximately 4.5 miles of OHWM-1. However based on field observation and satellite imagery this section eastward of OHWM-1 does not exhibit characteristics of an a(5) water. It lacks an ordinary high-water mark. The flow is discrete and confined within the swale but, is lacks an OHWM and has neither bed nor banks. Exhibit 3 documents all available locations where Schmidt Creek could be observed for defining characteristics. Therefore the point OHWM-1 becomes the closest a(5) to NW-1. OHWM-1 lies approximately 2 miles from NW-1, therefore it does not meet one of the parameters of similarly situated as it lies greater than 4,000 feet from the nearest water of the US, in this case Schmidt Creek an a(5) water.

Table 10. Non-Waters/Excluded Waters and Features

Paragraph (b) Excluded Feature/Water Name	Rationale for Paragraph (b) Excluded Feature/Water and Additional Discussion.
N/A	N/A
N/A	N/A

Table 11. Non-Waters/Other

Other Non-Waters of U.S. Feature/Water Name	Rationale for Non-Waters of U.S. Feature/Water and Additional Discussion.
N/A	N/A

Delineation of Wetlands and Other Waters of the United States for Herman Property
SPK-2017-00317
February 5, 2018

Delineation Performed on July 14, 2016
According to 1987 Delineation Manual and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008)
By:Dave Hartesveldt Rick Hopkins and Davinna Ohlson
Live Oak and Associates, INC.

Follow up site visit and delination of Non-jurisdictional Water Performed on September 18, 2017 According to 1987 Delineation Manual and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008)
By: Jesse Stovall, Senior Project Manager
U.S. Army Corps of Engineers
Sacramento District, Regulatory Division
1325 J Street, Room 1350
Sacramento, CA 95814-2922
Revised September 10, 2019

800
Feet

1 inch = 800 feet

1:9,673

Legend

- NW-1 - seasonal wetland (0.11 Ac.)
- SW-1 -seasonal wetland (0.45 Ac.) Project boundary (Approx. 802 Acres)

N
W E
S

Datum: NAD_1983_UTM_Zone_10N
Projection: Transverse_Mercator

Delineation Map Prepared By:
Jesse Stovall
Project Manager, California South Section
US Army Corps of Engineers
Sacramento District, Regulatory Division
1325 J Street, Room 1350
Sacramento, California 95814-2922

D-5 Jurisdictional Determination

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

March 6, 2018

Regulatory Division (SPK-2017-00317)

Hardt Mason Law
Attn: Ms. Katharine Hardt-Mason
1145 Teresa Lane
Morgan Hill, CA 95037

Dear Ms. Hardt-Mason:

We are responding to your April 10, 2017 request for an approved jurisdictional determination for the Herman Property site. The approximately 794-acre project site is located near Road 27 and the BNSF Railway, Sections 5 and 6, Township 11 South, Range 18 East, Mount Diablo Meridian, Latitude 37.00426°, Longitude -120.040489, Madera County, California.

Based on available information, we concur with the aquatic resources delineation for the site, as depicted on the enclosed February 5, 2018, *Delineation of Wetlands and Other Waters of the United States for Herman Property* drawing, prepared by the U. S. States Army Corps of Engineers (enclosure 1). Approximately 0.45 acres of aquatic resources, consisting of 0.45 acres of seasonal wetland, are present within the survey area. These aquatic resources ("waters of the United States") are regulated under Section 404 of the Clean Water Act.

The 0.11-acre of aquatic resources identified as non-jurisdictional wetland (NW-1) on the above drawing is an intrastate isolated aquatic resource with no apparent interstate or foreign commerce connection. As such, this aquatic resource is not currently regulated by the U.S. Army Corps of Engineers. This disclaimer of jurisdiction is only for Section 404 of the Federal Clean Water Act.

We are enclosing a copy of the *Approved Jurisdictional Determination Form* for your site (enclosure 2).

This approved jurisdictional determination is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 Code of Federal Regulations (CFR) Part 331.

A *Notification of Appeal Process (NAP) and Request for Appeal (RFA) Form* is enclosed (enclosure 3). If you request to appeal this determination, you must submit a completed RFA form to the South Pacific Division Office at the following address:

Administrative Appeal Review Officer, Army Corps of Engineers, South Pacific Division, CESPD-PDO, 1455 Market Street, 2052B, San Francisco, California 94103-1399, Telephone: 415-503-6574, FAX: 415-503-6646.

In order for an RFA to be accepted by the Corps, we must determine that the form is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that the form was received by the Division Office within 60 days of the date of the NAP. It is not necessary to submit an RFA form to the Division Office unless you object to the determination in this letter.

We recommend that you provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This approved jurisdictional determination has been conducted to identify the limits of aquatic resources subject to U.S. Army Corps of Engineers jurisdiction under Section 404 of the Clean Water Act for the particular site identified in this request.

We appreciate feedback, especially about interaction with our staff and our processes.

Please refer to identification number SPK-2017-00317 in any correspondence concerning this project. If you have any questions, please contact Jesse Stovall at the California South Section, at the letterhead address, by email at *Jesse.T.Stovall@usace.army.mil*, or telephone at (916) 557-9506. For program information or to complete our Customer Survey, visit our website at *www.spk.usace.army.mil/Missions/Regulatory.aspx*.

Sincerely,

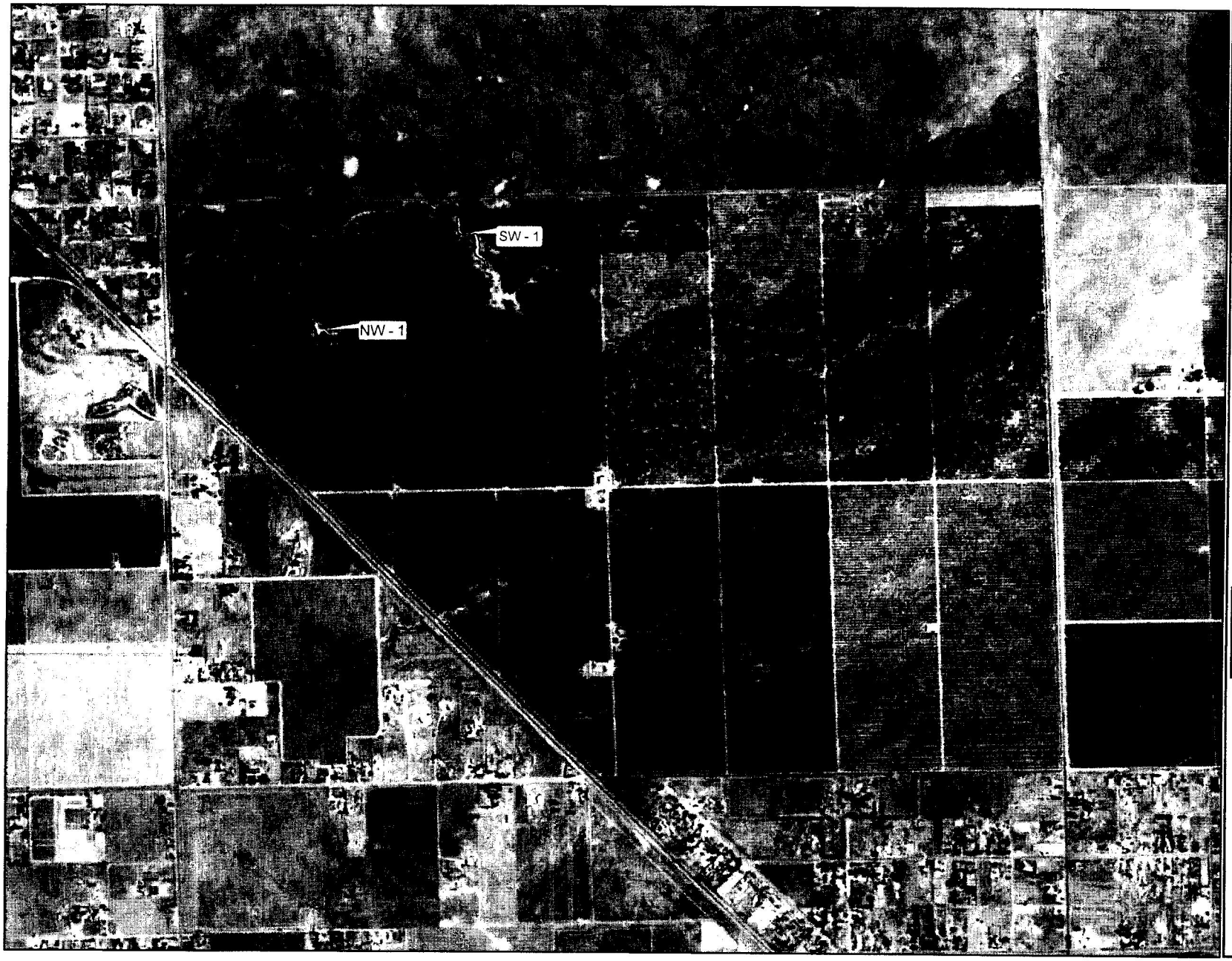
Michael Nepstad

Michael G. Nepstad
Deputy Chief, Regulatory Division

Enclosures

cc:

Dave Hartensveldt, Senior Botanist/Wetland Biologist, Live Oak and Associates, Inc.
DHartesveldt@loainc.com



Delineation of Wetlands and Other Waters of the United States for Herman Property
SPK-2017-00317
February 5, 2018

Delineation Performed on July 14, 2016
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By: Jesse Stovall, Senior Project Manager
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Sacramento District, Regulatory Division
1325 J Street, Room 1350
Sacramento, CA 95814-2922

800
Feet

1 inch = 800 feet

1:9,673

Legend

- NW-1 - Non-jurisdictional wetland (0.11 Ac.)
- SW-1 - Jurisdictional seasonal wetland (0.45 Ac.)
- Project boundary (Approx. 802 Acres)

N
W E
S

Datum: NAD_1983_UTM_Zone_10N
Projection: Transverse_Mercator

Delineation Map Prepared By:
Jesse Stovall
Project Manager, California South Section
US Army Corps of Engineers
Sacramento District, Regulatory Division
1325 J Street, Room 1350
Sacramento, California 95814-2922

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): February 7, 2018

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, Herman Property, SPK-2017-00317

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **California** County/parish/borough: **Madera County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **37.0043°**, Long. **-120.0405°**
Universal Transverse Mercator: **10 763343.84 4099440.17**
Name of nearest waterbody: Unnamed tributary to Dry Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Fresno River**
Name of watershed or Hydrologic Unit Code (HUC): **Fresno River, 18040007**
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form:

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): September 18, 2017

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☒ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: None
      Wetlands: 0.45 acre.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
      Elevation of established OHWM (if known):

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: Isolated wetland on the south end of the property lacks evidence of hydrologic connection to waters of the US.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

---

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW:

   Summarize rationale supporting determination:

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) General Area Conditions:
   Watershed size: **Pick List**
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☐ Tributary flows through 3 tributaries before entering TNW.

   Project waters are **30 (or more)** river miles from TNW.
   Project waters are **5-10** river miles from RPW.
   Project waters are **30 (or more)** aerial (straight) miles from TNW.
   Project waters are **2-5** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain:

   Identify flow route to TNW[5]: No jurisdictional tributaries lie within the project area. The description provided here is to establish hydrologic connectivity from the project site to the TNW. The tributaries on site lack wetland features or an OHWM, therefor are not considered jurisdictional. Subsequently a detailed description of the on-site tributaries is not provided here. Flow route to TNW: Unnamed non-jurisdictional tributary, Schmidt Creek, Dry Creek, Fresno River, San Joaquin River (TNW)
   Tributary stream order, if known:

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☐ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width:
Average depth:
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope):

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime:
Other information on duration and volume:

Surface flow is: **Pick List.** Characteristics:

Subsurface flow: **Unknown**. Explain findings:
☐ Dye (or other) test performed:

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):
☐ clear, natural line impressed on the bank ☐ the presence of litter and debris
☐ changes in the character of soil ☐ destruction of terrestrial vegetation
☐ shelving ☐ the presence of wrack line
☐ vegetation matted down, bent, or absent ☐ sediment sorting
☐ leaf litter disturbed or washed away ☐ scour
☐ sediment deposition ☐ multiple observed or predicted flow events
☐ water staining ☐ abrupt change in plant community
☐ other (list):
☐ Discontinuous OHWM.[7] Explain: Occasional break in OHWM into open swales.

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by:
☐ oil or scum line along shore objects
☐ fine shell or debris deposits (foreshore)
☐ physical markings/characteristics
☐ tidal gauges
☐ other (list):
☐ Mean High Water Mark indicated by:
☐ survey to available datum;
☐ physical markings;
☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain:
Identify specific pollutants, if known:

(iv) Biological Characteristics. Channel supports (check all that apply):

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

☐ Riparian corridor. Characteristics (type, average width):
☐ Wetland fringe. Characteristics:
☐ Habitat for:
  ☐ Federally Listed species. Explain findings:
  ☐ Fish/spawn areas. Explain findings:
  ☐ Other environmentally-sensitive species. Explain findings:
  ☐ Aquatic/wildlife diversity. Explain findings:

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size: **0.45** acre
Wetland type. Explain: Seasonal wetland swale
Wetland quality. Explain: low, actively managed for herbaceous cover
Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:
Flow is: **Intermittent flow**. Explain: No flow was observed during the site visit but, evidence of sediment transport was observed. Ponding was observed in Google Earth imagery, March 18, 2015 and April 5, 2014.

Surface flow is: **Overland sheetflow**
Characteristics: Overland sheetflow is provided via a swale draining to the west of SW – 1. The broad swale downslope, is approximately 10 feet wide with a depth averaging less than 1 foot. The swale exhibits flow patterns, deposits of fine-grained sand in some areas of slack water, and a biotic crust in the form of dried algal mats in digressional areas where water pools. A defined bed and bank was not observed.

Subsurface flow: **Unknown**. Explain findings:
☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☒ Discrete wetland hydrologic connection. Explain: The SW – 1 wetland is joined to a RPW via the described non-jurisdictional swale which connects with Schmidt Creek, an ephemeral drainage, Schmidt Creek drains to Dry Creek a RPW. Dry Creek is a tributary of the Fresno River which is a tributary of the San Joaquin River a TNW.
☐ Ecological connection. Explain:
☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW
Project wetlands are **30 (or more)** river miles from TNW.
Project waters are **30 (or more)** aerial (straight) miles from TNW.
Flow is from: **Wetland to navigable waters.**
Estimate approximate location of wetland as within the **500-year or greater** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:
Identify specific pollutants, if known: Pesticides and herbicides, further explanation found in Significant Nexus Determination (section III.C.2)

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width):
☒ Vegetation type/percent cover. Explain: As identified by Live Oak and Associates, Inc. the dominat species in the wetland is barnyard grass *Echinochloa crus-galli* (FACW) 50% cover. Other species include *Polygonum aviculare* ssp. *Depressuml* (FAC) 10%, *Malva parviflora* (UPL) 2%, *Amaranthus albus* (FACU) 2%, *Echinochloa crus-galli* (FACW) 1%.
☐ Habitat for:
  ☐ Federally Listed species. Explain findings:
  ☐ Fish/spawn areas. Explain findings:
  ☐ Other environmentally-sensitive species. Explain findings:
  ☐ Aquatic/wildlife diversity. Explain findings:

3. **Characteristics of all wetlands adjacent to the tributary (if any)**
   All wetland(s) being considered in the cumulative analysis: **1**
   Approximately **0.45** acre in total are being considered in the cumulative analysis.

   For each wetland, specify the following:

	Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
SW – 1	N	0.45		

   Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: SW - 1 has clearly defined hydrologic connection with down slope non-RPW via a non-wetland swale. The swale lacks jurisdictional features but, provides hydrologic connection between the wetland and non-RPW. The wetland provides drainage for an actively managed orchard. As identified in the February 2017, *Investigation of Potential Waters of the United States Herman Property/Castellina Madera County, California,* the management of this orchard includes the application of pesticides and herbicides. The San Joaquin River (Mendota to Bear Creek) (TNW) is identified as an impaired water by the EPA in the 2012 Waterbody Report, as relates to pesticides. The application of pesticides on this property likely provides a contribution of pollutants to the San Joaquin River. The jurisdictional wetland likely provides some function to reduce the amount pollutants that flow directly into other Waters of the US.

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet, wide, Or acres.

☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   ☐ Tributary waters: linear feet wide.
   ☐ Other non-wetland waters: acres.
   Identify type(s) of waters:

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   ☐ Tributary waters: linear feet, wide.
   ☐ Other non-wetland waters: acres.
   Identify type(s) of waters:

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
   ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

   ☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
   ☒ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional wetlands in the review area: **0.45** acre.

7. **Impoundments of jurisdictional waters.[9]**
   As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
   ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
   ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
   ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.

[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain:
☐ Other factors. Explain:

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet, wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
☐ Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☒ Wetlands: Isolated wetland acres. 0.11 acre

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☒ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps:
☐ Corps navigable waters' study:
☒ U.S. Geological Survey Hydrologic Atlas:
☒ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; Kismet**
☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
☐ National wetlands inventory map(s). Cite name:
☐ State/Local wetland inventory map(s):
☐ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): Google Earth, August 7, 2017, March 31, 2017, and April 5, 2014
or ☒ Other (Name & Date): USACE Mapped photo log for site visit conducted September 18, 2017.
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☐ Applicable/supporting scientific literature:
☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD: The Corp does not concur with the entirety of the submitted delineation report. The Corp does not concur that SW-1 is a non-jurisdictional wetland based on the evidence provided in the

delineation report. The Corp also does not concur that SW-1 is the only wetland within the project area. The non-jurisdictional wetland (NW – 1) identified in the project area was delineated by the Corp during the September 18, 2017 site visit. NW – 1 has been determined to be a non-jurisdictional wetland based on the lack of evidence of any identifiable hydrologic connection between that wetland and other Waters of the US (WOUS). The wetland identified as SW – 1 has been determined to be jurisdictional based on a hydrologic connection with downstream WOUS. The hydrologic connection is provided via a non-jurisdictional swale flowing east to west and directly abuts SW – 1. This swale is visible in aerial imagery and on the ground during the September 2017 site visit. A significant nexus determination was made based upon the ability to convey pesticides to an already impaired water, The San Joaquin River. Confirmation of the use of pesticides as it relates to farming practices is referenced in the February 2017 delineation report, *Investigation of Potential Waters of the United States Herman Property, Castellina Madera County, California pg.2 and 24.*

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Ms. Katharine Hardt-Mason, 794-acre Herman Property site, Madera County CA	File No.: SPK-2017-00317	Date: March 6, 2018
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
→	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at *http://www.usace.army.mil/cecw/pages/reg_materials.aspx* or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Jesse T. Stovall, Project Manager
U.S. Army Corps of Engineers
Regulatory Division
California South Section
1325 J Street, Room 1350
Sacramento, California 95814-2922
Phone: 916-557-7506, FAX 916-557-7803
Email: Jesse.T.Stovall@usace.army.mil

If you only have questions regarding the appeal process you may also contact:

Thomas J. Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division
1455 Market Street, 2052B
San Francisco, California 94103-1399
Phone: 415-503-6574, FAX 415-503-6646)
Email: Thomas.J.Cavanaugh@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
Signature of appellant or agent.		