Appendix E
Biological Resources

ESA

Appendix E.1

Investigation of Potential Waters of the United States

ESA

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

INVESTIGATION OF POTENTIAL WATERS OF THE UNITED STATES SARGENT QUARRY SANTA CLARA COUNTY, CALIFORNIA

Prepared by

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December 6, 2016 PN 662-10

EXECUTIVE SUMMARY

Live Oak Associates, Inc. conducted a formal wetland delineation on the approximately 300-acre Sargent Quarry project site on October 4th and 11th, 2016, at which time vegetation, hydrology, and soil data were gathered at four sample locations. The site is located south of the City of Gilroy in southern Santa Clara County, California. The site supports primarily rangelands which are currently grazed, however, Tar Creek, Sargent Creek and their associated tributaries and riparian habitats (all tributaries of the Pajaro River) are also present on the site.

During the October 2016 surveys, features delineated included both perennial and intermittent stream channels meeting the definition of jurisdictional tributary waters under the recently issued Clean Water Rule. Additionally, one isolated intermittent channel, and an associated isolated wetland, and three erosional gully features were delineated. The isolated channel and its associated wetland may potentially be disclaimed by USACE under the *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC) decision due to a lack of hydrological connectivity to other waters of the U.S. The three erosional features may also be disclaimed as they did not appear to meet any of the definitions of a jurisdictional water due to the lack of evidence of an ordinary high water mark and because they did not meet the criteria for jurisdictional wetlands. However, it should be understood that ultimately only the USACE can determine if a given channel, gully, or other aquatic resource would be considered a water of the U.S. The remainder of the site failed to meet any of the regulatory definitions of waters of the United States. Upland habitats consist of California annual grassland, riparian woodland, and oak woodland.

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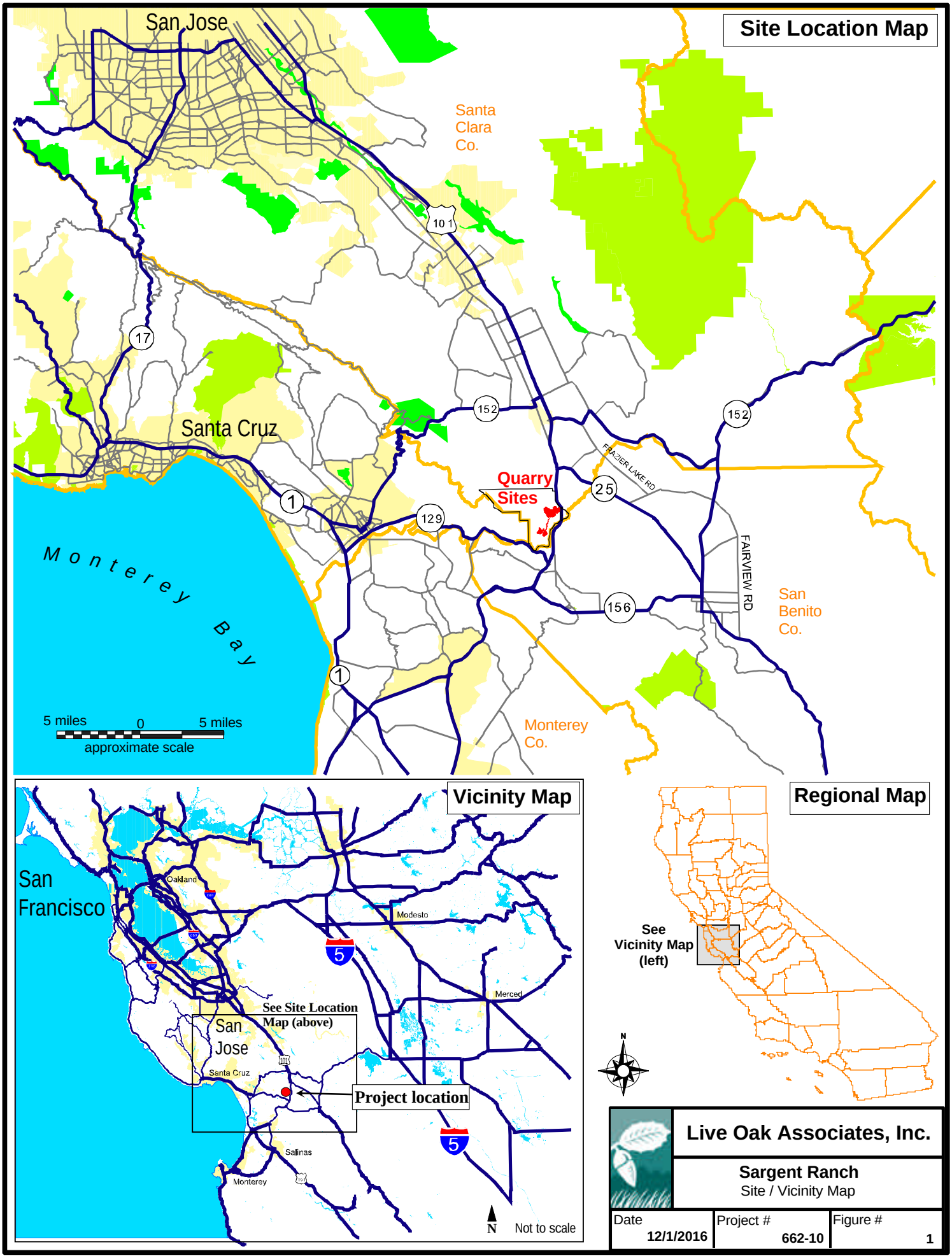
1.0 INTRODUCTION

Live Oak Associates, Inc. (LOA) surveyed the approximately 300-acre Sargent Quarry project site located south of the City of Gilroy in unincorporated Santa Clara County, California (Figure 1) for potential waters of the United States, including areas meeting the technical criteria of wetlands. Although the ranch itself encompasses over 6,400 acres, the focus of this effort was the approximately 300 acres comprising the proposed Sargent Ranch Quarry project. The proposed quarry site is comprised of the processing plant, overburden stockpiles, and the mining phase areas (Phases 1 through 4). The predominant habitat occurring within the footprints of the proposed quarry areas, hereafter referred to collectively as the "project site" or "study area", is California annual grassland; however riparian woodland, coast live oak woodland, several drainages (Tar Creek, Sargent Creek and their intermittent tributaries), dry-farmed hay fields and a seasonal wetland also occur within the proposed quarry footprints. Sargent Ranch occurs adjacent to and west of Highway 101 approximately one mile south of the Highway 25 interchange. The ranch is bound to the east by Highway 101; to the south by the Pajaro River; and to the west and north by privately-owned rangeland. The Sargent Ranch site can be found on the Chittenden USGS 7.5 minute topographic quadrangle, at the intersection of Townships 11 and 12 North, and Ranges 3 and 4 East (Figure 2) on gently to steeply rolling foothills on the east side and at the southernmost extreme of the Santa Cruz Range. Elevations of the proposed quarry site range from a low of approximately 200 feet NGVD (National Geodetic Vertical Datum) in the northern portion of the site, to a high of approximately 600 feet NGVD in the southern portion of the site. The project site is currently used primarily for cattle grazing although dry-farmed oat hay fields occur on the northeastern portion of the proposed quarry site.

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 under the authority of sections 9 and 10 of the Rivers and Harbors Act.


Site Location Map
San Jose
Santa Clara Co.
101
17
Santa Cruz
152
152
Quarry Sites
25
FRAZIER LAKE RD
1
129
FAIRVIEW RD
156
San Benito Co.
Monterey Bay
1
Monterey Co.
5 miles
0
5 miles
approximate scale
Vicinity Map
San Francisco
Oakland
Modesto
5
Merced
See Site Location Map (above)
San Jose
Santa Cruz
Project location
5
Salinas
Monterey
N
Not to scale
Regional Map
See Vicinity Map (left)
N
Live Oak Associates, Inc.
Sargent Ranch
Site / Vicinity Map
Date
12/1/2016
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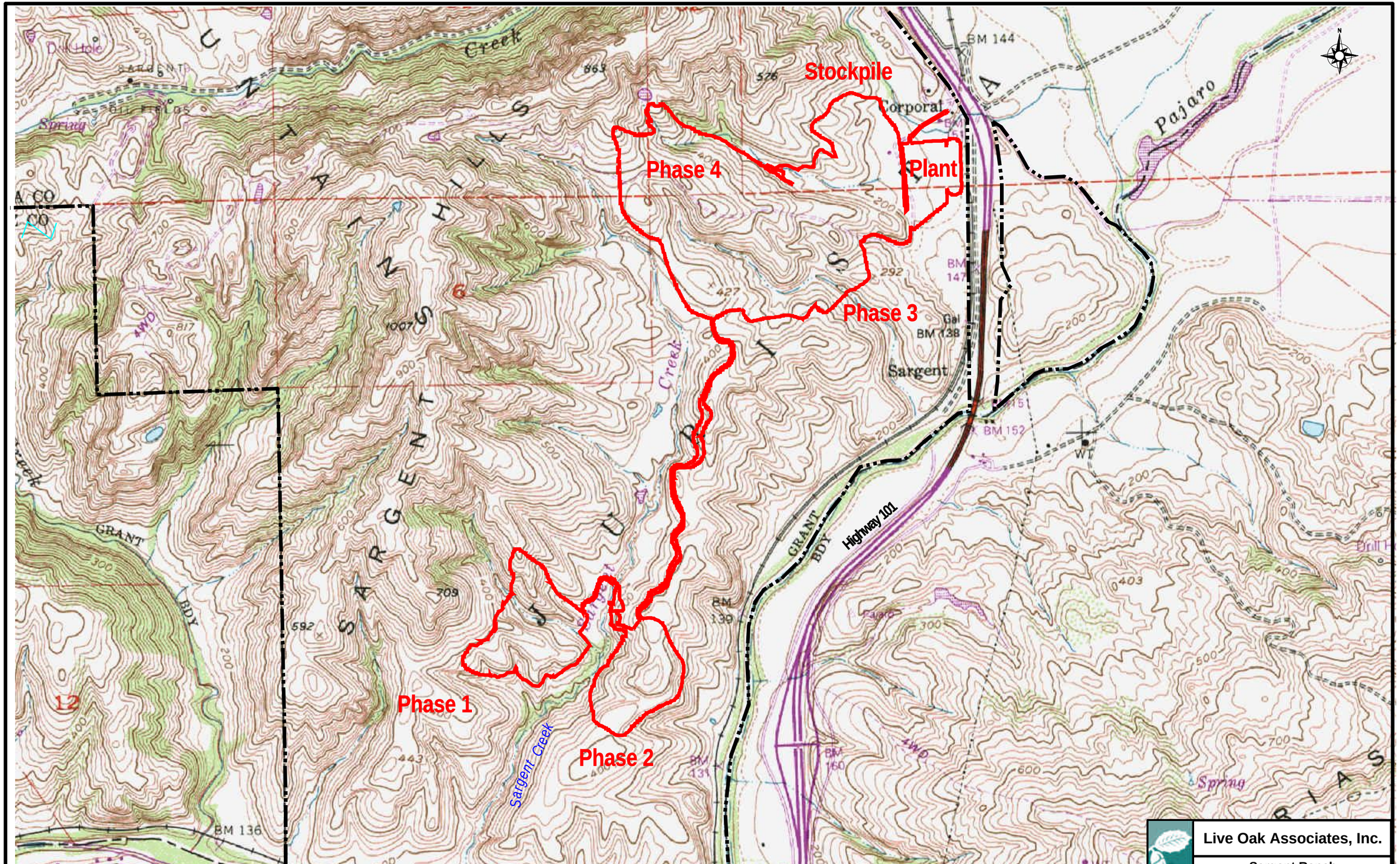
1



Sources:
U.S.G.S. Chittenden 7-1/2' Quadrangle

Project Boundary

1/2 mile 0 1/2 mile
Approximate Scale

Live Oak Associates, Inc.

Sargent Ranch
U.S.G.S. Quadrangle

Date	Project #	Figure #
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The reach and extent of Clean Water Act jurisdiction over aquatic features has been the subject of several U.S. Supreme Court decisions, in *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).

In Riverside (1985) the Supreme Court unanimously ruled that adjacent wetlands are "inseparably bound up" with the waters that they are adjacent to. Therefore, wetlands, including intrastate wetlands, adjacent to waters of the United States were, themselves, waters of the United States.

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.

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. 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 2007).

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. In order for jurisdictional determinations to be made in a more timely, consistent, and predictable manner, the EPA and the USACE recently published a final rule, known as the Clean Water Rule, redefining the scope of waters that are protected under the CWA. Effective August 28, 2015, 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. The territorial seas;
4. All impoundments of waters otherwise identified as waters of the United States under this section;
5. All tributaries, as defined in paragraph (c)(3) of this section, of waters identified in paragraphs (a)(1) through (3) of this section;
6. All waters adjacent to a water identified in paragraphs (a)(1) through (5) of this section, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters;
7. All waters in paragraphs (a)(7)(i) through (v) of this section where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section. The waters identified in each of paragraphs (a)(7)(i) through (v) of this section are similarly situated and shall be combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in paragraphs (a)(1) through (3) of this section. Waters identified in this paragraph shall not be combined with waters identified in paragraph (a)(6) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (a)(6), they are an adjacent water and no case-specific significant nexus analysis is required.
    a. *Prairie potholes.* Prairie potholes are a complex of glacially formed wetlands, usually occurring in depressions that lack permanent natural outlets, located in the upper Midwest.
    b. *Carolina bays and Delmarva bays.* Carolina bays and Delmarva bays are ponded, depressional wetlands that occur along the Atlantic coastal plain.
    c. *Pocosins.* Pocosins are evergreen shrub and tree dominated wetlands found predominantly along the Central Atlantic coastal plain.
    d. *Western vernal pools.* Western vernal pools are seasonal wetlands located in parts of California and associated with topographic depression, soils with poor drainage, mild, wet winters and hot, dry summers.

e. *Texas coastal prairie wetlands.* Texas coastal prairie wetlands are freshwater wetlands that occur as a mosaic of depressions, ridges, intermound flats, and mima mound wetlands located along the Texas Gulf Coast.

8. All waters located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (3) of this section and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (a)(1) through (5) of this section where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section. For waters determined to have a significant nexus, the entire water is a water of the United States if a portion is located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (3) of this section or within 4,000 feet of the high tide line or ordinary high water mark. Waters identified in this paragraph shall not be combined with waters identified in paragraph (a)(6) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (a)(6), they are an adjacent water and no case-specific significant nexus analysis is required.

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.

In those cases where the USACE disclaims jurisdiction over aquatic features, two state agencies, the California Department of Fish and Wildlife and the California Regional Water Quality Control Board, may still regulate the placement of fill in such waters under California law.

2.0 METHODS

LOA plant and wetland ecologist Pamela Peterson and LOA staff ecologist Sarah Piramoon surveyed the site for potential jurisdictional waters on October 4 and 11, 2016. This survey was conducted on foot to maximize visual coverage of the entire area. 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 Preliminary Wetland Delineations* (USACE 2001). Color photographs were taken in various areas of the site (Appendix A).

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" (Environmental Laboratory 1987). 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.

Four sample locations were selected within the study area. Each sample location was assessed for the diagnostic environmental characteristics of wetlands (i.e., a prevalence, i.e. greater than 50% relative cover) of hydrophytic vegetation, presence of hydric soils, and indicators of wetland hydrology characterized by an aquic or peraquic moisture regime). Vegetation, soils, and hydrology data were collected at these sample locations to document site conditions and the data collected was entered on standard data sheets patterned after those used by USACE (Appendix B). The dominant plant species observed at each sample location along with their wetland indicator status were recorded. Plants observed at the sample locations were identified

using the *The Jepson Manual: Vascular Plants of California Second Edition* (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 Arid West Wetland Plant List (USACE 2016). A list of vascular plant species observed on the greater Sargent Ranch property during various surveys conducted on the site from 2004 to the present is provided in Appendix C. Note that not all plant species occurring in Appendix C are present on the proposed quarry site.

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. This occurs 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.

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. 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 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."

Potentially jurisdictional tributary waters were present on the site in the form of Tar Creek (a perennial blue line creek), Sargent Creek (an intermittent blue line creek) and their unnamed

intermittent tributaries. These features were visually inspected for physical characteristics of the OHW mark to determine the extent of potential jurisdiction and were evaluated for hydrologic connectivity to other waters of the U.S.

2.3 OTHER WATERS

For the purposes of this report, other waters shall refer to waters that are not waters of the U.S. as defined in 33 CFR §328.3(a). Other waters on the site included isolated wetlands and isolated channels, and erosional gully features not exhibiting an Ordinary High Water mark on opposing banks and not meeting the technical criteria of wetlands.

3.0 RESULTS

3.1 EXISTING CONDITIONS

The approximately 317-acre Sargent Ranch Quarry study area is located on the greater, approximately 6400-acre Sargent Ranch property, south of the City of Gilroy in Santa Clara County, California within foothills on the east side of the Santa Cruz Mountains. The proposed quarry site is comprised of quarry plant facilities, Phase 1 through Phase 4 mining areas, associated access roads, and a conveyer belt alignment that will move excavated materials from Phases 1 and 2 to the quarry plant site. Open rangeland borders the proposed project areas.

Elevations of the quarry project site range from a high of approximately 600 feet National Geodetic Vertical Datum (NGVD) to a low of approximately 200 feet NGVD (Figure 2). Habitats of the project site are comprised primarily of California annual grassland; however, riparian woodland, coast live oak woodland and dry-farmed hay fields also occur on the site. The primary use of the habitats of the quarry project site is cattle grazing.

Soils

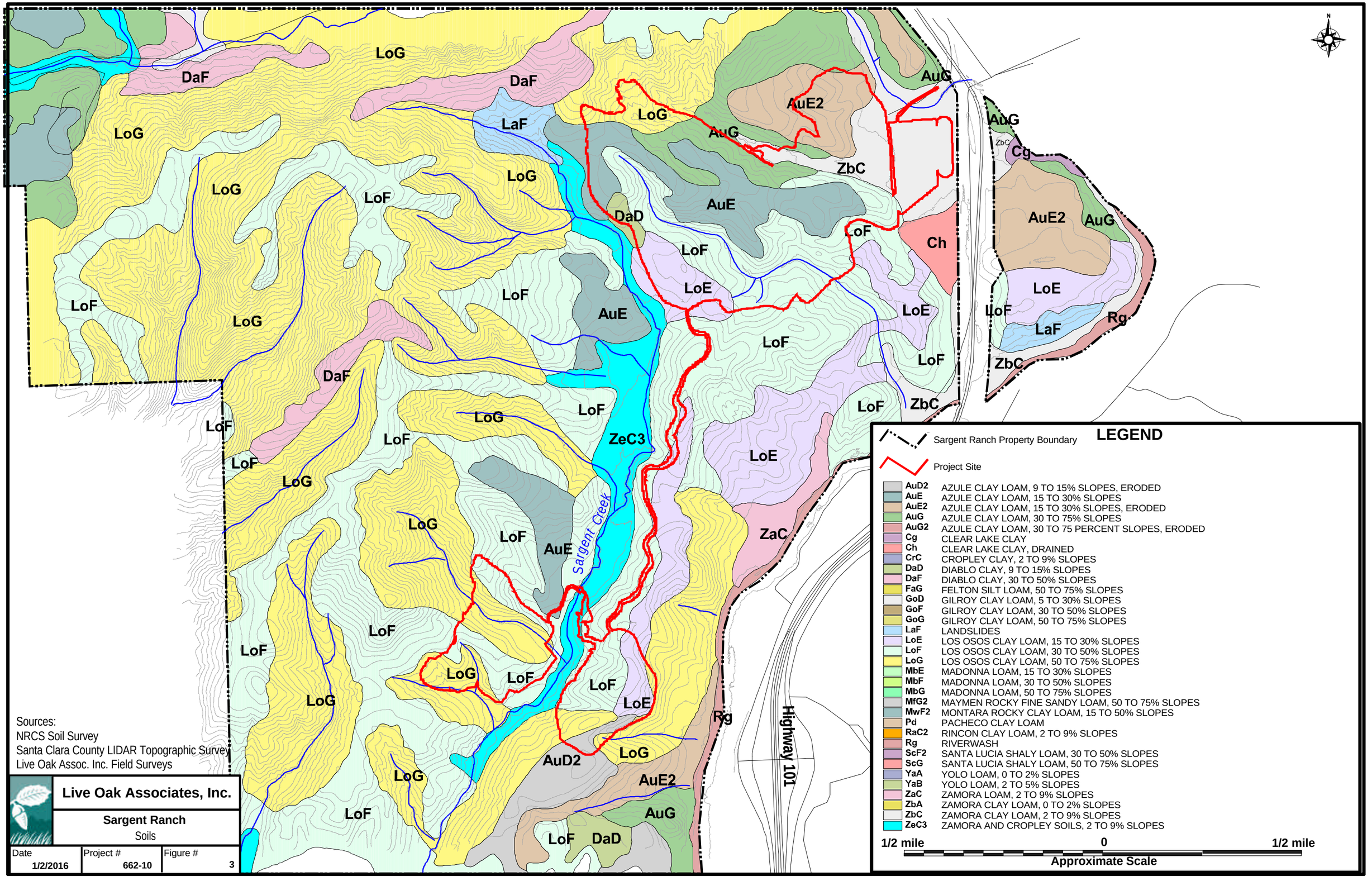
Nine soil-mapping units have been identified on the site and these soils are described in greater detail in Table 1 and depicted in Figure 3 (NRCS 2016). None of the soils of the site are considered hydric soils, i.e. soils that under appropriate hydrological conditions may support wetlands, however, hydric inclusions may occur. All of the soil types of the quarry site are considered well-drained (Figure 3; Table 1; NRCS 2016).

Table 1. Descriptions of soil mapping units of the study area (USDA NRCS Web Soil Survey 2016).

Soil Series/Soil	Map Unit Symbol	Parent Material	Drainage Class	% Hydric Composition
ZAMORA SERIES Zamora clay loam, 2-9% slopes	ZbC	Alluvium	Well-drained	0
AZULE SERIES Azule clay loam, 15-30% slopes, eroded	AuE2	Alluvium	Well-drained	0
Azule clay loam, 15-30% slopes	AuE	Alluvium	Well-drained	0
Azule clay loam, 9-15% slopes, eroded	AuD2	Alluvium	Well-drained	0
Azule clay loam, 30-75% slopes	AuG	Alluvium	Well-drained	0
LOS OSOS SERIES Los Osos clay loam, 15-30% slopes	LoE	Residuum weathered from sandstone and shale	Well-drained	0
Los Osos clay loam, 30-50% slopes	LoF	Residuum weathered from sandstone and shale	Well-drained	0
Los Osos clay loam, 50-75% slopes	LoG	Residuum weathered from sandstone and shale	Well-drained	0
DIABLO SERIES Diablo clay, 9-15% slopes	DaD	Residuum weathered from sandstone	Well-drained	0

Climate

Annual precipitation in the general vicinity of the study area is 13-18 inches, most of which falls between the months of October and April. Virtually all precipitation falls in the form of rain. Storm water runoff readily infiltrates the soils of the site, but when field capacity has been reached, gravitational water drains into ephemeral drainages on the site and is eventually carried into the Pajaro River, which drains to Monterey Bay to the west of the site.


LoG
DaF
LaF
AuE2
AuG
ZbC
Cg
AuE
DaD
LoF
Ch
LoE
Rg
ZeC3
AuD2
ZaC
Sargent Creek
Highway 101
Sources:
NRCS Soil Survey
Santa Clara County LIDAR Topographic Survey
Live Oak Assoc. Inc. Field Surveys
Live Oak Associates, Inc.
Sargent Ranch
Soils
Date
1/2/2016
Project #
662-10
Figure #
3
LEGEND
Sargent Ranch Property Boundary
Project Site
AuD2 AZULE CLAY LOAM, 9 TO 15% SLOPES, ERODED
AuE AZULE CLAY LOAM, 15 TO 30% SLOPES
AuE2 AZULE CLAY LOAM, 15 TO 30% SLOPES, ERODED
AuG AZULE CLAY LOAM, 30 TO 75% SLOPES
AuG2 AZULE CLAY LOAM, 30 TO 75 PERCENT SLOPES, ERODED
Cg CLEAR LAKE CLAY
Ch CLEAR LAKE CLAY, DRAINED
CrC CROPLEY CLAY, 2 TO 9% SLOPES
DaD DIABLO CLAY, 9 TO 15% SLOPES
DaF DIABLO CLAY, 30 TO 50% SLOPES
FaG FELTON SILT LOAM, 50 TO 75% SLOPES
GoD GILROY CLAY LOAM, 5 TO 30% SLOPES
GoF GILROY CLAY LOAM, 30 TO 50% SLOPES
GoG GILROY CLAY LOAM, 50 TO 75% SLOPES
LaF LANDSLIDES
LoE LOS OSOS CLAY LOAM, 15 TO 30% SLOPES
LoF LOS OSOS CLAY LOAM, 30 TO 50% SLOPES
LoG LOS OSOS CLAY LOAM, 50 TO 75% SLOPES
MbE MADONNA LOAM, 15 TO 30% SLOPES
MbF MADONNA LOAM, 30 TO 50% SLOPES
MbG MADONNA LOAM, 50 TO 75% SLOPES
MfG2 MAYMEN ROCKY FINE SANDY LOAM, 50 TO 75% SLOPES
MwF2 MONTARA ROCKY CLAY LOAM, 15 TO 50% SLOPES
Pd PACHECO CLAY LOAM
RaC2 RINCON CLAY LOAM, 2 TO 9% SLOPES
Rg RIVERWASH
ScF2 SANTA LUCIA SHALY LOAM, 30 TO 50% SLOPES
ScG SANTA LUCIA SHALY LOAM, 50 TO 75% SLOPES
YaA YOLO LOAM, 0 TO 2% SLOPES
YaB YOLO LOAM, 2 TO 5% SLOPES
ZaC ZAMORA LOAM, 2 TO 9% SLOPES
ZbA ZAMORA CLAY LOAM, 0 TO 2% SLOPES
ZbC ZAMORA CLAY LOAM, 2 TO 9% SLOPES
ZeC3 ZAMORA AND CROPLEY SOILS, 2 TO 9% SLOPES
1/2 mile 0 1/2 mile
Approximate Scale

3.2 POTENTIAL WATERS OF THE UNITED STATES

Hydrologic features identified on the site consist of areas meeting the technical criteria of jurisdiction wetlands, the riparian corridors of Tar Creek (a perennial blue-line creek), Sargent Creek (an intermittent blue-line creek), and their unnamed intermittent tributaries (Figure 4). These features are discussed further below.

LEGEND

Ordinary High Water of Jurisdictional Tributaries

- Intermittent Channels 1 & 2 (3,767 SF, 965 LF)
- Perennial Channel 1 (452 SF, 25 LF)

Ordinary High Water of Isolated Channels

- Isolated Intermittent Channel 3 (84,918 SF, 25,102 LF)

Other Waters (Not Jurisdictional)

- Isolated Seasonal Wetland (1,145 SF / 0.03 Ac.)
- Erosional Gully (1,281 SF, 1,250 LF)

Other Features

- Project Boundary (Approx. 298 Ac.)
- SP1 - Sample Points
- Culvert

Tar Creek

Tar Creek
Perennial Channel 1
452 SF, 25 LF

629,240 E
4,087,999 N

SP1

Isolated
Intermittent Channel 3a
81,795 SF, 2,499 LF

Isolated
Intermittent Channel 3b
3,123 SF, 1,102 LF

Isolated
Seasonal Wetland 1
1,145 SF, 0.03 Ac.

Erosional Gully 2
371 LF

Culvert

628,229 E
4,087,099 N

Erosional Gully 1
305 LF

Sargent Creek

Sargent Creek
Intermittent Channel 1
986 SF, 66 LF

Intermittent Channel 2a
54 SF, 33 LF

Intermittent Channel 2b
1,927 SF, 627 LF

SP4

SP2

SP3

Culvert

Intermittent Channel 2c
800 SF, 239 LF

Erosional Gully 3
574 LF

627,712 E
4,085,367 N

Betabel Road

Y Road

Highway 101

500' 0 500 feet

Approximate Scale
1' = 200'

Source:
Topographic Base courtesy Santa Clara Co. LIDAR Survey
Universal Transverse Mercator Coordinate System Zone 10, NAD83 / NAVD 1988

Live Oak Associates, Inc.

Sargent Ranch
Potential Waters of the U.S.

Date	Project #	Figure #
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Tributary Waters

Relatively permanent tributary of a traditional navigable water. No traditional navigable waters are present on the site, however, relatively permanent waterbodies (i.e., tributaries that typically flow year-round or have continuous flow at least seasonally per *Rapanos* guidance) in the form of Tar Creek and Sargent Creek and one unnamed tributary are present on the site (Table 2; Figure 4).

Table 2. Potentially Jurisdictional Tributary Waters of the United States on the Sargent Quarry Site.

Feature	Length (linear ft.) (OHW)	Area (sq. ft.) (OHW)	Area (acre) (OHW)
Intermittent Channel 1 (Sargent Creek)	66	986	0.022
Intermittent Channel 2	899	2,781	0.064
Perennial Channel 1 (Tar Creek)	25	452	0.010
Total	990	4,219	0.096

A small reach of Tar Creek (Perennial Channel 1), a perennial USGS blue line creek, occurs in the northeastern portion of the project site where an access road and bridge are proposed (Sample Point 1). The channel is primarily barren of vegetation and this area did not meet the technical criteria for wetlands. Sample Point 1 was established on the eastern bank of the creek just outside of the OHW channel. The dominant species observed in this location included arroyo willow (*Salix lasiolepis*)(FACW) and poison oak (*Toxicodendron diversilobum*) (FACU). A 12-inch deep pit was excavated for examination of soils. Soils exhibited a moist Munsell soil color of 7.5 YR 2.5/2 with no evidence of oxidation features. No primary or secondary indicators of wetland hydrology were present.

Sargent Creek (Intermittent Channel 1), an intermittent USGS blue line creek, occurs in the southern portion of the site in the location of grading for a proposed conveyor belt crossing. Sample point 4 was established in the bed of the creek in this location. The Ordinary High Water channel of the creek met the criteria for jurisdictional wetlands. The single dominant plant species in this location was swamp pricklegrass (*Crypsis schoenoides*) (FACW). Soils exhibited a moist Munsell soil color of 7.5 YR 2.5/1 with a few fine oxidized rhizospheres present and therefore the area met the hydric soils criterion. The wetland hydrology criterion was also met due to the presence of these oxidized rhizospheres.

In addition to Sargent and Tar Creeks, two other unnamed intermittent channels (Intermittent Channels 2 and 3) occur within the project site. Intermittent Channel 2 occurs in the southern portion of the site within the Phase 1 quarry area and is a tributary of Sargent Creek. The vast majority of the portion of the channel on the project site supports no riparian canopy, and where not completely barren of vegetation supports only primarily herbaceous vegetation consisting of non-native grasses and forbs. The lower portion of the channel on the site supports a mature canopy of riparian woodland trees. The channel was completely dry during the survey. This channel flows off-site to the southeast where it eventually drains into Sargent Creek.

Intermittent Channel 3 occurs on the northern portion of the project site, traversing Phase 3 and Phase 4. This channel flows off-site to the southeast where its waters appear to percolate into the soils within an upland swale and it does not appear to be hydrologically connected to other waters of the U.S.

Areas Meeting the Technical Criteria of Wetlands

As indicated above, the Ordinary High Water channel of Sargent Creek met all three criteria of a jurisdictional wetland (SP 4). Additionally, a small in-stream wetland area, discussed below in Section 3.4, occurs in proximity to the convergence of isolated Intermittent Channel 3 with an erosional gully feature (Erosional Gully 2) met wetland criteria; however, this wetland is likely to be considered isolated and non-jurisdictional by USACE due to a lack of hydrological connectivity with other waters of the U.S. Aside from these features however, no other areas of the project site met the criteria for jurisdictional wetlands.

A swale area was sampled in the southern portion of the proposed quarry site which occurs within the conveyor belt alignment grading footprint to determine if it met the criteria for wetlands (Sample Points 2 and 3). Sample Point 2 met only one of the three criteria for jurisdictional wetlands with greater than 50% cover by a single dominant species, Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*) (FAC). However, soils exhibited a moist Munsell soil color of 10 YR 2/2 with less than one percent redox concentrations present, and therefore, it did not meet the hydric soils criterion. The area also did not meet the hydrology criterion with only one secondary indicator present.

Sample Point 3 was established to the south of Sample Point 2 and slightly higher up. This area met none of the criteria for wetlands with only 50% relative cover by a wetland indicator plant species, i.e. perennial wild-rye (*Festuca perennis*) (FAC). Similar to Sample Point 2, soils exhibited a moist Munsell soil color of 10 YR 2/2 with only a few faint redox concentrations and no primary or secondary indicators of hydrology were observed.

3.3 OTHER WATERS (NOT WATERS OF THE UNITED STATES)

Isolated Intermittent Channel and In-stream Wetland. Intermittent Channel 3 occurs on Phase 3 and 4 in the northern portion of the project site. This feature does not appear to be hydrologically connected to any other waters of the U.S. as flows from this feature appear to spread out and percolate within soils in an upland swale located off the project site to the southeast. Therefore, it appears that this feature and an associated seasonal wetland (Seasonal Wetland 1) would be considered non-jurisdictional under the SWANCC ruling.

Table 3. Isolated Aquatic Features on the Sargent Quarry Site.

Feature	Length (linear ft.) (OHW)	Area (sq. ft.) (OHW)	Area (acre) (OHW)
Intermittent Channel 3	3,601	84,918	1.95
Seasonal Wetland 1	N/a	1,145	0.03
Total		86,063	1.98

Ephemeral/Erosional Gully. Three erosional features are present on the project site. One of these features occurs in the southwestern portion of Phase 1 (Erosional Gully 3), and the other two are associated with Isolated Intermittent Channel 3 in Phase 3 of the project site (Erosional Gully 1 and 2). These features did not appear to meet any of the definitions of a waters of the U.S. as none of these features exhibited an Ordinary High Water mark on opposing banks and for the most part they were either completely barren of vegetation or supported upland herbaceous vegetation undifferentiated from surrounding upland grasslands.

Table 4. Non-jurisdictional Ephemeral Erosional Features on the Sargent Quarry Site Exhibiting No OHW Mark.

Feature	Length (linear ft.)
Erosional Gully 1	305
Erosional Gully 2	371
Erosional Gully 3	574
Total	1,250

3.4 UPLAND AREAS

The remainder of the site failed to meet any of the regulatory definitions of waters of the United States (Sample Points 2 and 3, previously described above), and this included primarily annual grassland and riparian woodland habitats.

Sample Point 1 was established just above the Ordinary High Water mark of Tar Creek on the eastern bank immediately south of an existing at-grade crossing and the proposed access road crossing for the quarry project. This area failed to meet any of the three criteria for wetlands as there was not a prevalence of wetland vegetation, soils exhibited a moist Munsell soil color 7.5 YR 2.5/2 with no mottles or other redox features present, and no hydrology indicators were present.

4.0 DISCUSSION

Based on the recently issued Clean Water Rule, it is our opinion that Tar Creek (Perennial Channel 1), Sargent Creek (Intermittent Channel 1) and its unnamed tributary Intermittent Channel 2 meet the regulatory definition of tributary waters of the United States, as they are all tributaries of the Pajaro River, a traditional navigable water that flows to Monterey Bay, and they exhibit an Ordinary High Water mark on opposing banks.

Intermittent Channel 3 appears to be isolated and not hydrologically connected to other Waters of the U.S. as flows from this feature appear to percolate into the soils within an upland swale off the project site to the southeast. As such, this latter feature may be considered non-jurisdictional by USACE under the SWANCC ruling. Within Intermittent Channel 3 there is a seasonal wetland area meeting the technical criteria of wetlands. If Intermittent Channel 3 is determined to be isolated and non-jurisdictional by USACE then this wetland would also be considered isolated and non-jurisdictional.

Aside from the Ordinary High Water channel of Sargent Creek and the small seasonal wetland associated with Intermittent Channel 3 described above, we found that no other areas of the site met the technical criteria of jurisdictional wetlands. Upland areas of the site consist primarily of California annual grassland and mixed riparian woodlands.

Three ephemeral/erosional gullies are present on the site. These areas were erosional features which were either barren or supported less than 5% total vegetation cover with upland herbaceous vegetation undifferentiated from surrounding upland annual grasslands and did not exhibit an OHW mark on opposing banks. One of these occurs in the southern portion of Phase 1 and is connected to Sargent Creek. The other two are tributary to Intermittent Channel 3, which appears to be isolated, and are present on the southern portion of Phase 3. It is our opinion that these erosional features only carry water briefly during the largest storm events and should not be considered jurisdictional tributary waters (33 CFR §328.3(c)(3)). According to 33 CFR §328.3(b), “erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of [a] tributary” are not waters of the U.S.

Although we have provided our opinion as to the jurisdictional status of hydrologic features on the site, it should be understood that the USACE has the sole authority to determine the jurisdictional status of waters on any given project site and, as such, may claim jurisdiction over any or all of the aquatic features identified in this report.

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APPENDIX A: PHOTOGRAPHS OF THE STUDY AREA

Photo 1. Tar Creek looking north from the existing at-grade crossing.

Photo 2. Sample Point 1 on the eastern bank of Tar Creek south of the at-grade crossing.

Photo 3. Tar Creek looking east across the channel at at-grade crossing.

Photo 4. Intermittent Drainage 2, tributary of Sargent Creek.

Photo 5. Sample Point 2 in upland swale above Intermittent Drainage 1 looking west.

Photo 6. Sample Point 3 in upland grassland southwest of Sample Point 2.

Photo 7. Intermittent Channel 2 looking east.

Photo 8. Intermittent Channel 2.

Photo 9. Intermittent Channel 2.

Photo 10. Intermittent Channel 2 off-site to the southeast just prior to confluence with Sargent Creek.

Photo 11. Ephemeral/Erosional Gully 3 with no ordinary high water mark.

Photo 12. Ephemeral/Erosional Gully 3 with no ordinary high water mark.

Photo 13. Sargent Creek (Intermittent Drainage 1) looking north toward Sample Point 4.

Photo 14. Headwater Isolated Intermittent Drainage 3 in northern portion of site looking west.

Photo 15. Isolated Intermittent Drainage 3 looking southeast from headwater.

Photo 16. Isolated Intermittent Drainage 3 in area where there is no OHW evident.

Photo 17. Isolated Seasonal Wetland 1 associated with Isolated Intermittent Drainage 3.

Photo 18. Intermittent Drainage 3 below road and culvert.

Photo 19. Off-site upland swale that Isolated Intermittent Channel 3 drains into looking northwest.

Photo 20. Ephemeral/Erosional Gully 2 upstream from Seasonal Wetland 1.

Photo 21. Ephemeral/Erosional Gully 1 looking north.

APPENDIX B: WETLAND DATASHEETS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sargent Ranch Quarry City/County: Santa Clara Sampling Date: 10/4/16

Applicant/Owner: Freeman Associates State: CA Sampling Point: 1

Investigator(s): P. Peterson, S. Piramoon Section, Township, Range: ST11 & T12 North, R3 & R4 East

Landform (hillslope, terrace, etc.): creek bank Local relief (concave, convex, none): concave Slope (%): 20

Subregion (LRR): C Lat: 36° 55' 42.53 Long: 121° 33' 00.28 Datum: NAD 83

Soil Map Unit Name: Zamora Clay Loam 2 to 9 percent 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 _____, Soil _____, 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 _____ Hydric Soil Present? Yes _____ No x Wetland Hydrology Present? Yes _____ No x	**Is the Sampled Area within a Wetland?** **Yes _____ No x**

Remarks: Sample Point taken on the eastern bank of Tar Creek just above OHW and south of an existing at grade crossing.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	75	Y	FACW
2.			
3.			
4.			
Total Cover: 75			
Sapling/Shrub Stratum			
1. Toxicodendron diversilobum	50	Y	FACU
2.			
3.			
4.			
5.			
Total Cover: 50			
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 95+ % Cover of Biotic Crust N/a

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 75	x 2 = 150
FAC species _____	x 3 = _____
FACU species 50	x 4 = 200
UPL species _____	x 5 = _____
Column Totals: 125 (A)	350 (B)

Prevalence Index = B/A = 2.8

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.

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

Remarks: Meets the prevalence index test for hydrophytic vegetation

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)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5 YR 2.5/2	100	N/a					

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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: Does not meet hydric soils criterion

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ 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 Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ 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: Does not meet hydrology criterion

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sargent Ranch Quarry City/County: Santa Clara Sampling Date: 10/4/16

Applicant/Owner: Freeman Associates State: CA Sampling Point: 2

Investigator(s): P. Peterson, S. Piramoon Section, Township, Range: ST11 & T12 North, R3 & R4 East

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): <10

Subregion (LRR): C Lat: 36° 54' 32.33 Long: 121° 33' 59.35 Datum: NAD 83

Soil Map Unit Name: Los Osos Clay Loam NWI classification: None

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes 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: Sample point taken in swale which only meets one of the three criterion for jurisdictional wetlands.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/a			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. N/a			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Hordeum marinum	60	Y	FAC
2. Xanthium spinosum	<1	N	FACU
3. Brassica nigra	<1	N	UPL
4. Rumex acetosella	<1	N	FACU
5. Festuca perennis	20	Y	FAC
6.			
7.			
8.			
Total Cover: 80			
Woody Vine Stratum			
1. N/a			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust N/a

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.

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

Remarks: Meets hydrophytic vegetation criterion

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
0-12	10 YR 2/2	99+	10 YR 5/6	<1	C	PL	Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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: Does not meet hydric soils criterion due to chroma of 2 without at least 5 percent redox concentrations.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ 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 Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ 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: Does not meet wetland hydrology criterion.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sargent Ranch Quarry City/County: Santa Clara Sampling Date: 10/4/16

Applicant/Owner: Freeman Associates State: CA Sampling Point: 3

Investigator(s): P. Peterson, S. Piramoon Section, Township, Range: ST11 & T12 North, R3 & R4 East

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 20

Subregion (LRR): C Lat: 36° 54' 32.33 Long: 121° 33' 59.95 Datum: NAD 83

Soil Map Unit Name: Los Osos Clay Loam 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 _____, Soil _____, 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: Sample point taken south of Sample Point 2 at base of hillslope near swale.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/a			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. N/a			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Avena sp.	60	Y	UPL
2. Festuca perennis	40	Y	FAC
3. Brassica nigra	5	N	UPL
4. Rumex acetosella	<1	N	FACU
5. Cirsium vulgare	<1	N	FACU
6.			
7.			
8.			
Total Cover: 100			
Woody Vine Stratum			
1. N/a			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/a

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 40	x 3 =	120
FACU species 2	x 4 =	
UPL species 65	x 5 =	325
Column Totals: 100 (A)		445 (B)

Prevalence Index = B/A = 4.45

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.

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

Remarks: Does not meet hydrophytic vegetation criterion.

SOIL

Sampling Point: 3

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 2/2	99+	10 YR 8/6	<1	C	RC	Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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: Does not meet the hydric soils criterion as less than 2 percent redox concentrations are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ 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)
- x Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ 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: Does not meet wetland hydrology criterion as a few very fine oxidized root channels are present but they are less than 2 percent of the matrix.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sargent Ranch Quarry City/County: Santa Clara Sampling Date: 10/4/16

Applicant/Owner: Freeman Associates State: CA Sampling Point: 4

Investigator(s): P. Peterson, S. Piramoon Section, Township, Range: ST11 & T12 North, R3 & R4 East

Landform (hillslope, terrace, etc.): stream bed Local relief (concave, convex, none): none Slope (%): 5

Subregion (LRR): C Lat: 36° 54' 37.78 Long: 121° 33' 56.08 Datum: NAD 83

Soil Map Unit Name: Los Osos Clay Loam 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 _____, Soil _____, 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 _____ Hydric Soil Present? Yes x No _____ Wetland Hydrology Present? Yes x No _____	**Is the Sampled Area within a Wetland?** **Yes x No _____**

Remarks: Sample point take within the OHW of Sargent Creek north of an existing at grade crossing.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/a			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. N/a			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Crypsis schoenoides	80	Y	FACW
2. Malva leprosa	<2	N	FACU
3. Festuca perennis	<2	N	FAC
4.			
5.			
6.			
7.			
8.			
Total Cover: 80			
Woody Vine Stratum			
1. N/a			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust N/a

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.

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

Remarks: Meets hydrophyic vegetation criterion.

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
0-4	7.5 YR 2.5/1	99+	10 YR 6/8	<1	C	RC		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- x 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 x No _____

Remarks: Meets hydric soils criterion.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ 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 Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- x Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- x 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: Meets wetland hydrology criterion.

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APPENDIX C: VASCULAR PLANTS OF THE STUDY AREA

The plant species listed below have been observed on the approximately 6300-acre Sargent Ranch study area during the surveys conducted by Live Oak Associates on July 30, August 3 and 4, 2004; June 9 and 10, July 13, 20, 21, and 27, and October 6, 2005; March 28 and 29, 2007; May 29-31, 2007; August 1, 2007; and September 24, 2007; October 4 and 11, 2016. All plants have been named according to *The Jepson Manual* (Hickman 1993). The U.S. Fish and Wildlife Service indicator status of each plant has been shown following its common name. Many, although not all, of these species may also be reasonably expected to occur on the Sargent Ranch Quarry project site.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland
+/- - Higher/lower end of category
NR - No review
NA - No agreement
NI - No investigation

ACERACEAE – MAPLE FAMILY		
Acer macrophyllum	Big-leaf Maple	FAC
Acer negundo	Boxelder	FACW
ANACARDIACEAE – SUMAC FAMILY		
Schinus molle	Peruvian Pepper Tree	UPL
Toxicodendron diversilobum	Poison Oak	UPL
APIACEAE – CARROT FAMILY		
Anthriscus caucalis	Bur-chervil	UPL
Berula erecta	Cut-leaved Water Parsnip	OBL
Conium maculatum	Poison Hemlock	FACW
Daucus pusillus	Rattlesnakeweed	UPL
Eryngium vaseyi	Coyote Thistle	OBL
Foeniculum vulgare	Fennel	FACU
Heracleum lanatum	Cow Parnsip	FACU

Hydrocotyle ranunculoides	Marsh Pennywort	OBL
Lomatium sp.	Lomatium	-
Oenanthe sarmentosa	Water Parsley	OBL
Osmorhiza chilensis	Sweet-cicely	UPL
Perideridia kelloggii	Kellogg's Yampah	UPL
Sanicula bipinnata	Poison Sanicle	UPL
Sanicula bipinnatifida	Purple Sanicle	UPL
Sanicula crassicaulis	Snakeroot	UPL
Sanicula laciniata	Coast Sanicle	UPL
Torilis arvensis	Field Hedge Parsley	UPL
Torilis nodosa	Knotted Hedge Parsley	UPL

APOCYNACEAE – DOGBANE FAMILY

Vinca major	Periwinkle	UPL

ASCLEPIADACEAE – MILKWEED FAMILY

Asclepias fascicularis	Narrow-leaved Milkweed	FAC

ASTERACEAE - SUNFLOWER FAMILY

Achillea millefolium	Common Yarrow	FACU
Achyrachaena mollis	Blow Wives	UPL
Agoseris grandiflora	California Dandelion	UPL
Agoseris heterophylla	Annual Mountain Dandelion	UPL
Ambrosia psilostachya	Western Ragweed	
Anaphalis margaritacea	Pearly Everlasting	
Anthemis cotula	Mayweed	FACU
Artemisia californica	California Sagebrush	UPL
Artemisia douglasiana	Mugwort	FACW
Baccharis pilularis	Coyote Brush	UPL
Baccharis salicifolia	Mule's Fat	FACW-
Carduus pycnocephalus	Italian Thistle	UPL
Centaurea calcitrapa	Purple Star-thistle	UPL
Centaurea solstitialis	Yellow Star-thistle	UPL
Chamomilla suaveolens	Pineapple Weed	FACU
Cichorium intybus	Chicory	UPL
Cirsium vulgare	Bull Thistle	FACU
Conyza canadensis	Canadian Horseweed	FAC
Cotula coronopifolia	Brass Buttons	FACW+
Erechtites glomerata	Cut-leaved Fireweed	UPL
Erigeron philadelphicus	Philadelphia Daisy	
Eriophyllum confertiflorum	Golden Yarrow	UPL
Filago gallica	Narrow-leaved Filago	UPL
Gnaphalium californicum	California Everlasting	UPL
Gnaphalium luteo-album	Cudweed	FACW-
Gnaphalium purpureum	Purple Cudweed	UPL

Grindelia camporum	Great Valley Gumplant	FACU
Helenium puberulum	Rosilla	FACW
Hemizonia congesta ssp. congesta	Hayfield Tarweed	UPL
Hemizonia congesta ssp. luzulifolia	Hayfield Tarweed	UPL
Hemizonia pungens ssp. pungens	Common Spikeweed	FAC
Hesperevax sparsiflora	Erect Hesperevax	UPL
Hypochaeris glabra	Smooth Cat's Ear	UPL
Hypochaeris radicata	Rough Cat's Ear	UPL
Iva axillaris ssp. robustior	Poverty weed	FAC
Lactuca saligna	Willow Lettuce	NI
Lactuca serriola	Prickly Lettuce	FAC
Lagophylla ramosissima ssp. ramosissima	Common Hareleaf	UPL
Lasthenia californica	Goldfields	UPL
Layia platyglossa	Tidy Tips	UPL
Lessingia filaginifolia	Common Lessingia	UPL
Madia gracilis	Slender Tarweed	UPL
Microseris douglasii	Douglas Microseris	UPL
Picris echioides	Bristly Ox Tongue	FAC*
Senecio vulgaris	Common Groundsel	NI
Silybum marianum	Milk Thistle	UPL
Solidago californica	California Goldenrod	UPL
Sonchus asper	Prickly Sow-thistle	FAC
Sonchus oleraceus	Common Sow-thistle	NI
Taraxacum officinale	Common Dandelion	FACU
Tragopogon porrifolius	Tragopogon	UPL
Uropappus lindleyi	Silverpuffs	UPL
Wyethia glabra	Mules-ears	UPL
Wyethia helenioides	Gray Mules Ears	UPL
Xanthium spinosum	Spiny Cocklebur	FAC+
Xanthium strumarium	Common Cocklebur	FAC+

AZOLLACEAE - MOSQUITO FERN FAMILY

Azolla filiculoides	Fern-Like Azolla	OBL

BETULACEAE – BIRCH FAMILY

Alnus rhombifolia	White Alder	FACW
Alnus rubra	Red Alder	FACW
Corylus cornuta var. californica	Hazelnut	NI

BLECHNACEAE - DEER FERN FAMILY

Woodwardia fimbriata	Chain Fern	FACW+

BORAGINACEAE – BORAGE FAMILY

Amsinckia menziesii var. intermedia	Fiddleneck	UPL
Cynoglossum grande	Hound's Tounge	UPL
Heliotropium curassivicum	Alkali Heliotrope	OBL

Plagiobothrys canescens	Valley Popcorn Flower	UPL
Plagiobothrys nothofluvus	Rusty Popcorn Flower	FACU

BRASSICACEAE – MUSTARD FAMILY

Brassica nigra	Black Mustard	UPL
Capsella bursa-pastoris	Cardamine californica	
Milkmaids		UPL
Cardamine oligosperma	Bitter Cress	FACW
Cardaria draba	Hoary Cress	UPL
Hirschfeldia incana	Summer Mustard	UPL
Lepidium campestre	Lepidium latifolium	
Broad-leaved Peppergrass		FACW
Lepidium nitidum	Common Peppergrass	FACW
Lepidium oxycarpum	Sharp-podded Peppergrass	OBL
Lepidium strictum	Wayside Peppergrass	UPL
Raphanus sativus	Wild Radish	UPL
Rorippa curvisiliqua	Western Yellow Cress	OBL
Rorippa nasturtium-aquaticum	Watercress	OBL
Sisymbrium officinale	Hedge Mustard	UPL

CAPRIFOLIACEAE – HONEYSUCKLE FAMILY

Lonicera hispidula	Hairy Honeysuckle	UPL
Sambucus mexicana	Blue Elderberry	FAC
Symphoricarpos albus var. laevigatus	Snowberry	FACU

CARYOPHYLLACEAE – PINK FAMILY

Cerastium glomeratum	Mouse-eared Chickweed	UPL
Silene gallica	Windmill Pink	
Spergularia marina	Salt-marsh Sand Spurry	OBL
Spergularia rubra	Red Sand-spurrey	FAC-
Stellaria media	Common Chickweed	FACU

CHENOPODIACEAE – GOOSEFOOT FAMILY

Atriplex triangularis	Spear Scale	FACW
Chenopodium californicum	California Goosefoot	UPL
Salsola tragus	Russian-thistle	FACU

CONVOLVULACEAE – MORNING GLORY FAMILY

Calystegia occidentalis	Western Morning-glory	UPL
Calystegia subacaulis	Hill Morning-glory	UPL
Convolvulus arvensis	Field Bindweed	UPL
Cressa truxillensis	Alkali Weed	FACW

CORNACEAE – DOGWOOD FAMILY

Cornus glabrata	Brown Dogwood	FACW

CRASSULACEAE – STONECROP FAMILY

Crassula connata	Pygmyweed	FAC

CUCURBITACEAE – GOURD FAMILY

Marah fabaceus	California Man-Root	UPL

CYPERACEAE – SEDGE FAMILY

Carex dudleyi	Dudley's Sedge	FACW
Carex obnupta	Slough Sedge	OBL
Carex serratodens	Bifid Sedge	FACW
Cyperus eragrostis	Umbrella Sedge	FACW
Eleocharis macrostachya	Spikerush	OBL
Scirpus acutus	Common Tule	OBL
Scirpus americanus	Three Square	OBL
Scirpus cernuus	Low Club Rush	OBL

DENNSTAEDTIACEAE – BRACKEN FAMILY

Pteridium aquilinum	Western Bracken Fern	FACU

DIPSACEAE – TEASEL FAMILY

Dipsacus fullonum	Wild Teasel	NI

DRYOPTERIDACEAE – WOOD FERN FAMILY

Athyrium felix-femina	Western Lady Fern	FAC
Dryopteris arguta	Wood Fern	UPL
Polystichum munitum	Western Sword Fern	UPL

EQUISETACEAE – HORSETAIL FAMILY

Equisetum arvense	Common Horsetail	FAC
Equisetum laevigatum	Smooth Scouring Rush	FACW
Equisetum telmateia ssp. braunii	Giant Horsetail	OBL

ERICACEAE – HEATH FAMILY

Arbutus menziesii	Madrone	UPL
Arctostaphylos tomentosa	Woolly-leaf Manzanita	UPL

EUPHORBIACEAE – SPURGE FAMILY

Eremocarpus setigerus	Doveweed	UPL
Euphorbia crenulata	Chinese Caps	UPL

FABACEAE – LEGUME FAMILY

Astragalus gambelianus	Gamble's Milk-vetch	UPL
Lotus corniculatus	Bird's Foot Trefoil	FAC
Lotus purshianus	Spanish Lotus	UPL
Lotus scoparius	California Broom, Deer Weed	UPL
Lotus wrangelianus	California Lotus	UPL

Lupinus adsurgens	Silky Lupine	UPL
Lupinus albifrons	Silver Bush Lupine	UPL
Lupinus bicolor	Miniature Lupine	UPL
Lupinus nanus	Sky Lupine	UPL
Lupinus succulentus	Arroyo Lupine	UPL
Medicago polymorpha	Bur Clover	FACU-
Melilotus alba	White Sweetclover	FACU+
Melilotus indica	Yellow Sweetclover	FAC
Rupertia physodes	California-tea	UPL
Trifolium angustifolium	Narrow-leaved clover	UPL
Trifolium albopurpureum	Indian Clover	UPL
Trifolium bifidum	Notch-leaved Clover	UPL
Trifolium ciliolatum	Tree Clover	UPL
Trifolium dubium	Little Hop Clover	FACU
Trifolium fucatum	Bull Clover	FAC
Trifolium gracilentum var. gracilentum	Pinpoint Clover	UPL
Trifolium hirtum	Rose Clover	UPL
Trifolium incarnatum	Crimson Clover	UPL
Trifolium microcephalum	Small-head Clover	FACU
Trifolium microdon	Valpariaso Clover	UPL
Trifolium subterraneum	Subterraneum Clover	UPL
Trifolium wildenovii	Tomcat Clover	UPL
Trifolium wormskioldii	Cow Clover	FACW
Vicia sativa	Spring Vetch	FACU
Vicia villosa	Hairy Vetch	UPL

FAGACEAE – OAK FAMILY

Quercus agrifolia	Coast Live Oak	UPL
Quercus douglassii	Blue Oak	UPL
Quercus lobata	Valley Oak	UPL

GERANIACEAE – GERANIUM FAMILY

Erodium botrys	Long-beaked Filaree	UPL
Erodium cicutarium	Redstem Filaree	UPL
Geranium dissectum	Cut-Leaved Geranium	UPL
Geranium molle	Dove's Foot Geranium	UPL

GROSSULARIACEAE – GOOSEBERRY FAMILY

Ribes californicum var. californicum	Hillside Gooseberry	UPL
Ribes sanguineum var. glutinosum	Pinkflower Currant	UPL

HIPPOCASTANACEAE – BUCKEYE FAMILY

Aesculus californica	California Buckeye	UPL

HYROPHYLLACEAE – WATERLEAF FAMILY

Nemophila menziesii ssp. menziesii	Baby Blue-eyes	UPL

Pholistima auritum var. auritum	Fiesta Flower	UPL
IRIDACEAE – IRIS FAMILY		
Iris douglasiana	Douglas Iris	UPL
Sisyrinchium bellum	Blue-eyed Grass	FAC
JUGLANDACEAE – WALNUT FAMILY		
Juglans hindsii	California Black Walnut	FAC
JUNCACEAE – RUSH FAMILY		
Juncus balticus	Baltic Rush	OBL
Juncus bufonius	Toad Rush	FACW-
Juncus effuses var. pacificus	Pacific Bog Rush	OBL
Juncus mexicanus	Mexican Rush	FACW
Juncus occidentalis	Western Rush	FACW
Juncus patens	Common Rush	FAC
Juncus xiphioides	Iris-leaf Juncus	FACW+
Luzula comosa	Wood Rush	NI
LAMIACEAE – MINT FAMILY		
Lepichinia calycina	Pitcher Sage	UPL
Marrubium vulgare	Horehound	FAC
Mentha pulegium	Pennyroyal	OBL
Pogogyne serpylloides	Thyme-leaved Pogogyne	FACW
Salvia mellifera	Black Sage	UPL
Stachys ajugoides var. rigida	Rigid Hedge Nettle	OBL
Stachys bullata	Wood Mint	UPL
Stachys pycnantha	Short-spiked Hedge Nettle	FACW
Trichostemma lanceolatum	Vinegar Weed	UPL
LAURACEAE – LAUREL FAMILY		
Umbellularia californica	California Bay	FAC
LEMNACEAE – DUCKWEED FAMILY		
Lemna gibba	Inflated Duckweed	OBL
Lemna minor	Duckweed	OBL
LILIACEAE – LILY FAMILY		
Brodiaea elegans	Harvest Brodiaea	UPL
Calochortus luteus	Yellow Mariposa Lily	UPL
Calochortus venustus	Mariposa Lily	UPL
Chlorogalum pomeridianum	Soap Plant	UPL
Dichelostemma capitatum ssp. capitatum	Blue Dicks	UPL
Muilla maritima	Common Muilla	UPL
Trillium chloropetalum	Giant Trillium	UPL

Triteleia laxa		
LINACEAE – FLAX FAMILY		
Linum bienne	Narrowleaf Flax	UPL
LYTHRACEAE – LOOSESTRIFE FAMILY		
Lythrum hyssopifolia	Hyssop Loosestrife	FACW
MALVACEAE – MALLOW FAMILY		
Malva neglecta	Common Mallow, Cheeses	UPL
Malvella leprosa	Alkali Mallow	FAC
Sidalcea diploscypha	Fringed Sidalcea	
Sidalcea malvaeflora ssp. laciniata	Checker Bloom, Wild Hollyhock	UPL
MYRTACEAE – MYRTLE FAMILY		
Eucalyptus globulus	Blue Gum	UPL
OLEACEAE – OLIVE FAMILY		
Fraxinus dipetala	California Ash	UPL
ONAGRACEAE – EVENING PRIMROSE FAMILY		
Camissonia ovata	Sun Cup	UPL
Clarkia rubicunda	Farewell-To-Spring	UPL
Clarkia sp.	Clarkia	
Clarkia unguiculata	Elegant Fairyfan	UPL
Epilobium brachycarpum	Willow Herb	UPL
Epilobium canum	California Fuschia	UPL
Epilobium ciliatum ssp. ciliatum	California Willowherb	FACW
Epilobium minutum	Minute Willowherb	UPL
Epilobium ciliatum	Willow Herb	FACW
Ludwigia peploides	Yellow Water Weed	OBL
Oenethera elata ssp. hookeri	Hooker's Evening Primrose	
OXALIDACEAE – OXALIS FAMILY		
Oxalis corniculata	Creeping Wood-sorrel	FACU
Oxalis pes-caprae	Bermuda Buttercup	UPL
PAPAVERACEAE – POPPY FAMILY		
Eschscholzia californica	California Poppy	UPL
Platystemon californicus	Cream Cups	UPL
PLANTAGINACEAE – PLANTAGO FAMILY		
Plantago lanceolata	English Plantain	FAC
Plantago major	Common Plantain	FACW-

PLATANACEAE – SYCAMORE FAMILY

Platanus racemosa	Western Sycamore	FACW

POACEAE - GRASS FAMILY

Agrostis viridis	Water Bent Grass	OBL
Arundo donax	Giant Reed	FACW
Avena barbata	Slender Wild Oats	UPL
Avena sativa	Cultivated Oat	UPL
Briza minor	Little Quaking Grass	FACW-
Bromus carinatus	California Brome	UPL
Bromus diandrus	Ripgut	UPL
Bromus hordeaceus	Soft Chess	FACU
Bromus madritensis	Red Brome	NI
Crypsis schoenoides	Swamp Grass	OBL
Crypsis vaginiflora	Prickle-grass	
Cynosurus echinatus	Hedgehog Dogtail	UPL
Danthonia californica	California Oatgrass	FACW
Distichlis spicata	Saltgrass	FACW
Echinochloa crus-galli	Barnyard Grass	FACW
Elymus elymoides	Squirrel tail	FACU-
Elymus glaucus	Blue Wildrye	FACU
Gastridium ventricosum	Nit Grass	FACU
Hordeum brachyanthurumCalifornia Barley		FACW
Hordeum marinum ssp. gussoneanum	Mediterranean Barley	FAC
Hordeum murinum ssp. leporinum	Barnyard Barley	NI
Lamarkia aurea	Goldentop	UPL
Leymus triticoides	Creeping Wildrye	FAC+
Lolium multiflorum	Ryegrass	FAC
Lolium perenne	Perennial Rye	FAC
Melica torreyana	Melic Grass	UPL
Nassella cernua	Nodding Needle Grass	
Nassella pulchra	Purple Needle Grass	UPL
Paspalum distichum	Knotgrass	OBL
Phalaris aquatica	Harding Grass	FAC+
Poa annua	Annual Bluegrass	FACW-
Poa secunda	Oneside Blue Grass	UPL
Polypogon monspeliensis	Annual Beardgrass	FACW
Vulpia bromoides	Six-week Fescue	FACW
Vulpia microstachys	Pacific Fescue	UPL

POLEMONIACEAE – PHLOX FAMILY

Navarretia sp.	Navarretia	

POLYGONACEAE - BUCKWHEAT FAMILY

Eriogonum nudum var.nudum	Naked-stemmed Buckwheat	UPL

Polygonum amphibium var. emersum	Swamp Knotweed	OBL
Polygonum arenastrum	Common Knotweed	FAC
Polygonum hydropiperoides	Water-pepper	OBL
Polygonum persicaria	Lady's Thumb	FACW
Pterostegia drymarioides	Pterostigia	UPL
Rumex acetosella	Sheep Sorrel	FAC_
Rumex crispus	Curly Dock	FACW
Rumex pulcher	Fiddle Dock	FAC+
Rumex salicifolius	Willow Dock	OBL

POLYPODIACEAE – POLYPLODY FAMILY

Polypodium californicum	California Polypody	UPL

PORTULACACEAE – PURSLANE FAMILY

Calandrinia ciliata	Red Maids	FACU
Claytonia gypsophiloides	Coast Claytonia	UPL
Claytonia parviflora ssp. parviflora	Small-leaved Claytonia	UPL
Claytonia perfoliata ssp. perfoliata	Miner's Lettuce	FAC
Portulaca oleracea	Common Purslane	FAC

POTAMOGETONACEAE - PONDWEED FAMILY

Potamogeton nodosus	Long-leaved Pondweed	OBL

PRIMULACEAE – PRIMROSE FAMILY

Anagallis arvensis	Scarlet Pimpernel	FAC
Dodecatheon hendersonii	Mosquito Bills	UPL
Trientalis latifolia	Star Flower	UPL

PTERIDACEAE – BRAKE FAMILY

Adiantum jordanii	Maidenhair Fern	UPL
Pellaea andromedaefolia	Coffee Fern	UPL
Pentagramma triangularis	Gold-back Fern	UPL

RANUNCULACEAE – BUTTERCUP FAMILY

Clematis ligusticifolia	Virgin's Bower	FAC
Myosurus minimus	Common Mousetail	OBL
Ranunculus californicus	California Buttercup	FAC

RHAMNACEAE – BUCKTHORN FAMILY

Rhamnus californica	California Coffeeberry	UPL
Rhamnus crocea	Redberry	UPL

ROSACEAE – ROSE FAMILY

Acaena pinnatifida var. californica	California Acaena	UPL
Adenostema fasciculatum	Chamise	FAC
Aphanes occidentalis	Lady's Mantle	UPL

Fragaria vesca	Wood Strawberry	UPL
Heteromeles arbutifolia	Toyon	UPL
Holodiscus discolor	Creambush	UPL
Horkelia californica ssp. frondosa	Leafy Horkelia	UPL
Oemlaria cerasiformis	Oso Berry	UPL
Prunus cerasifera	Cherry Plum	UPL
Rosa californica	California Rose	FAC+
Rubus discolor	Himalayan Blackberry	FACW
Rubus ursinus	California Blackberry	FACW

RUBIACEAE – MADDER FAMILY

Galium aparine	Goosegrass	FACU
Galium parisiense	Wall Bedstraw	FACU
Galium porrigens	Climbing Bedstraw	UPL
Sherardia arvensis	Field Madder	UPL

SALICACEAE – WILLOW FAMILY

Populus balsamifera ssp. tricocarpa	Black Cottonwood	FACW
Populus fremontii	Fremont's Cottonwood	FACW
Salix exigua	Narrowleaf Willow	OBL
Salix laevigata	Red Willow	FACW
Salix lasiolepis	Arroyo Willow	FACW
Salix lucida ssp. lasiandra	Yellow Willow	OBL

SAXIFRAGACEAE – SAXIFRAGE FAMILY

Lithophragma affine	Woodland Star	UPL
Saxifraga californica	California Saxifrage	UPL

SCROPHULARIACEAE – SNAPDRAGON FAMILY

Castilleja affinis ssp. affinis	Indian Paintbrush	UPL
Castilleja exserta	Pink Owl's Clover	UPL
Castilleja foliolosa	Woolly Indian Paint-brush	UPL
Mimulus aurantiacus	Sticky Monkeyflower	UPL
Mimulus guttatus	Common Monkeyflower	OBL
Scrophularia californica	Beeplant	FAC
Tryphysaria pusilla	Little Owl's Clover	UPL
Veronica anagallis-aquatica	Water speedwell	OBL

SOLANACEAE – NIGHTSHADE FAMILY

Solanum nigrum	Black Nightshade	FACU
Solanum umbelliferum	Blue Witch	UPL

TAXODIACEAE – BALD CYPRESS FAMILY

Sequoia sempervirens	Coast Redwood	UPL

TYPHACEAE – CATTAIL FAMILY

Typha angustifolia	Narrow-leaved Cattail	OBL
Typha latifolia	Broad-leaved Cattail	OBL

URTICACEAE – NETTLE FAMILY

Urtica dioica ssp. *holosericea*	Stinging Nettle	FACW
Urtica urens	Dwarf Nettle	UPL

VERBANACEAE – VERBANE FAMILY

Phyla nodiflora	Garden Lippia	FACW
Verbena lasiostachy var. scabrida	Robust Verbena	FAC-

VIOLACEAE – VIOLET FAMILY

Viola pedunculata	Johnny Jump-up	UPL

VISCACEAE – MISTLETOE FAMILY

Phoradendron villosum	Oak Mistletoe	UPL

Appendix E.2
Biotic Evaluation Peer Review (2017)

ESA

H.T. HARVEY & ASSOCIATES
Ecological Consultants

Memorandum

April 21, 2017

To: **Amie Ashton, David J. Powers & Associates**

From: **Ginger Bolen, H. T. Harvey & Associates**

Subject: **Sargent Ranch Quarry Biotic Evaluation Peer Review (HTH #3909-01)**

As requested, H. T. Harvey & Associates has conducted a peer review of the Biotic Evaluation for Sargent Ranch Quarry prepared by Live Oak Associates, Inc. (LOA) and dated September 28, 2016. This peer review is based on a brief field inspection of portions of the project site conducted by senior wildlife ecologist Ginger Bolen, Ph.D. and senior plant/wetlands ecologist Kelly Hardwicke, Ph.D. on March 3, 2017; our review of relevant background information; and our experience working on projects in the vicinity (e.g., Highway 101 widening directly east of the project and the Castro Valley Ranch subdivision to the north).

We understand that the proposed project is not a covered project under the Santa Clara Valley Habitat Plan (VHP). However, we further understand that the proposed quarry has been designed to be consistent with VHP goals and conditions and that the County of Santa Clara would like the project's Environmental Impact Report, which David J. Powers & Associates is preparing, to discuss the comparability of proposed Best Management Practices (BMPs) and mitigation measures with those that would be required for covered projects under the VHP. Therefore, where appropriate, we have included comments addressing the proposed project's compatibility with the VHP.

It should be noted, however, that there is a fundamental difference in the way the VHP approaches avoidance and minimization, as opposed to habitat/species conservation, for some species, compared to more traditional approaches. For example, the VHP's conservation program for the federally threatened California red-legged frog (*Rana draytonii*), state and federally threatened California tiger salamander (*Ambystoma californiense*), and California species of special concern western pond turtle (*Actinemys marmorata*), all of which occur on the Sargent Ranch site, focuses on habitat conservation. Impact fees paid by covered project applicants are used to acquire, enhance, and manage suitable habitat for these species. Although a number of avoidance and minimization measures for aquatic habitats are required by the VHP, the VHP does not require any species-specific measures, such as preconstruction surveys, construction monitoring, or relocation of individuals out of project areas. As a result, it is our opinion that some differences between the mitigation approach of non-covered projects such as the Sargent Ranch Quarry and VHP-covered projects will exist, and are appropriate.

As a result of our review, we offer the following comments, in order of occurrence in the draft report:

Chapter 1. Introduction

- Page (Pg.) 4 – The report states that the project site is located at the intersection of Townships 11 and 12 North. The site is located at the intersection of Townships 11 and 12 South.
- Pg. 6 – Figure 2, which depicts the study area on a U.S. Geological Survey topographical map, does not include the access road over Tar Creek as part of the study area, despite substantial improvements being proposed along this road, including the installation of a bridge over Tar Creek.
- Pg. 10 – The report states that a conveyor belt will be constructed along the west side of the Sargent Valley. However, based on Figure 2, the conveyor belt will be located on the east side of the Valley.
- Pgs. 10-11 – The report states that a 50-foot berm will be constructed to obscure sightlines of the quarries and this berm will be located to the east of the property boundary closest to Highway 101. As there are no impacts or project areas shown on Figure 2 (or other figures) to the east of Sargent Ranch boundaries, we are uncertain if impacts related to placement of this berm are shown or analyzed in this document, or if this description of the berm location is inaccurate.
- Pg. 16 – The report states that unavoidable impacts are proposed to be mitigated by the dedication of a conservation easement area on the east side of Sargent Valley. Based on Figure 4, the proposed mitigation area is on the west side of Sargent Valley.

Chapter 2. Existing Conditions

Section 2.1 Biotic Habitats

- Pg. 25 and Figures 2 and 4 – The report states that one drainage with a defined bed and banks occurs within the project site footprint within Phases 3 and 4 (referred to as intermittent channel 3a and 3b in the project wetland delineation [LOA 2016] and referred to herein as "intermittent drainage 3"). During field review conducted by H. T. Harvey & Associates senior plant/wetlands ecologist Kelly Hardwicke, Ph.D., an additional three drainages within this area were detected. The first is a blue line stream shown on Figure 2 from the USGS topo layer but not on Figure 4, which runs roughly between the northern boundaries of the Phase 3 and 4 areas and the southern boundary of the Permanent Overburden Stockpile (referred to herein as the "stockpile drainage"). The stockpile drainage had a defined bed and banks, and indicators of regular flows including clear incision and knick points along the banks, and it supported an associated riparian canopy consisting largely of coast live oak (*Quercus agrifolia*) and understory shrubs such as poison oak (*Toxicodendron diversilobum*). In some locations along this drainage, willows (*Salix* sp.) also occur. Many of these trees are rooted within the banks or even in the channel bed, are assumed to be dependent on the hydrology of the drainage (given the lack of tree cover in the hillsides surrounding the drainage), and would be considered riparian trees. The stockpile drainage was observed to contain pools of standing water and reaches of actively running water during the site visit date of March 3, 2017. This visit was conducted during the rainy season but several days following the last storms to occur before this date, so an intermittent connection to groundwater in at

least some reaches of this creek could not be ruled out. There are some erosional side channels to this drainage that also support riparian species such as willows, and areas of saturated or ponded soils and facultative wetland species were observed in some areas near this drainage, which may be considered jurisdictional wetlands. A corridor of mixed riparian woodland and forest should be mapped along the stockpile drainage in some areas where Figure 4 currently depicts coast live oak woodland, and the drainage and corresponding linear footage should be added to Figure 4. Finally, H. T. Harvey & Associates observed two tributary drainages to intermittent drainage 3. These features are discussed in the project wetland delineation (LOA 2016) as "erosional gullies", but it is unclear how this determination was made (i.e., why LOA did not consider these potentially jurisdictional creeks). These "gully" drainages have defined bed and banks, and were running water at the time of our survey. These tributary drainages also displayed indicators of Ordinary High Water Marks (OHWMs) and regular flows, such as clear incision.

- Pg. 25 and Figure 4 – Tar Creek supports willow riparian forest and scrub, which should be shown on the map in the area of proposed project impacts.
- Pg. 25 and Figure 4 – The road/conveyor belt area between Phase 2 and Phase 1 may contain jurisdictional wetlands that are not shown. The low bench on the east side of Sargent Creek was fully saturated and even ponding water over extensive areas in March of 2016. This may be partially a function of the extremely wet rain year in 2016-2017, although our site visit occurred six days following the last prior rainfall event, which took place on February 26, 2017 and deposited approximately 0.3 inches (UC Integrated Pest Management Program 2017). Compared to an earlier attempted site visit in December 2016 that was cancelled after a brief time on site due to impassable roads, roads and upland slopes in other areas of the site were substantially drier during the March 2017 site visit. A ranch employee who escorted H. T. Harvey & Associates biologists on the March site visit confirmed that this low bench area on the east side of Sargent Creek is wetted during most years to the point that travel using even Utility Task Vehicles (UTVs) is prevented during some periods of most spring seasons.[1] Vegetation observed on the western bench was hydrophytic, and included facultative wetland species such as Mediterranean barley (*Hordeum marinum*) and Italian rye-grass (*Festuca perennis*), as well as species with a higher wetland indicator status such as toad rush (*Juncus bufonius*), slough sedge (*Carex obnupta*), and other rushes (*Juncus* sp.). The only wetland delineation sample points taken by LOA in this general area to characterize mesic uplands were not taken on the eastern bench, just the stream crossing location and over 100 feet from the Sargent Creek centerline on the western bench (LOA 2016).
- Pg. 29 and Figure 4 – The report describes coast live oak woodland occurring along an "ephemeral drainage", which is referred to herein as intermittent drainage 3. Further, as described in LOA's wetland delineation, in 2016/2017 this feature appears to have a seasonal connection to groundwater and is likely intermittent. Coast live oak woodland was also associated with a "ravine" in the southern portion of the Permanent Overburden Stockpile area, which corresponds to the USGS blue line stockpile

[1] Please note, the level of soil saturation in this eastern bench area prevented H. T. Harvey & Associates from accessing the Phase 1 area in March 2017, and therefore we could not verify land cover types in locations of the project site to the west of Sargent Creek.

drainage discussed above. In both cases, much of this coast live oak woodland is associated with the drainages, being rooted in their bed and banks, and the canopy of such trees would therefore be considered mixed riparian woodland and forest under VHP conventions and as riparian under State Fish and Game Code Section 1600.

- Pg. 30 – The report lists Sargent Creek as a VHP Category 1 stream. It is not depicted as such on the Habitat Agency Geobrowser, though stream characteristics likely meet the VHP definition of "some intermittent streams… [that] support movement of covered species along the length of the stream" (ICF International, 2012). Based on such a definition, however, intermittent drainage 3 within Phases 3 and 4 could likely also meet this Category 1 definition under the VHP.
- Pg. 30 – As a waters feature that would be impacted by the project, Tar Creek should be characterized and discussed in this section, and the stream and associated riparian habitat shown on Figure 4.

Section 2.2 Movement Corridors

- The study area is located within an area of important habitat connectivity for wildlife, and it is our opinion that the report does not adequately describe wildlife movement on the project site within a regional context. The Santa Cruz Mountains to the northwest, the Gabilan Range to the south, and the Diablo Range across the Santa Clara Valley to the east provide vast areas of natural habitat that support sizeable populations of common and special-status plant and animal species. Exchange of individuals and genes among the populations in these three ranges is important to the long-term maintenance of populations and genetic diversity in these ranges and in central California as a whole. Undeveloped habitats in southern Santa Clara County, including the project site, provide landscape linkages between the Santa Cruz Mountains and Diablo Range, and between these mountain ranges and the Gabilan Range. In fact, Sargent Ranch may be one of the most important areas for wildlife movement on the Central Coast, given the linkages that occur, and meet, on this property.

  Immediately west of the project site, the Santa Cruz Mountains narrow from north to south, ending at the Pajaro River Valley and State Route (SR) 129. South of SR 129 and the Pajaro River, the Gabilan Range begins. Although the Pajaro River and SR 129 (as well as low density development) both represent impediments to wildlife movement, larger, more mobile species can easily navigate these impediments, and there are ample opportunities for even smaller, less mobile wildlife to move across these impediments. Under existing conditions, larger animals can easily move between the two ranges in this area, and Thorne et al. (2002) considered this linkage very important for the movement of mountain lions. Also, there is sufficient suitable "core" habitat for many of the smaller, less mobile species that genetic exchange can occur over a series of generations. Because the Santa Cruz Mountains are constricted to such a narrow area in the immediate vicinity of Sargent Ranch, maintaining the ability of animals to move through Sargent Ranch is very important to maintaining regional connectivity.

  A second important landscape linkage, which is bisected by U.S. 101, lies between the Santa Cruz Mountains/Gabilan Range and the Diablo Range to the east. Unlike the Santa Cruz and Gabilan ranges, which are contiguous, a gap of approximately 6 miles occurs between the eastern foothills of the Santa Cruz Mountains immediately west of the study area and the western foothills of the Diablo

Range. The Pajaro River, as well as relatively natural habitats (e.g., fallow fields and ranchlands), are very important in maintaining this linkage. Aside from Coyote Valley far to the north, the Pajaro River area represents the best opportunity for movement of larger animals, or exchange of genes over generations for smaller, less mobile species, between the Diablo Range and the Santa Cruz Mountains. Highway 101 constrains east-west movement between the Pajaro River east of Highway 101 and areas west of Highway 101, but there are a number of culverts and other undercrossings that allow animals to move beneath the highway, and H. T. Harvey & Associates has documented these undercrossing locations and their use by wildlife (Caltrans 2011). Maintaining the ability of wildlife to easily move to and from these undercrossings is important, and the analysis in the LOA report is not adequately detailed to indicate whether project facilities will constrain such movement.

A smaller-scale and more local, but still important area of potential wildlife movement is provided by the proximity of the southern Santa Cruz Mountains and the Lomerias Muertas (the hills east of U.S. 101 between the Pajaro and San Benito Rivers). The foothills of the Santa Cruz Mountains are separated from the Lomerias Muertas by the Pajaro River, a narrow strip of mostly agricultural land, U.S. 101, Betabel Road, and Y Road. From U.S. 101, the Lomerias Muertas stretch to the southeast. These hills provide potentially important secondary linkages between the Santa Cruz Mountains and the Gabilan Range, and between the Gabilan Range and the Diablo Range. As noted in the previous paragraph, maintaining the ability of animals to easily move to and from the Highway 101 undercrossings is important.

All three of the aforementioned landscape linkages are indicated as being important to wildlife movement by the VHP.

Section 2.3 Special-Status Plants and Animals

- Pg. 37 and Table 2 – The report indicates that California Native Plant Society rare plants with a California Rare Plant Rank (CRPR) of 1A, 1B, 2, 3, and 4 were considered in this analysis; however, the table only lists CRPR 1B species. As this is a large site with large impact areas, there is some potential for a population of CRPR 2, 3, or 4 species to occur on site that is large enough to result in a significant impact if the population is lost and not mitigated. All CRPR plants should be addressed for occurrence within Table 2 (or, if the list of CRPR 2, 3, or 4 species that were considered and dismissed is large, as we expect it would be, then perhaps Table 2 can address potentially occurring CRPR 1, 2, 3, and 4 species and those species that are dismissed could be tabulated in an appendix along with the justification for dismissal).

- Pgs. 42-46, Table 3 – For all VHP covered species, we recommend including statements in Table 3 indicating whether the VHP maps suitable habitat for the species on the proposed project site. Inclusion of this information would facilitate comparison of the proposed avoidance, minimization, and compensatory mitigation measures with those that would be required under the VHP.

  The VHP maps suitable breeding habitat on the project site for the following VHP covered species: California red-legged frog (*Rana draytonii*) (breeding, refugia, and dispersal), California tiger salamander

(*Ambystoma californiense*) (non-breeding habitat), western pond turtle (*Actinemys marmorata*) (primary and secondary habitat), foothill yellow-legged frog (*Rana boylii*) (primary habitat), burrowing owl (*Athene cunicularia*) (potential nesting/overwintering), least Bell's vireo (*Vireo bellii pusillus*) (primary habitat), tricolored blackbird (*Agelaius tricolor*) (primary and secondary habitat), and San Joaquin kit fox (*Vulpes macrotis*) (secondary habitat – low use). Although we do not expect the San Joaquin kit fox to occur on the project site, because a portion of the site is mapped as suitable habitat by the VHP, the species should be included in Table 3.

- Pgs. 42-46, Table 3 – The grasshopper sparrow (*Ammodramus savannarum*), a California species of special concern, is included in Appendix B as a species potentially occurring in the study area, and H. T. Harvey & Associates staff have previously observed this species breeding (adults feeding young) on Sargent Ranch from adjacent properties. This species should be included in Table 3 and the following species account added to Section 2.3.

  Life History and Ecology. In California, the distribution of breeding grasshopper sparrows includes the Coast Ranges, the northern Central Valley, and areas west of the southeastern deserts (Lyon 2000, Unitt 2008). The grasshopper sparrow breeds in open, short grasslands with scattered clumps of shrubby vegetation, constructing domed ground nests with grasses in patches of dense vegetation (Vickery 1996, Sutter and Ritchison 2005, Unitt 2008). Prime breeding habitat features very large, unfragmented areas of grassland with patches of bare ground, and clumps of shrubby vegetation surrounded by denser grass cover for singing perches and nest sites (Vickery 1996, Lyon 2000, Sutter and Ritchison 2005). Grasshopper sparrows breed from mid-March to August in California, after which they migrate to wintering grounds that are presumed to be in Mexico and Central America (Vickery 1996, Unitt 2008).

  In Santa Clara County, breeding grasshopper sparrows occur in the foothills of the Santa Cruz Mountains, from Calaveras Reservoir southeast to the hills above Pacheco Creek, and in the southeast portion of the County where the hills drop down to the Pajaro River Valley (Heller 2007). The species may occur somewhat more widely during migration, but it is seldom seen in the South Bay outside the breeding season.

  Occurrence on the Site. The grasslands in the study area provide suitable nesting and foraging habitat for the grasshopper sparrow, and the species has been observed breeding on the greater Sargent Ranch property (see Appendix B).

- Pgs. 42-46, Table 3 – The yellow warbler (*Setophaga petechia*), a California species of special concern, is included in Appendix B as a species potentially occurring in the study area. This species should be included in Table 3 and the following species account added to Section 2.3.

  Life History and Ecology. In California, the yellow warbler occupies wooded riparian habitats along the coast, on both eastern and western slopes of the Sierra Nevada, and throughout the northern portion of the state (Heath 2008). This species prefers riparian corridors with an overstory of mature cottonwoods and sycamores, a midstory of box elder and willow, and a substantial shrub understory (Bousman 2007), particularly in areas with more open space adjacent to the riparian habitat. Yellow

warblers construct open-cup nests in upright forks of shrubs or trees in dense willow thickets or other dense vegetation (Lowther et al. 1999).

Yellow warblers are uncommon breeders in the County because of loss of riparian habitat, invasion by non-native plants, development along riparian corridors, and the abundance of the brown-headed cowbird (*Molothrus ater*) in the San Jose area. However, small numbers of yellow warblers still breed in remnant riparian areas within Santa Clara County (Bousman 2007). In the South County, the species has been recorded breeding in riparian habitat along Llagas, Uvas/Carnadero, and Pacheco Creeks, as well as the Pajaro River. Yellow warblers are an abundant migrant throughout the Valley during the spring and fall.

Occurrence on the Site. Riparian habitats within and adjacent to the project site provide potentially suitable nesting and foraging habitat for the yellow warbler.

- Pgs. 42-46, Table 3 – The Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*, a California species of special concern, potentially breeds in the study area. This species should be included in Table 3 and the following species account added to Section 2.3.

  Life History and Ecology. The Bryant's savannah sparrow is one of four subspecies of savannah sparrow that breed in California. The *alaudinus* subspecies occurs primarily in coastal and bayshore areas, from Humboldt Bay to Morro Bay, and is found year-round in low-elevation, tidally influenced habitat, specifically pickleweed-dominated salt marshes, and in grasslands and ruderal areas. Bryant's savannah sparrows breed in the County primarily in short pickleweed-dominated portions of diked/muted tidal salt marsh habitat, and in adjacent ruderal habitat, in the South San Francisco Bay area. Breeding also has been confirmed in expanses of short grassland in inland/upland areas on the west side of the Coyote Valley and in the Santa Cruz Mountain foothills, just north of the Pajaro River Valley (Rottenborn 2007). During the non-breeding season, *alaudinus* and other savannah sparrow subspecies may forage in open areas throughout the County.

  Occurrence on the Site. Grassland habitats within and adjacent to the project site provide potentially suitable nesting and foraging habitat for the Bryant's savannah sparrow, although this species is expected to breed there only in low numbers.

- Pg. 42 – Table 3 indicates that steelhead (*Oncorhynchus mykiss*) are absent from the study area but goes on to indicate that steelhead are known to occur in Tar Creek and that Tar Creek is designated as critical habitat for the species. Because the proposed project includes the construction of a 50-foot bridge over Tar Creek, steelhead should be considered to be present in the study area and potential impacts on the species should be discussed in the impact analysis.

- Pg. 43 – Table 3 indicates that potential nesting habitat for the bank swallow (*Riparia riparia*) is present along Sargent Creek and that the species has been documented foraging on the ranch. More information on observations, particularly time of year, should be provided. This species is known as a breeder in Santa Clara County and its vicinity only from historical breeding at a nearby location along the Pajaro River, and though that historical colony has been unoccupied for decades, the potential for

breeding by this species should be considered if individuals are recorded near suitable nesting habitat during the breeding season.

- Pg. 43 - Table 3 indicates that the least Bell's vireo is unlikely to nest on the project site but that potential nesting habitat occurs along the upper reaches of Sargent Creek and along Tar Creek near the Phase 4 overburden and plant site areas. We concur with the report's conclusion that the least Bell's vireo is unlikely to occur on the project site, given the species' status in and near Santa Clara County as a very scarce and sporadic visitor. However, as stated above, the VHP maps suitable breeding habitat for the species along Tar Creek within the project boundary and covered projects would be required to conduct a focused survey for suitable nesting habitat within 250 feet of the project boundaries. If suitable breeding habitat were identified, avoidance and construction monitoring measures would be required. Therefore, we recommend including a more detailed discussion of why the riparian habitat along Tar Creek within the project boundaries does not support nesting habitat for the least Bell's vireo.

- Pg. 43 – Table 3 indicates that suitable nesting habitat for the tricolored blackbird is absent from the project site. Suitability of this species' nesting habitat can change dramatically at a site from one year to the next (e.g., grazing can degrade habitat, and removal of grazing can allow for habitat to regenerate from one year to the next). As a result, the potential for tricolored blackbird to nest on the site should be considered a "fluid" condition, and measures should be implemented to ensure that no colonies are impacted during the year in which activities in a given area are initiated. This is especially important given that Phases 3 and 4 will not be impacted for 14-16 years following project initiation at Phases 1 and 2; conditions could change considerably over 14-16 years.

- Pg. 44 – Townsend's big-eared bat (*Corynorhinus townsendii*) is no longer a candidate for state listing.

- Pg. 48 – The report indicates that Pacific North Western Biological (PNWB) confirmed the presence of three breeding populations of California tiger salamanders on Sargent Ranch during surveys conducted in 2000-2001, but goes on to state that the project site does not support breeding habitat for the species. However, as depicted in Figure 6, one of the three confirmed breeding populations is located within the project boundary for Phase 3. Therefore, the project site does support breeding habitat for the California tiger salamander.

  In addition, we recommend that the discussion of known occurrences of the California tiger salamander on Sargent Ranch more explicitly discuss whether all potentially suitable aquatic habitat within the project site has been surveyed for the species. Further, it is unclear what aquatic features were surveyed with negative results. Thus, we recommend including all survey locations, with indications of negative and positive results, in Figure 6, especially given that the report indicates these features may have the potential to support California tiger salamanders if drought conditions sufficiently reduce populations of potential predators (e.g., bullfrogs [*Lithobates catesbeianus*] and fish).

- Pg. 54 – The report indicates that no suitable breeding habitat for the California red-legged frog is present on the project site. However, it is not clear how this determination was reached. The discussion

of known occurrences should more explicitly discuss whether all potentially suitable aquatic habitat on the project site has been surveyed for the species. Further, we recommend including in Figure 6 the location of ponds surveyed with negative results. Similar to the California tiger salamander, such features may support California red-legged frogs if drought conditions sufficiently reduce populations of potential predators.

Section 2.4 Jurisdictional Waters

- Pg. 58 -- We agree that the project wetland delineation should be verified by the U.S. Army Corps of Engineers (USACE), especially to determine which of the drainages within Phases 3 and 4 may be considered waters of the U.S. The wetland delineation shows these areas as isolated but does not discuss whether there is an actual barrier preventing flows to nearby Pajaro River, for example via culverts under the railroad tracks between the site and the river. It is not clear that under current USACE standards and guidelines intermittent drainage 3 and its tributaries, or the stockpile drainage to the north of it located between the Phase 3 and 4 areas and the Permanent Overburden Stockpile area, would be considered isolated and therefore disclaimed by the USACE as waters of the U.S. It is also not clear that, if the delineation used measures outlined in the most current guidance for determining Ordinary High Water Marks (Lichvar and McColley 2008), the tributaries to intermittent drainage 3 termed "erosional gullies" would not be considered jurisdictional by the USACE (or the Regional Water Quality Control Board [RWQCB] and California Department of Fish and Wildlife [CDFW]). The report states that the drainages on site would be considered jurisdictional by the RWQCB up to the OHWMs and by CDFW up to top of bank. In our experience, the RWQCB currently claims waters of the State jurisdiction of riparian banks to top of bank and CDFW would typically consider areas beyond top of bank but underneath the riparian canopy of trees rooted within the banks to be riparian jurisdiction.

Chapter 3. Impacts and Mitigation

Section 3.1 Significance Criteria

No comment.

Section 3.2 Relevant Goals, Policies, and Laws

- Pg. 70 – The section on Condition 11 correctly describes stream setbacks for Category 1 streams outside the VHP urban services area, but it should be included that Category 2 streams have a setback of 35 feet from top of bank, or 35 feet from the edge of riparian vegetation where this is present. It is assumed that some of the streams on site would be considered Category 2 streams (such as the ravine drainage south of the Permanent Overburden Stockpile area) with an associated riparian canopy.

Section 3.3 Environmental Impact/Mitigation

- Pg. 72, Impact Statement 3.3.1, Conflict with an Adopted Habitat Conservation Plan – Although the proposed Phase 1 crossing of Tar Creek is mentioned in the *Mitigation* discussion, the preceding description of the drainages located on the project site does not mention Tar Creek. The proposed project includes improvements (e.g., installation of a 50-foot long bridge) to the existing crossing of Tar Creek, which is considered a Category 1 stream under the VHP, and this feature should be included in the description of the project site. Additionally, the VHP-required 35-foot setback (from top of bank or edge of riparian canopy if present) from Category 2 streams is not discussed. It appears that some impacts, possibly quarry excavation, would occur within the setbacks for Category 2 streams. Although the project is not required to meet VHP conditions, analysis of the project within the framework of the VHP would consider impacts, and possible mitigation for such impacts, to impacts within the VHP setbacks for Category 2 streams. Additionally, as several streams may be filled, it is not clear how the project would comply with VHP Condition 3, which seeks to maintain hydrologic connections. It should also be noted that in some cases, because the project would not be covered by the VHP, mitigation and avoidance measures not required under the VHP would be necessary to reduce impacts on sensitive biological resources to less than significant levels under CEQA.

- Pg. 73, Impact Statement 3.3.2, Potential Impacts to California Tiger Salamander Habitat and Individuals – Based on our review, we have concerns regarding the adequacy of this impact analysis for the following reasons, which are described in more detail below:

    - Lack of discussion of impacts on occupied breeding habitat
    - Lack of mitigation for impacts on occupied and suitable breeding habitat
    - Insufficient mitigation for impacts on upland estivation habitat

    Impact 3.3.2 correctly concludes that grasslands occurring within all four phases of the proposed project provide suitable estivation habitat for the California tiger salamander and that the species may be present in these habitats on the site. The analysis further concludes that the project would result in the loss of estivation habitat and in harm or mortality to individual California tiger salamanders estivating on the site during project implementation. However, the impact statement concludes that no breeding habitat for the California tiger salamander would be impacted by the proposed project. As described above, breeding by California tiger salamanders was confirmed in a drainage in the Phase 3 mining area. In addition, conclusive evidence that California tiger salamanders do not breed in other locations within the project boundaries is not provided. Surveys for the species were last conducted over 16 years ago in 2000-2001. Further, as stated on page 51 of the report, recent drought conditions may have reduced bullfrog and fish populations in ponds that did not support the tiger salamander at the time surveys were conducted, making them more suitable for California tiger salamander breeding. However, the location of such ponds in regards to proposed project impact areas is unknown and the amount of suitable California tiger salamander breeding habitat that would be impacted cannot be determined at this time. Therefore, we recommend that either (a) a protocol-level survey for larval tiger salamanders be conducted within the project boundaries or (b) all suitable aquatic habitat within the

project boundary, as mapped by a qualified biologist, be considered suitable breeding habitat for the species.

We assume that California tiger salamanders could occur virtually anywhere on the project site. Therefore, all impacted natural habitat (i.e., areas that were not already paved or otherwise developed) should be considered impacted California tiger salamander habitat. The project is expected to result in the loss of 297.73 acres of suitable habitat for this species, including approximately 241 acres of annual grassland; 33 acres of coast live oak forest and woodland; 23 acres of grain, row-crop, hay & pastures, disked/short-term fallowed; and 0.7 acre of mixed riparian forest and woodland habitat. Proposed mitigation includes avoidance, minimization, and compensation via preservation of lands on the Sargent Ranch Property, including 259 acres of grasslands that provide estivation habitat for the California tiger salamander, approximately 46 acres of coast live oak forest and mixed oak forest, approximately 92 acres of scrub and chaparral habitats (which, at best, are expected to provide low quality habitat for the California tiger salamander), and 1.0 acre of seasonal wetland (398 acres total). It is our opinion that the proposed mitigation is not sufficient to reduce impacts on upland estivation habitat to a less-than-significant level. Further, mitigation for impacts on occupied breeding habitat is warranted. Therefore, we recommend the following habitat compensation measure be implemented to reduce project impacts due to the loss of California tiger salamander upland and breeding habitat to a less than significant level.

<u>Recommended Mitigation Measure – Compensation for Loss of California Tiger Salamander Upland and Breeding Habitat</u>

- The applicant will provide mitigation to compensate for unavoidable impacts on California tiger salamander upland habitat through the preservation, management, and enhancement (e.g., through long-term management targeted toward this species) of high-quality habitat that is already occupied by California tiger salamanders at a ratio of at least 2:1 (mitigation:impact).
- The applicant will provide mitigation to compensate for unavoidable impacts on California tiger salamander breeding habitat through one or both of the following methods:
    - the creation of aquatic habitat that could support the species at a 2:1 (mitigation:impact) ratio
    - the enhancement of degraded aquatic habitat that is unsuitable for use by California tiger salamanders, but that (a) is in close proximity to areas of known occurrence and (b) can be made more suitable for use via the eradication of aquatic predators (e.g., bullfrogs and predatory fish) at a 3:1 mitigation ratio.
- The applicant will develop a Habitat Mitigation and Monitoring Plan (HMMP) describing the measures that will be taken to manage the created/enhanced breeding and upland habitat and to monitor the effects of management on the California tiger salamander. That plan will include, at a minimum, the following:

- a summary of impacts on California tiger salamander habitat and populations, and the proposed mitigation;
- a description of the location and boundaries of the mitigation site and description of existing site conditions;
- a description of measures to be undertaken if necessary to enhance (e.g., through focused management) the mitigation site for California tiger salamanders;
- proposed management activities, such as managed grazing, management of invasive plants, measures targeted at sustaining populations of burrowing mammals, or other measures to maintain high-quality habitat for California tiger salamanders;
- a description of species monitoring measures on the mitigation site, including specific, objective goals and objectives (such as maintaining or increasing abundance of California tiger salamanders or maintaining or improving habitat suitability), performance indicators and success criteria (such as presence or abundance of upland refugia or hydroperiod of breeding habitat), monitoring methods (such as sampling of upland refugia or monitoring of the hydroperiod of breeding habitat), data analysis, reporting requirements, and monitoring schedule. At a minimum, performance criteria will include occupation by the California tiger salamander of created breeding habitat;
- a description of the management plan's adaptive component, including potential contingency measures for mitigation elements that do not meet performance criteria; and
- a description of the funding mechanism for the long-term maintenance and monitoring of the mitigation lands.

- Pg. 76, Impact Statement 3.3.3, Potential Impacts to California Red-Legged Frog Habitat and Individuals – Based on our review, we have concerns regarding the adequacy of this impact analysis for the following reasons, which are described in more detail below:

    - Lack of discussion of impacts on suitable breeding habitat
    - Lack of mitigation for impacts on suitable breeding habitat
    - Insufficient mitigation for impacts on upland habitat

    Impact 3.3.3 correctly concludes that the proposed project would result in the direct loss of suitable upland habitat for the California red-legged frog in the form of grassland and woodland habitat; and could result in harm or mortality of individuals. However, the analysis concludes that no California red-legged frog breeding habitat would be impacted. Although no occupied California red-legged frog breeding habitat is known to occur within the project boundaries, conclusive evidence that red-legged frogs do not breed on the project site is not provided. The species is known to breed on the greater Sargent Ranch property and surveys were last conducted over 16 years ago in 2000-2001. In addition, it is not clear that all potentially suitable habitat within the project boundaries has been surveyed. Further, the statement on page 51 of the report, which indicates that the recent drought may have knocked down bullfrog and fish populations in ponds that did not support the tiger salamander at the

time surveys were conducted, making them more suitable for California tiger salamander breeding, is also true for the California red-legged frog. However, the location of such ponds in regards to proposed project impact areas is unknown. Given the presence of ostensibly suitable aquatic habitat on the project site and the known presence of California red-legged frogs, it is our conclusion that suitable California red-legged frog breeding habitat could be lost as a result of project implementation, as well as upland habitat, and additional mitigation for impacts on breeding habitat is warranted. However, for the reasons outlined above, the amount of suitable California red-legged frog breeding habitat that would be impacted cannot be determined at this time.

We assume that California red-legged frogs could occur virtually anywhere on the project site. Therefore, all impacted natural habitat should be considered impacted California red-legged frog habitat and the project is expected to result in the loss of 297.73 acres of suitable habitat for this species. Proposed mitigation includes avoidance, minimization, and compensation via preservation of lands on the Sargent Ranch Property, including 259 acres of grasslands, approximately 46 acres of coast live oak forest and mixed oak forest, approximately 92 acres of scrub and chaparral habitats (which, at best, are expected to provide low quality habitat for the California red-legged frog), and 1.0 acre of seasonal wetland (398 acres total).

It is our opinion that the proposed mitigation is not sufficient to reduce impacts on upland habitat to a less-than-significant level. Further, mitigation for impacts on suitable breeding habitat is warranted. Therefore, we recommend the habitat compensation measure outlined above for the California tiger salamander also be implemented for the California red-legged frog to reduce impacts resulting from the proposed project to a less-than-significant level.

- Pg. 78, Impact Statement 3.3.4, Potential Impacts to Western Pond Turtles – Impact statement 3.3.4 correctly concludes that construction of the access road over Sargent Creek during Phase 1 could result in harm or mortality of individual western pond turtles if construction occurs during the wet season. However, the impact statement does not mention that similar impacts could occur due to the construction of the proposed bridge over Tar Creek. The proposed mitigation is adequate to reduce this impact to a less-than-significant level.

- Pg. 79, Impact Statement 3.3.5, Potential Impacts to Burrowing Owls – The impact statement indicates that burrowing owls have not been recorded nesting on the greater Sargent Ranch property. However, Table 3 and the burrowing owl species account on pg. 56 indicates that nesting was observed on the northern portion of the greater Sargent Ranch property in 2015. This should be made consistent and clarified, as it has implications for the impact assessment.

- Pg. 82, Impact Statement 3.3.6, Disturbance to Nesting Raptors and Nesting Migratory Birds – The impact statement indicates that there are known occurrences of special-status birds such as the tricolored blackbird in very close proximity to the site but that the site itself lacks suitable nesting habitat. However, as stated above, the suitability of an area as tricolored blackbird nesting habitat can change dramatically at a site from one year to the next, and it's possible that one year of no grazing

could allow habitat to re-establish on the project site. Therefore, the project should implement VHP Condition 17 for the tricolored blackbird. This condition requires that an initial habitat survey be conducted to determine whether suitable habitat is present; such a survey should be conducted closer to the date of construction initiation than the surveys upon which the biological resources evaluation was based. For example, because Phases 3 and 4 would not be disturbed for 14-16 years, during which time habitat conditions could change, we recommend that surveys for suitable nesting habitat for the tricolored blackbird be conducted in the year in which mining activities are scheduled to start in a given area. If tricolored blackbird colonies are identified during the breeding season, Per Condition 17 covered activities will be prohibited within a 250-foot no-activity buffer zone around the outer edge of all hydric vegetation associated with the colony until the colony abandons the site.

Similarly, Table 3 indicates that suitable habitat for the least Bell's vireo is present along Tar Creek near the project area. Although we agree that the probability of least Bell's vireo occurrence on or adjacent to the project site is very low, the project should implement VHP Condition 16 given that the project intends to be consistent with the VHP. Condition 16 requires preconstruction surveys in appropriate habitat for the least Bell's vireo prior to construction activities. If occupied nests are identified, a qualified biologist will monitor construction to ensure that a 250-foot no-activity buffer around all active least Bell's vireo nests is maintained to ensure that covered activities do not affect nest success.

- Pg. 83, Impact Statement 3.3.7, Potential Impacts to Badgers – No comment
- Pg. 84, Impact Statement 3.3.9, Potential Impact to Special-Status Plant Species – Based on our review, we have concerns regarding the adequacy of this impact analysis for the following reasons, which are described in more detail below:
    - Lack of discussion of CRPR 2, 3, or 4 species, and whether any such species should be surveyed for
    - Lack of clarity on when special-status plant surveys would need to be conducted (i.e., a minimum of how many years before impacts would occur, especially for phased impacts)
    - Lack of specific discussion of how significant impacts will be defined following survey results

  As noted above, it is unclear whether CRPR 2, 3, or 4 species were actually considered for potential occurrence and possible CEQA significant impacts, because no such species were discussed in the detailed species occurrence table. We believe there could be CEQA-significant impacts to some lower ranked species, and that such plants could be present in impact areas on site. For example, vernal barley (*Hordeum intercedens*) is a CRPR 3.2 species, and it has been discovered that many prior collections were determined to be misidentified. This means that the species is likely rarer than originally thought, and this has led the CNPS to consider the species for future 1B rank, which is still pending. Vernal barley is found in vernal pools, but also within seasonally dry, saline-influenced streambeds and mesic saline-influenced flats similar to some areas on-site. Furthermore, if a population were found on site, it would be at the northwestern edge of the range for the species. As such, if a population on-site were lost, it would effectively reduce the range of vernal barley, one of the considerations for CEQA significance calls. Populations on the outer edges of ranges for species provide substantial contribution to those

species' genetic resources. We feel that this species should be added to the survey target list, as well as any additional CRPR 2, 3, or 4 species not presumed to be absent for lack of suitable habitat or other factors as discussed in detail in the species occurrence table.

H. T. Harvey & Associates notes that relocation attempts with rare plants are rarely successful over the long term and would not be considered as certain to provide mitigation for impacts in perpetuity compared to the other options such as avoidance, on-site preservation, or off-site preservation. We recommend the rare plant compensation measures be revised as shown below to reduce project impacts due to the loss of rare plant individuals and occupied habitat to a less-than-significant level.

Recommended Mitigation Measure – Compensation for Loss of Rare Plants

- Surveys. Prior to initial ground disturbance of any Phase or impact site related to the project, a focused survey in the appropriate bloom season for potentially occurring special-status plant species will be conducted in the impact area and a 50-foot survey buffer of ground disturbing impacts. Surveys must take place no more than four years before ground disturbance for that Phase or new impact area commences. Surveys are to be conducted in a year with near-average or above-average precipitation. The purpose of the survey will be to assess the presence or absence of the potentially occurring species. If none of the target species are found in the impact area or surrounding 50-foot buffer, then no further mitigation measures will apply. If any individual special-status plants are found in the impact area or 50-foot buffer, then the following additional mitigation measures will be implemented.
- Avoidance. In consultation with a qualified botanist or plant ecologist, and to the maximum extent feasible, the project will be designed to avoid substantial direct and indirect impacts (e.g. the establishment of an appropriate sized buffer of at least 50 feet or larger, as determined by a qualified botanist based on the avoided species and the type of nearby impacts).

Should the botanical surveys confirm that special-status plants are present on the site, the plants cannot be avoided, and less than 10% of either individuals or occupied area within the population will be impacted, the impact will be considered less than significant, and no further mitigation is necessary. If more than 10% of either individuals or occupied area within the population will be impacted, then the following mitigations will be implemented to reduce impacts to a less-than-significant level.

- On-site or Off-site Preservation. The on-site conservation easement area will be surveyed during the appropriate blooming season to determine whether populations of the species being significantly impacted by the project are also present within areas that will be preserved. If populations of the species are present on the conservation easement, mitigation would be provided through preservation and management of these populations. If such populations are not present on-site, then mitigation could be accommodated through preservation and management of an off-site population. In either case, habitat occupied by the affected species will be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one

plant preserved for each plant affected, and also at least one occupied acre preserved for each occupied acre affected), for any impact over the 10% significance threshold.

Areas proposed to be preserved as compensatory mitigation for special-status plant impacts must contain verified extant populations of the CRPR-ranked plants that would be impacted. Mitigation areas will be managed in perpetuity to encourage persistence and even expansion of the preserved target species. Mitigation lands cannot be located on land that is currently held publicly for resource protection unless substantial enhancement of habitat quality will be achieved by the mitigation activities. The mitigation habitat will be of equal or greater habitat quality compared to the impacted areas, as determined by a qualified plant ecologist, in terms of soil features, extent of disturbance, vegetation structure, and dominant species composition, and will contain at least as many individuals of the species as are impacted by project activities. The permanent protection and management of mitigation lands will be ensured through an appropriate mechanism, such as a conservation easement or fee title purchase. A HMMP will be developed and implemented for the mitigation lands. That plan will include, at a minimum, the following information:

- a summary of habitat impacts and the proposed mitigation;
- a description of the location and boundaries of the mitigation site and description of existing site conditions;
- a description of measures to be undertaken to enhance (e.g., through focused management that may include removal of invasive species in adjacent suitable but currently unoccupied habitat) the mitigation site for the focal special-status species;
- a description of measures to transplant individual plants or seeds from the impact area to the mitigation site, if appropriate (which will be determined by a qualified plant or restoration ecologist);
- proposed management activities to maintain high-quality habitat conditions for the focal species;
- a description of habitat and species monitoring measures on the mitigation site, including specific, objective final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc. At a minimum, performance criteria will include demonstration that any plant population fluctuations over the monitoring period do not indicate a downward trajectory in terms of reduction in numbers and/or occupied area for the preserved mitigation population that can be attributed to management (i.e., that are not the result of local weather patterns, as determined by monitoring of a nearby reference population, or other factors unrelated to management); and
- contingency measures for mitigation elements that do not meet performance criteria.

The HMMP will be prepared by a qualified plant or restoration ecologist. Approval of the HMMP by the County will be required before the Project impact occurs.

- Pg. 87, Impact Statement 3.3.10, Potential Impacts to Riparian Habitat and Other Sensitive Natural Communities Including Federally Protected Wetlands – Based on our review, we have concerns regarding the adequacy of this impact analysis for the following reasons, which are described in more detail below:
    - Because likely jurisdictional features and land cover types such as mixed riparian woodland and forest have not been called out by this analysis, the extent and magnitude of impacts to riparian habitat, wetlands, and waters appears to be lower than what would actually occur under the project
    - The impacts to Tar Creek and its riparian canopy resulting from the project crossing are not analyzed

  Several features, such as the stockpile drainage and possibly its tributaries and potential nearby seep wetlands, "erosional gullies" that are tributaries to intermittent drainage 3, possible wetlands occurring on the east bench of Sargent Creek, and riparian woodlands associated with the Phase 3 and 4 drainages are not depicted on the project impact maps or discussed. The discussion of impacts describes the Phase 3 and 4 drainage as being devoid of riparian woody vegetation, which is not consistent with our observations, as several trees are rooted within the bed and banks of the drainages and their tributaries. As noted previously, we also believe the RWQCB will consider all areas of streams up to top of bank to be jurisdictional as waters of the State. Similarly, CDFW (and the VHP) would consider the outer extent of riparian canopy (as defined by trees rooted within bed and banks) to form the outer boundary of their riparian jurisdiction, which is inconsistent with the discussion of riparian jurisdiction in the impact statement. Therefore, it is not clear in this analysis that the project is preserving sufficient linear footage and area of drainages to compensate for these impacts and still allow only a 1:1 (impact area or length to mitigation area or length) ratio as sufficient for mitigation to a less than significant level. (However, we agree that 1:1 would likely be sufficient for wetlands if credits we purchased at an approved wetland mitigation bank prior to impacts occurring, though we know of no approved mitigation banks for stream or riparian habitat credits).

  Tar Creek is a steelhead stream and as such impacts to this stream should be carefully analyzed. As no detailed bridge design yet exists, it is possible that activities from bridge constriction within or near the creek could impact steelhead, for example dewatering or pile driving.

  Pg. 91, Impact Statement 3.3.11, Potential Impacts to Western Red Bat, Pallid Bat, and Other Special-Status and Non-Special-Status Roosting Bats – Based on our review, we have concerns with the lack of compensation proposed for potential loss of a pallid bat maternity roost.

  Impact statement 3.3.11 indicates that oak trees on the site provide potential roosting habitat for foliage- and cavity-roosting bats including special-status bats such as the western red bat (*Lasiurus blossevillii*) and pallid bat (*Antrozous pallidus*), and concludes that loss of maternal colonies of either

special-status or non-special-status bat species due to tree removal would be considered a significant impact of the project. Proposed mitigation involves a preconstruction survey and, if necessary, eviction of the bats outside of the hibernation and maternity season. However, compensation for loss of roosting habitat is not required.

We do not think that loss of roosts of any potentially occurring bat other than pallid bat would be considered significant under CEQA on this project. However, loss of an occupied pallid bat maternity roost could result in a substantial impact on the species' population because the number of known maternity roosts (and therefore, the availability of roosts that pallid bats find suitable) are limited locally and regionally. Therefore, it is our opinion that the following measure should be implemented to reduce potential impacts on pallid bats due to loss of occupied roosting habitat to a less-than-significant level.

Recommended Mitigation Measure – Provide Alternate Roost

If a tree or structure containing a pallid bat maternity roost is to be removed, a qualified biologist will design and determine an appropriate location for an alternative roost structure, based on the location of the original roost and habitat conditions in the vicinity. The roost structure will be built to specifications as determined by a qualified biologist, or it may be purchased from an appropriate vendor. The structure will be placed as close to the impacted roost site as feasible. The applicant will monitor the roost for up to three years (or until occupancy is determined, whichever occurs first) to determine use by bats and after Year 3, submit a report verifying monitoring results to the County.

- Pg. 92, Impact Statement 3.3.12, Potential Impacts to Special-Status Animal Species – See comments regarding Impact Statement 3.3.6. In addition, potential impacts on the yellow warbler, Bryant's savannah sparrow, and grasshopper sparrow should be discussed. The project is not expected to result in significant impacts on the yellow warbler due to the marginal quality of the habitat on the project site and the project's limited impacts on riparian habitat. The project is also not expected to result in significant impacts on the Bryant's savannah sparrow or grasshopper sparrow due to the regional abundance and availability of suitable grassland habitat, and consequently the relatively low proportion of regional populations of these species that could be impacted.
- Pg. 93, Impact Statement 3.3.13, Loss of Habitat for Non-Special-Status Native Wildlife – No comment
- Pg. 94, Impact Statement 3.3.14, Interference with the Movement of Native Wildlife – As noted above, the project site is located within an area of important habitat connectivity for wildlife, and it is our opinion that a much more thorough analysis of the potential impacts of the project on wildlife movement is needed. The analysis should take into account all the major movement pathways (Gabilans – Santa Cruz, Gabilans/Santa Cruz – Diablo Range via Pajaro River). For example, additional information (e.g., height above ground) regarding the design of the proposed conveyor belt is needed to determine whether it would have the potential to block animals attempting to access Sargent Creek from the east or animals moving east to west through the site. In addition, an analysis

of the potential for the project to cut off or substantially impede the ability of wildlife to access some of the important Highway 101 crossings should be included. H. T. Harvey & Associates conducted an extensive analysis of potential project impacts on wildlife linkages in this region due to the Highway 101 Improvement Project and could bring this experience to bear on the proposed project if requested.

- Pg. 95, Impact Statement 3.3.15, Conflict with Local Policies or Ordinances – No comment.
- Pg. 95, Impact Statement 3.3.16, Degradation of Water Quality in Seasonal Creeks, Reservoirs, and Downstream Waters – It is unclear whether the drainages within Phases 3, 4, and 1 would be avoided by 100 feet as described in this statement or filled or excavated by project activities. This should be clearly explained in impact statement 3.3.10., which currently simply describes these features (comprising 6,000 linear feet according to the current statement, though see comments on statement 3.3.10 which would affect this number) as being impacted. As mentioned previously, compliance with VHP Condition 3 would also protect water quality within downstream habitats.
- Recommend Impact Statement – Potential Impacts on the South Central California Coast Steelhead

  As stated above, the report incorrectly concludes that the steelhead is absent from the project site. The South Central California Coast distinct population segment (DPS) is known to occur in Tar Creek, and Tar Creek is designated critical habitat for the species. Therefore, because the proposed project includes the construction of a bridge over Tar Creek, potential impacts on this species should be discussed.

  The project description indicates that the bridge would span the creek, but does not include any details regarding the construction process nor whether any impacts on riparian habitat along Tar Creek would occur. Therefore, an analysis of the potential direct and indirect impacts on the steelhead and appropriate mitigation, if necessary, is not possible at this time.

Appendix A. Vascular Plants of the Study Area

No comment

Appendix B. Terrestrial Vertebrate Species That Occur, or Potentially Occur on the Study Area

- Pgs. 111-118. We reviewed the list of potentially occurring species on the study area and recommend that the northern goshawk (*Accipiter gentilis*) not be listed as occurring, because it's a state-listed species (but isn't mentioned in Table 3) for which there are very few records anywhere in the region.

Appendix C. Minimization Measures for California Red-Legged Frog and California Tiger Salamander

No comment

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Appendix E.3
Biotic Evaluation (2017)

ESA

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

BIOTIC EVALUATION
SARGENT RANCH QUARRY

SANTA CLARA COUNTY, CALIFORNIA

By:

LIVE OAK ASSOCIATES, INC.

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Palo Alto, CA 94303

March 12, 2015 (Revised August 15, 2017) Project No. 662-08

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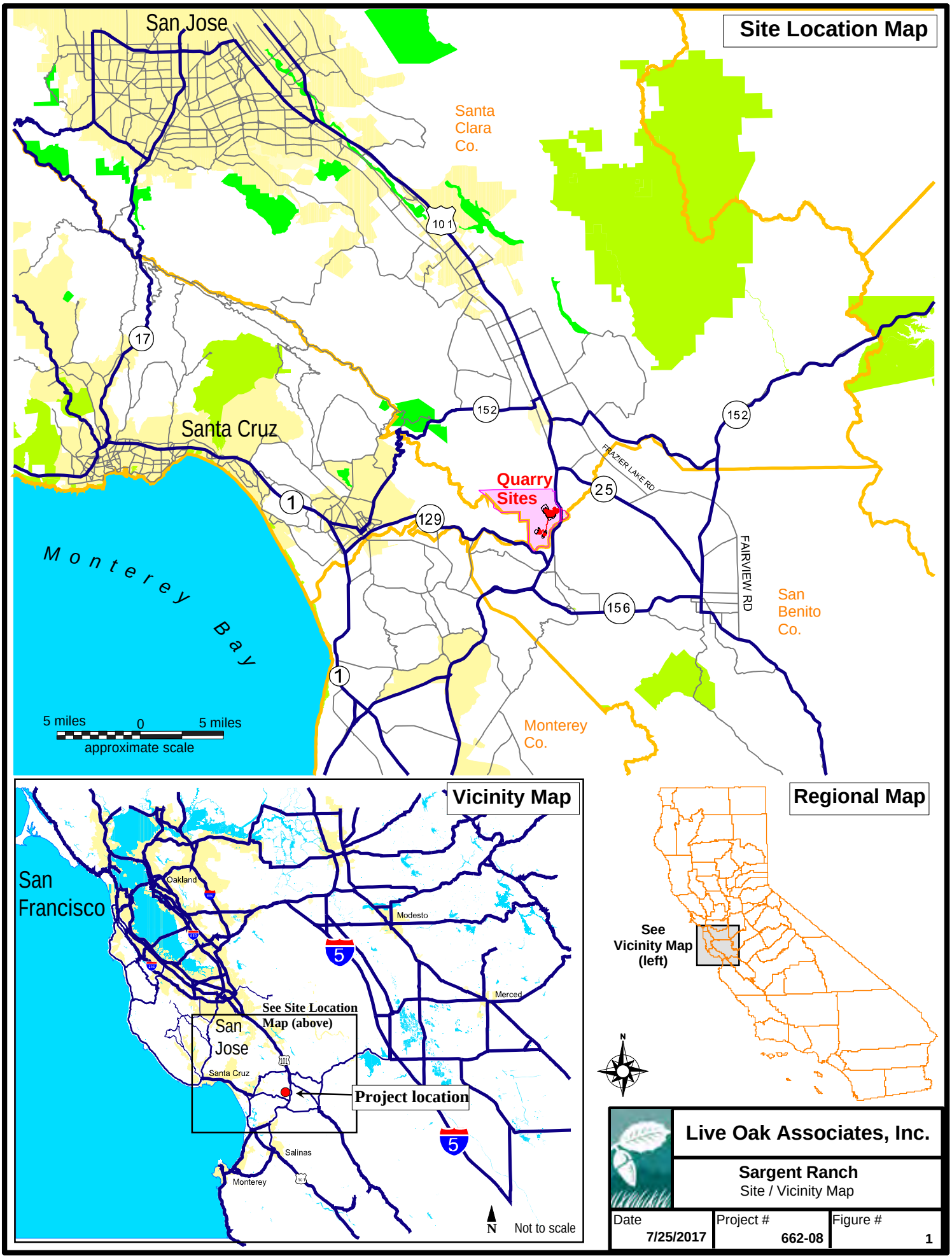
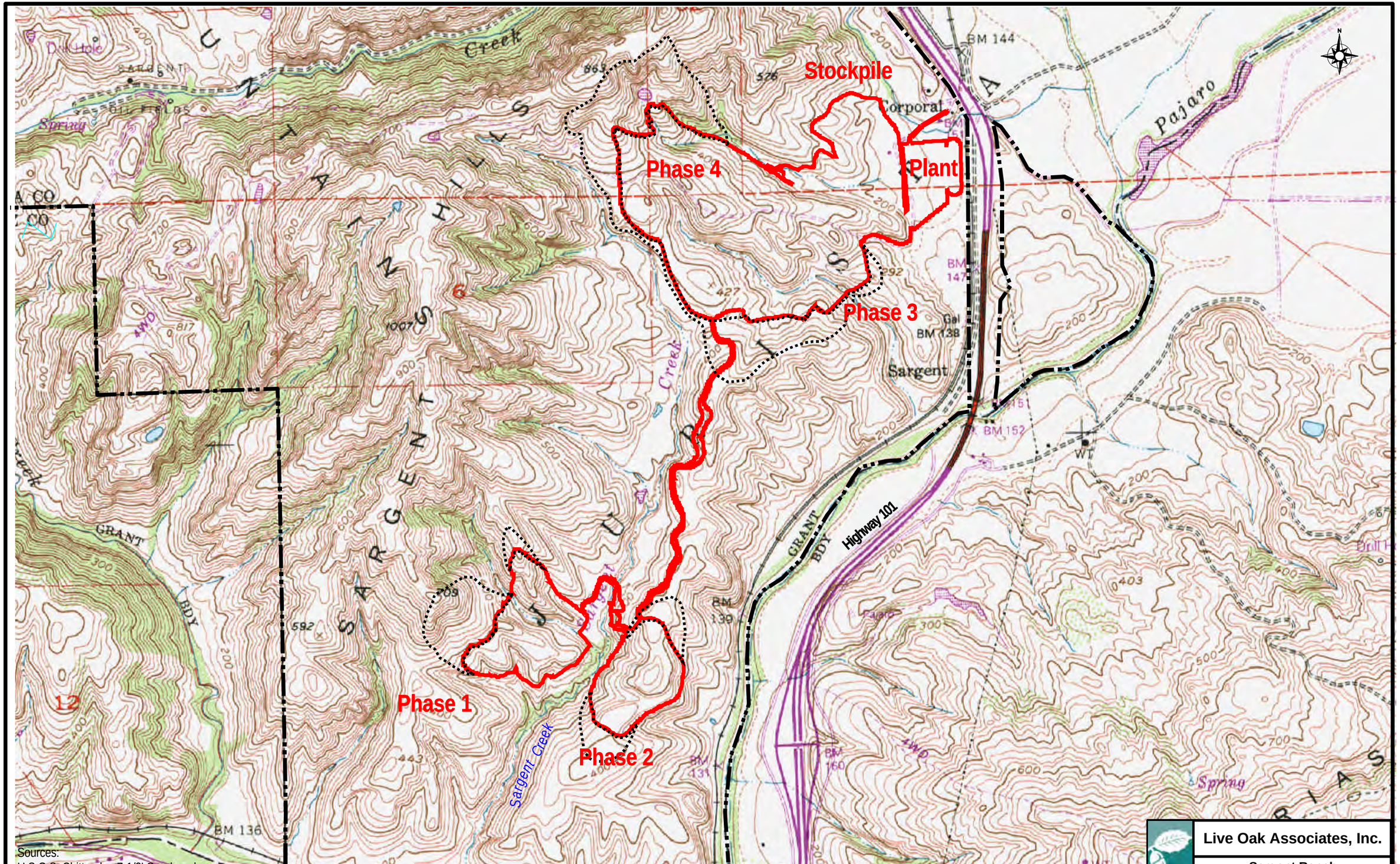
1.0 INTRODUCTION

Live Oak Associates, Inc. (LOA) has prepared the following report that describes the biological resources of an approximately 317-acre Sargent Ranch Quarry project site located on the greater Sargent Ranch property, south of the City of Gilroy, in Santa Clara County, California (Figure 1); and discusses potential impacts (based on significance criteria established in CEQA) to these resources resulting from the proposed quarry operation. Although the ranch itself encompasses over 6,400 acres, the focus of this effort was on the approximately 300 acres comprising the quarry project. The proposed quarry site is comprised of the processing plant, overburden stockpiles, and the four mining phase areas. The predominant habitat occurring within the footprints of the proposed quarry areas, hereafter referred to collectively as the "project site" or "study area", is California annual grassland; however coast live oak woodlands, several ephemeral drainages, and dry-farmed hay fields also occur within the proposed quarry footprints. Sargent Ranch occurs adjacent to and west of Highway 101 approximately one mile south of the Highway 101 and Highway 25 interchange. The ranch is bound to the east by Highway 101; to the south by the Pajaro River; and to the west and north by privately-owned rangeland. The main quarry site is located centrally near the ranch's eastern boundary and the other two smaller quarry sites are located in the southern portion of the ranch on either side of Sargent Creek. The ranch can be found on the Chittenden USGS 7.5 minute topographic quadrangle, at the intersection of Townships 11 and 12 South, and Ranges 3 and 4 East (Figure 2) on gently to steeply rolling foothills on the east side and at the southernmost extreme of the Santa Cruz Range. Elevations of the site range from a low of approximately 200 feet NGVD (National Geodetic Vertical Datum) in the northern portion of the main quarry site, to a high of approximately 500 feet NGVD in the southwestern portion of the main site. Elevations of the two smaller quarry areas range from about 200 feet to about 600 feet NGVD. The project site is currently used primarily for cattle grazing although dry-farmed oat hay fields occur on the eastern portion of the main quarry site.


Site Location Map
San Jose
Santa Clara Co.
101
17
Santa Cruz
152
152
Quarry Sites
25
FRAZIER LAKE RD
1
129
FAIRVIEW RD
156
San Benito Co.
Monterey Bay
1
Monterey Co.
5 miles
0
5 miles
approximate scale
Vicinity Map
San Francisco
Oakland
Modesto
5
Merced
See Site Location Map (above)
San Jose
Santa Cruz
Project location
5
Salinas
Monterey
N
Not to scale
Regional Map
See Vicinity Map (left)
N
Live Oak Associates, Inc.
Sargent Ranch
Site / Vicinity Map
Date
7/25/2017
Project #
662-08
Figure #
1



Sources:
U.S.G.S. Chittenden 7-1/2' Quadrangle

Live Oak Associates, Inc.

Sargent Ranch
U.S.G.S. Quadrangle

Date	Project #	Figure #
7/25/2017	662-08	2

This report analyzes potential impacts of future site development by the proposed Sargent Ranch Quarry mining operations on sensitive biotic resources, significant biotic habitats, regional fish and wildlife movement corridors, and existing local, state, and federal natural resource protection laws regulating land use. Provisions of the California Environmental Quality Act (CEQA), the federal Clean Water Act (CWA), the state and federal endangered species acts (CESA and FESA, respectively), California Fish and Wildlife Code, and California Water Code could greatly affect project costs, depending on the natural resources present on the site. The primary objectives of this report are as follows:

- Summarize all site-specific information related to existing biological resources;
- Make reasonable inferences about the biological resources that could occur on the site 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 biological resource issues specific to the site that could constrain future development; and
- Identify potential avoidance, minimization and mitigation options that could significantly reduce the magnitude of any likely impacts to biological resources associated with future site development.

Natural resource issues related to these state and federal laws have been identified in past planning studies conducted in the general project area, and it is reasonable to presume that such issues could be relevant to the subject parcels examined in this report. A number of state and federally listed animals, as well as other special status animal species (i.e., candidate species for listing and California species of special concern), have been documented within 20 miles of the project site. These species include state and/or federally listed species such as the California red-legged frog and California tiger salamander as well as California species of special concern including the burrowing owl. This report evaluates the site's suitability for these and other species.

CEQA is also concerned with project impact on riparian habitat, wildlife movement corridors, fish and wildlife habitat, and jurisdictional wetlands, as well as project compliance with special ordinances and state laws protecting regionally sensitive biotic resources, and approved habitat conservation plans. Therefore, this report addresses the relevance of each of these issues to eventual site development.

Jurisdictional wetlands cannot be graded or filled without a Clean Water Act permit issued by the USACE. Furthermore, many seasonal wetlands occurring in the area support plant and animal species that have been listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW). Such habitats supporting populations of federally listed animal species cannot be filled without a "take" permit issued by the USFWS.

CEQA is also concerned with a project's impacts on riparian habitat, wildlife movement corridors, fish and wildlife habitat, and jurisdictional wetlands, as well as project compliance with special ordinances and state laws protecting regionally sensitive biotic resources, and approved habitat conservation plans. Therefore, this report addresses the relevance of each of these issues to eventual site development.

The impact analysis discussed in Section 3.0 of this report, is based on the known and potential biotic resources of the study area as discussed in Section 2.0 of this report. The evaluation of resources of the site is largely based on survey work conducted on the site by Pacific North Western Biological (PNWB) during the period from June 2000 to May 2001 (PNWB 2001) and by LOA during the period from July 2004 through June 2014. However, other important sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFW 2016); (2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2016); (3) current listings from Special Plants and Animals (CDFW 2016); (4) numerous planning documents and biological studies for projects in the area, some of which have been prepared by LOA; and (5) manuals and references related to plants and animals of the region.

A number of state and federally listed species, as well as other special status species (i.e., candidate species for listing and California Species of Special Concern) have been documented in the vicinity of the project site; and some of these species are known to occur on Sargent Ranch itself, based on surveys completed by PNWB and LOA. These include animals such as the steelhead (*Oncorhynchus mykiss*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), western pond turtle (*Actinemys marmorata*), bald eagle (*Haliaeetus leucocephalus*), white-tailed kite (*Elanus leucurus*), prairie falcon (*Falco*

mexicanus), long-eared owl (*Asio otus*), burrowing owl (*Athene cunicularia*), least Bell's vireo (*Vireo bellii pursillus*), and American badger (*Taxidea taxus*); and plants such as saline clover (*Trifolium hydrophilum*), pink creamsacs (*Castilleja rubicundula* ssp. *rubicundula*), and Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*). This report evaluates the quarry project site's suitability as habitat for these and other species; impacts that may occur to these resources as a result of the project; and, where potentially significant impacts are identified, includes mitigations to lessen such impacts on these resources to a less-than-significant level where possible.

1.1 Project Description

The following project description is based on a project description provided by Verne Freeman (Freeman Associates 2016).

The proposed project, Sargent Quarry, is a pit mining operation that would occur on approximately 317 acres of the existing Sargent Ranch. The operation would occur on portions of Assessor's Parcel Numbers 810-38-014, -017 and -018. It is estimated that this site contains approximately 40 million tons of sand and gravel aggregate and that the operation could have a lifespan of 50 years or more based on consumption rates. However, the operator is requesting a 30-year term on the Conditional Use Permit.

The primary market for products produced from the mine (sand and gravel, which can be used for concrete and asphalt production, and rock) will be contractors and public agencies in the Santa Clara, San Benito and Monterey County areas.

Of the Project site's 317 acres, approximately 238 acres comprise the area of proposed mining. An additional 120 acres comprise the geotechnical setback areas. These areas are not proposed for mining but may be used if slopes need to be laid back at a more gradual angle to achieve stability. The proposed processing plant site is located near Highway 101 and is roughly 14 acres in size. Reclamation activities would be conducted on mining phases that are completed. The remaining portions of the site would not be utilized for mining, processing, or reclamation activities and would be maintained in their current conditions. The following sections describe

the mining plan, the processing plant facilities and proposed operations, and the proposed reclamation activities associated with the Project.

1.1.1 Mining Plan

Sand and gravel would be extracted from within the 238-acre mining area in four phases. Mining will be done in an open pit fashion with 2:1 side slopes with 10-foot benches every 30 vertical feet. Finished slopes will then be backfilled to 3:1 and revegetated. No underground mining will be necessary for this project. Mining is proposed to occur year-round. The total volume of material to be mined annually would be determined by the market demand. However, in the absence of other limitations, a maximum of 1,000,000 cubic yards of material would be mined in any single year.

The targeted materials to be mined are alluvial deposits of sand and gravel. Mined materials would be hauled to the proposed on-site aggregate processing plant for screening and limited crushing. The material would then be sold for a variety of construction-related uses. Waste materials (e.g., silts and clays) not suitable for construction or concrete uses would make up approximately 25 percent of the mined materials by volume. These materials would be separated and stockpiled in the two berms shown on Figures 10 thru 15 depending on the phase of mining.

1.1.2 Phase 1 and 2 Mining

Phases 1 and 2 are located in hills on both the east and west side of Sargent Creek. A conveyor belt will be used for transporting the aggregate and will be constructed along the west side of the Sargent Valley. A small access road will be constructed along the side of the conveyor belt for maintenance purposes. This alignment will run along the east side of the Sargent Valley and will stay above the valley floor and the creek and pond areas. Based on initial sales estimates, Phase 1 and 2 mining will last for approximately 10 to 15 years after operational start up. Material would be mined from the designated pit areas. The 1.6 mile long conveyor belt will be used to transport the material to the processing plant site. Phases 1 and 2 should be almost entirely hidden from view, shielded by a prominent ridgeline running along the east side of the Sargent Valley, and blocking views from Highway 101 and the rest of South County.

A berm will be constructed to serve as a visual shield to hide the processing area from drivers on Highway 101. The berm will be constructed with overburden from the Phase 1 area. Any topsoil will be stockpiled in a one separate location. Overburden or unsuitable materials from Phase 1 would be used to build the berm located to the east of the property boundary closest to Highway 101. At its highest point the berm will be 50 feet high and will serve to shield the processing plant site and operations from view from Highway 101. The berm will be designed to be natural in appearance and blend in with the native landforms. Once the front berm is built, a back berm will be constructed with any additional overburden. During the period of Phase 1 and 2 mining (10-15 years), trees and other viewshed-blocking vegetation will have time to grow and mature in time for the later phases of mining that have more visual impacts.

Topsoil will be kept separately and stockpiled. The Phase 1 pit will be constructed with side slopes of 2/1 with 10-foot benches every 40 vertical feet, resulting in an overall angle of 2.3/1 for the temporary slope.

Roughly 8,600,000 cubic yards will be excavated during Phase 1 and 2. The highest elevation of mining in the Phase 1 mining area is 360 feet above mean sea level (AMSL). The bottom of the lowest pit elevation will be 245 feet AMSL resulting in a maximum excavation depth of 125 feet.

Overburden from the Phase 1 and Phase 2 excavations will be hauled to the plant site area and used to build the visual screening berm along Highway 101 and the balance deposited in the western stockpile area. The topsoil stockpile from Phase 1 and Phase 2 will be stockpiled separately. Complete reclamation of the Phase 1 mining and Phase 2 areas will occur after their excavations are completed. Some of the overburden from Phase 1 and Phase 2 will be used to reconstruct the excavated slopes to a 3:1 permanent slope. Once completed, Phase 1 and Phase 2 areas will be reclaimed completely.

1.1.3 Phase 3 Mining

Portions of Phase 3 mining may be visible from Highway 101. Phase 3 mining will begin approximately in the period from year 14 through year 16. By that time the landscaping on the

front berm will have had time to grow in and will form a more effective shield from the view of drivers on the highway. Hills will be mined from west to east creating a disappearing hillside effect to further minimize visual impacts.

1.1.4 Phase 4 Mining

Material will be mined in a similar manner as Phase 1, from the west side of the hills to the east. Overburden and topsoil from Phase 2 will be used to reclaim portions of Phase 3. The westerly portion of Phase 4 will be excavated first starting at the highest elevation of 600 feet (AMSL to a minimum pit level of 200 feet AMSL). Once this upper slope has been excavated, revegetation will be initiated to minimize the time that visible slopes do not blend in with the natural ones. Phase 4 will produce approximately 20 million cubic yards (36 million tons) from this portion of the mining site.

Overburden from Phase 4 mining will be placed in the Phase 3 pit and will also be used to reconstruct the Phase 3 slopes to 3:1.

Mining operations would occur year-round. Mining and processing plant operations would typically occur from 7:00 a.m. to 4:30 p.m., Monday through Saturday. Extended processing plant operational hours would also be permitted to allow mining operations to operate at night, providing the mine operator the flexibility to respond to market conditions, nighttime public works projects, and emergency or special circumstances. Maintenance of mobile equipment and deliveries (e.g., fuels) would occur during normal operating hours.

The number of employees at the Project site would fluctuate based on extraction rates and processing plant production rates. Up to 15 full-time employees would be needed for mining and operations at the project site.

1.1.5 Mining and Processing Methods

Sand and gravel would be mined using conventional equipment, including excavators and scrapers. Excavated material would be hauled by truck, scraper, or overland conveyor to the processing plant site. There the material would be sized, washed, and sorted into stockpiles. Some materials may also be crushed and sorted into stockpile via radial stacker and conveyers.

Materials would be kept wet to minimize dust emissions. Sprinklers and water trucks would be used to control dust at multiple locations at the processing plant and on stockpiles.

1.1.6 Access and On-Site Circulation

Access to the site would be from Old Monterey road through the gated entrance. Access roads may be paved and would be maintained for Project operations. Trucks leaving the site traveling southbound would continue back along Old Monterey Road and then onto southbound Highway 101 via the stacking lane already in place. Trucks traveling northbound would travel under the Sargent undercrossing and onto northbound Highway 101 via a new acceleration lane installed by the quarry operator.

1.1.7 Vehicle Trips

The Project would generate vehicle trips associated with workers, materials transport and supplies that would be delivered to the site. Maximum daily one-way trips during a peak production day would be 910, while average daily one-way trips during a peak production day would be 341.

1.1.8 Drainage

During mining, runoff from quarry work areas would drain by sheet flow into drainage swales along the perimeter of the work area. Storm drainage from the site would be conveyed to settling ponds. Stormwater in the settling pond would ultimately percolate on-site or be reused for plant operations. Swales will buffer the overburden stockpiles and the plant area from Tar Creek to the west, and contain stormwater from the Project site from entering the creek.

1.1.9 Water Supply and Use

The daily and annual water consumption rates during a peak production year would be 86,300 and 17,260,000 gallons, respectively.

Aggregate processing would require water throughput of approximately 800 gallons per minute (384,000 gallons per day); however, 80 percent of the water would be recycled. Thus, 76,800 gallons would be pumped from the ground each day the plant is operating (up to approximately

200 days per year). A process water pond would be constructed within the processing plant site and would be used to retain water for reuse in aggregate processing.

The new onsite well will provide water for operations and dust control. A water truck would be used as needed to control dust on access roads and processing areas within the site. Approximately 86,300 gallons of water per day, or 17,260,000 gallons per year, would be used to control dust.

1.1.10 Utilities and Lighting

Existing electric power and telephone lines would be used for power needs for the Project or new service may be brought in to the site. Water will be obtained from a new on-site well, for both plant operations and drinking water for employees. A new private septic system will provide sanitary sewer facilities for the Project site. The septic system will be designed for a daily wastewater generation of 400 gallons per day. This is based on the Uniform Plumbing Code estimated wastewater generation of 25 gallons per day per employee.

Most mining will occur during the day and no lighting will be installed in the pit areas. Lights will be installed at the plant site, per MSHA regulations. Lighting may be on in the early morning and later evening hours during the winter months if production is required. Lighting will be contained to the plant site and will not create glare onto neighboring properties or Highway 101.

1.1.11 Equipment

Mining equipment includes scrapers, excavators, dozers, loaders, and dump haul trucks. Scrapers would be used to remove the surface material. Scrapers will collect material into their hoppers by lowering their blades as they traverse the site. When their hoppers are full, the scrapers would transport the material via the designated access routes from the mining area to the processing area located outside of the mining area. Scrapers, or a loader, would be used to place the material onto haul trucks for transport to the processing site.

Most equipment is diesel fueled, however natural gas powered equipment is now becoming available and may be purchased to lower overall greenhouse gas emissions and odors from the Project.

1.1.12 Noise

Sources of noise from the Project will be primarily the washing and screening plant and the construction equipment used for mining. There will be no blasting required for the mining and very little crushing done at the processing plant. The plant's main function is to separate the material by size using screens and to wash the material of its silts and clays. Rubber screens are used to minimize noise from the sizing operation and, in general, washing creates little noise. Noise from the back up horns and engines of the mining equipment does create noise that can carry. However, the nearest receptor for noise from the Project is a RV park more than a mile to the south and on the other side of a large hillside. Noise impacts will be studied as part of the project EIR.

1.1.13 Visual Impacts from the Project

Portions of the Project will be visible from both southbound and northbound Highway 101 at Sargent overcrossing. The visual impact to drivers can be seen for a few seconds while looking to the west from Highway 101. In order to minimize these impacts, two berms will be constructed to shield both the processing plant and the mining areas. The front berm will be built at the start of operations. This berm will be 50 feet high and serve to block both the views as well as dust and stormwater runoff from the Highway 101, Tar Creek undercrossing. The rear berm will serve to block the views into the mining area from Highway 101. Both these berms will serve as overburden stockpile areas and will be seeded to blend in with the surround natural landscape.

1.1.14 Dust Control

Water will be the primary means of dust control at the quarry. Two water trucks will be used to keep both exposed areas of mining and the plant areas wet to contain dust. Sprinklers will be used at the plant site to contain dust from stockpiles and processing equipment. The prevailing wind is from the west to the east, so the buffer hills between the mining areas and the eastern edge of the Sargent Ranch boundary may be impacted on windy days. Measures to control dust in addition to the use of water include keeping the mining areas limited to only the working area and using early revegetation to cover up previously mined areas. Use of dust palliatives may also be considered on haul roads and unpaved plant areas.

1.1.15 Conformance with the Santa Clara County HCP

To the greatest extent possible, the Project has been designed to conform to the standards outlined in the Santa Clara County Habitat Conservation Plan. Aside from the bridge and conveyor belt crossings, respectively, minimum 150-foot buffers have been maintained between the Project boundaries and the edges of Tar and Sargent Creeks. Unavoidable biological impacts are proposed to be mitigated by the dedication of a conservation easement area on the west side of the Sargent Valley. The Sargent Quarry project is not expected to be provided Take coverage from the HCP however, and will seek individual permits from the resource agencies for Take authority for the project impacts as may be required.

1.1.16 Slope Stability

Sierra Geotechnical Services performed a slope stability analysis that included recommendations for interim slopes of 2:1 with 10-foot benches every 30 vertical feet and 3:1 finished slopes upon reclamation of each mining phase. Recommendations have been included with the mine design.

In addition to the mining phases and other mining infrastructure discussed above, there may be a future need for additional areas adjacent to the mining phases that will serve as geotechnical setback areas. The future need for such additional areas cannot currently be determined, but may be required to engineer slopes to ensure stability.

1.1.17 Mining and Reclamation Plan

Reclamation of surface mines is required by SMARA (Surface Mining Area Recovery Act). SMARA requires mines to be reclaimed to a usable condition that is readily adaptable to a productive alternative land use and that creates no danger to public health or safety. Reclamation must be conducted consistent with the SMARA Article 9 Reclamation Standards (Title 14 California Code of Regulations [CCR] § 3700 et seq.) that contain specific performance requirements for various end uses (e.g., habitat, Prime Farmlands) and methods such as backfilling, revegetation, drainage, stream protection, topsoil salvage and tailing management. The Applicant prepared and will submit a proposed Reclamation Plan to the County.

Phase 1 and 2 Mining and Reclamation. An aggregate processing plant will be set up as well as an office, scale and maintenance buildings and an unpaved equipment parking area. A sediment

basin will be constructed to receive all surface water from the areas disturbed by mining via drainage ditches and swales. The first phase of mining work typically starts with stripping away surface vegetation and removing the topsoil and overburden in separate layers and stockpiling them separately. Phases 1 and 2 are approximately 1.5 miles from the processing plant so an overland conveyor will be constructed to transport material from these areas to the plant. Overburden will be used to construct the berm near the property boundary with Highway 101. The conveyor belt will be elevated on footings, approximately 4 to 5 feet off the ground. As sand and gravel are excavated from Phase 1 and 2 slopes, it will be placed into the conveyor for transport to the plant. Temporary slopes and benches will be constructed as part of mining; the final slope configuration will be constructed during reclamation that will occur when mining operations are completed. Revegetation Test Plots will be set up at the beginning of Phase 1 and will be located in areas that will not be disturbed by mining activities.

Phase 3 Mining and Reclamation. Total excavation amounts in Phase 3 will be 13, 200,000 cubic yards Phase 3 mining will begin by stripping away surface vegetation and removing topsoil and overburden in separate layers and stockpiling them separately. Overburden from the Phase 3 mining area will be stockpiled for later use in the rear berm area. As sand and gravel are excavated from Phase 3 area, it will be placed into a truck or onto a shorter conveyor run. Temporary slopes and benches will be constructed as part of mining; the final slope configuration will be constructed during final reclamation at the end of Phase 3.

Phase 4 Mining and Reclamation. Phase 4 will be the largest phase of the project with a total excavation of 16,300,000 cubic yards. Some of the overburden from Phase 4 will be used to construct the final slopes of Phase 3. The remainder of the Phase 4 overburden will be stockpiled and will be used to construct the final 3:1 slopes on both Phase 3 and the final reclamation of Phase 4.

Final Reclamation. When mining is completed in all Phases, then final reclamation of the quarry and plant site will commence. The stockpiled overburden and topsoil will be used to complete all final slopes for all phases and to refill the quarry floors. The remaining topsoil materials will be used to cap the quarry pits and to provide better soil for revegetation. Final elevations of the quarry pits will depend on the amount of fill material that is available. Benches no longer

needed for protection of quarry workers will be removed and the slopes restored to a 3:1 overall slope. Contour grading will be used on quarried slopes to conform to the natural appearance of the surrounding landscape. A few benches will be retained in the areas for oak tree planting to provide stability for the trees to grow. The width of these remaining benches may be reduced to provide a more natural looking reclaimed area. The plant site will be reclaimed by removing all equipment then re-grading the site and spreading the landscape berm out over the disturbed plant site area.

The final drainage ditches on the benches will be installed as these reclaimed slopes and benches are completed. Final reclamation work may include installation of an irrigation system to water the Oak tree seedlings. However, irrigation will only be installed if the Test Plot planting program determines that supplemental water improves the survival rate of the Oak Trees. All areas disturbed by mining will be revegetated after final reclamation grading which will include, hydroseeding the slopes with a gradient of 3:1 or more; drill or imprint seeding flatter slopes and benches, and planting oak tree masses in designated locations. The sediment basin will also be filled with the remaining soil material. The private driveway and internal access road will remain to provide access to the site. Other unnecessary haul roads and the quarry floor will be disked, graded to have positive drainage, resoiled and seeded.

Revegetation Performance Criteria. Revegetation performance would be measured in terms of percent cover and diversity. Planting, maintenance, and monitoring work would be directed toward achieving the following minimum success criteria by the end of the first 5 years:

For oak woodland/sage scrub plantings, at least 60 percent cover would exist, with at least four native species thriving. Invasive plant species would not be allowed to exceed 5 percent cover. Although minimum performance standards have been established only for the year 5 at each planting site, corrective action would be taken whenever the existing trend appears unlikely to produce the 5-year minimum criteria. Corrective action would take the form of replacing plants, installing additional biotechnical erosion control, and/or reseeding. If plant establishment is poor because of substandard planting techniques, inferior planting stock, or drought, the same species would be replaced. If a species does poorly in spite of favorable stock, technique, or weather conditions, plantings would be replaced by a more successful species within its plant association.

Financial Assurance. SMARA requires surface mining operators to obtain lead agency–approved financial assurances for the reclamation of mined lands. In the event of a default by the mine operator, financial assurance funds would be used by the County or the California Department of Conservation to reclaim the mine site. As a component of the Project, the Applicant would be required to provide the financial assurance necessary to reclaim disturbed surfaces within the Project site should operations end early.

Reclamation of the Project would be covered by financial assurances in accordance with the requirements of SMARA. The financial assurance cost estimate and the proposed financial assurance mechanism must be submitted to the County no later than 60 days before project activities begin.

1.1.18 Environmental Protection Measures

The Applicant proposes to implement the measures discussed below as components of the Project.

Dust Control. To control dust associated with earthmoving activities, the following activities would be undertaken by the Operator:

- Active construction areas and access routes would be watered at least twice daily. Frequency would be based on the type of operation, soil, and wind exposure.
- Grading activities would be restricted during periods of high wind (over 25 miles per hour) as directed by the Monterey Bay Air Pollution Control District.
- Haul trucks would maintain at least 2 feet of freeboard.
- Inactive storage piles would be covered.
- Wheel washers would be installed at the entrance to the site.
- Access roads, parking areas and staging areas would be swept daily with water sweepers.
- A publicly visible sign would be posted specifying the telephone number and person to contact regarding dust complaints. This person would respond to complaints and take corrective action within 48 hours. The phone number of the Monterey Bay Unified Air Pollution Control District will be posted on the sign.

Stockpile Erosion Management. The stockpiled material would be located in the processing area, or in locations shown as overburden stockpile locations. Stockpiles would be managed to minimize water and wind erosion.

Erosion Control Measures. Each season, before the winter rains, erosion control measures would be implemented to minimize erosion and vegetation loss during the winter rains. Inactive mining slopes, not yet in their final reclaimed grade, would be stabilized with erosion control seeding, as described above in the Reclamation Plan.

2.0 EXISTING CONDITIONS

The approximately 447-acre Sargent Ranch Quarry study area, inclusive of geotechnical setback areas, is located on the greater, approximately 6400-acre Sargent Ranch property, south of the City of Gilroy in Santa Clara County, California within foothills on the east side of the Santa Cruz Mountains. The proposed quarry site is comprised of quarry plant facilities, Phase 1 through Phase 4 mining areas, associated access roads, and a conveyer belt alignment that will move excavated materials from Phases 1 and 2 to the quarry plant site as described previously in the project description. Open rangeland borders the proposed project areas.

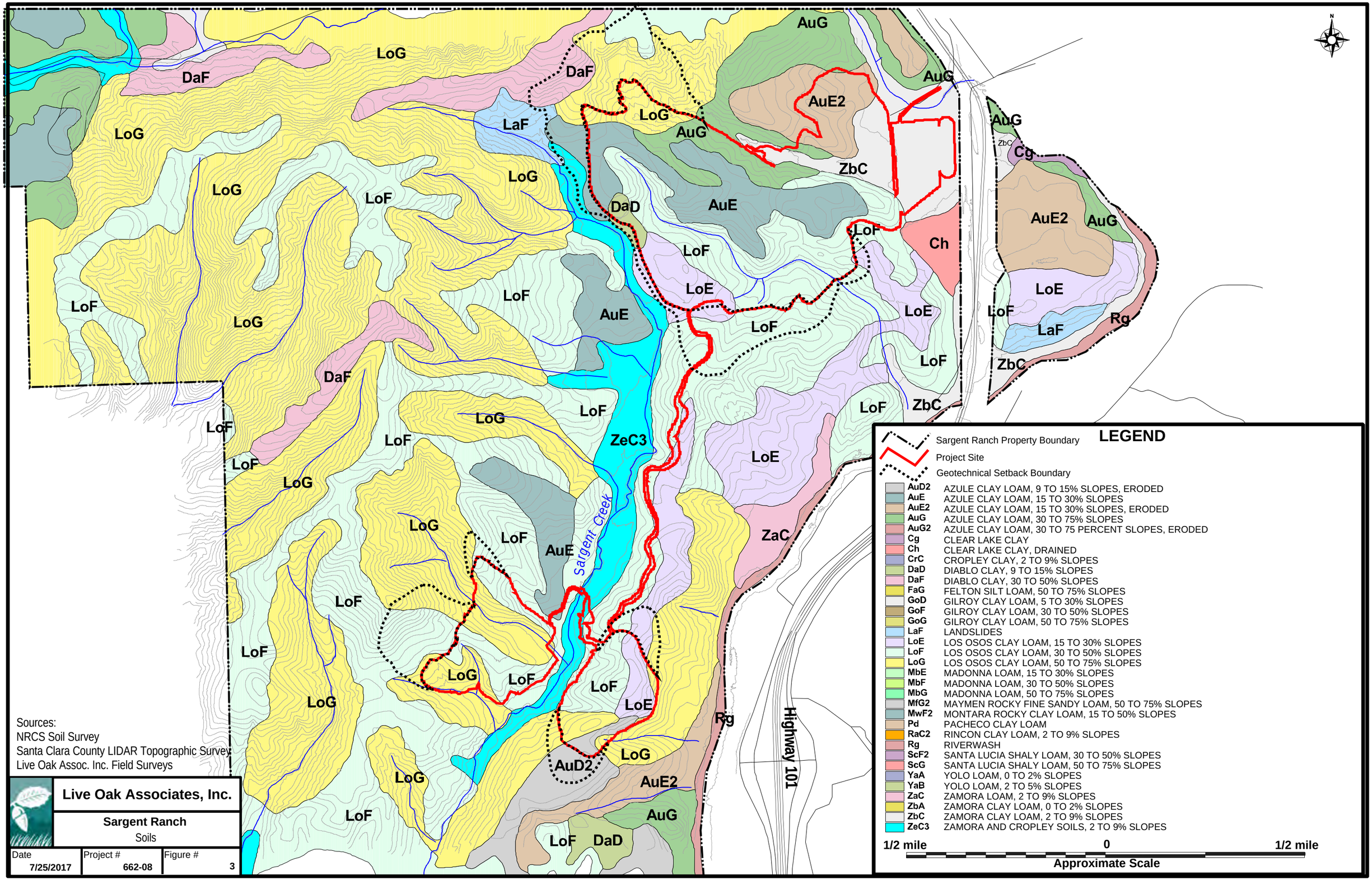
Elevations of the project site range from a high of approximately 600 feet National Geodetic Vertical Datum (NGVD) to a low of approximately 200 feet NGVD (Figure 2). Habitats of the project site are comprised primarily of California annual grassland; however, coast live oak woodland and dry-farmed hay fields also occur on the site. The primary use of the habitats of the quarry project site is cattle grazing. The habitats of the site are described in detail in Section 2.1 of this report.

Nine soil-mapping units have been identified on the site and these soils are described in greater detail in Table 1 and depicted in Figure 3. None of the soils of the site are considered hydric soils, i.e. soils that under appropriate hydrological conditions may support wetlands, however, hydric inclusions may occur. All of the soil types of the quarry site are considered well-drained. None of the soils of the site is a serpentine or alkaline soil, therefore, they would not be expected to support special status plant species that are endemic to serpentine or alkaline soils.

Table 1. Descriptions of soil mapping units of the study area (USDA NRCS Web Soil Survey).

Soil Series/Soil	Map Unit Symbol	Parent Material	Drainage Class	% Hydric Composition
ZAMORA SERIES Zamora clay loam, 2-9% slopes	ZbC	Alluvium	Well-drained	0
AZULE SERIES Azule clay loam, 15-30% slopes, eroded	AuE2	Alluvium	Well-drained	0
Azule clay loam, 15-30% slopes	AuE	Alluvium	Well-drained	0
Azule clay loam, 9-15% slopes, eroded	AuD2	Alluvium	Well-drained	0
Azule clay loam, 30-75% slopes	AuG	Alluvium	Well-drained	0
LOS OSOS SERIES Los Osos clay loam, 15-30% slopes	LoE	Residuum weathered from sandstone and shale	Well-drained	0
Los Osos clay loam, 30-50% slopes	LoF	Residuum weathered from sandstone and shale	Well-drained	0
Los Osos clay loam, 50-75% slopes	LoG	Residuum weathered from sandstone and shale	Well-drained	0
DIABLO SERIES Diablo clay, 9-15% slopes	DaD	Residuum weathered from sandstone	Well-drained	0
Diablo clay, 30-50% slopes	DaF	Residuum weathered from sandstone	Well-drained	0

http://soils.usda.gov/technical/classification/osd/index.html and
USDA Soil Conservation Service Soil Survey – Santa Clara County California


Sargent Creek
Highway 101
Sources:
NRCS Soil Survey
Santa Clara County LIDAR Topographic Survey
Live Oak Assoc. Inc. Field Surveys
LEGEND
Sargent Ranch Property Boundary
Project Site
Geotechnical Setback Boundary
AuD2 AZULE CLAY LOAM, 9 TO 15% SLOPES, ERODED
AuE AZULE CLAY LOAM, 15 TO 30% SLOPES
AuE2 AZULE CLAY LOAM, 15 TO 30% SLOPES, ERODED
AuG AZULE CLAY LOAM, 30 TO 75% SLOPES
AuG2 AZULE CLAY LOAM, 30 TO 75 PERCENT SLOPES, ERODED
Cg CLEAR LAKE CLAY
Ch CLEAR LAKE CLAY, DRAINED
CrC CROPLEY CLAY, 2 TO 9% SLOPES
DaD DIABLO CLAY, 9 TO 15% SLOPES
DaF DIABLO CLAY, 30 TO 50% SLOPES
FaG FELTON SILT LOAM, 50 TO 75% SLOPES
GoD GILROY CLAY LOAM, 5 TO 30% SLOPES
GoF GILROY CLAY LOAM, 30 TO 50% SLOPES
GoG GILROY CLAY LOAM, 50 TO 75% SLOPES
LaF LANDSLIDES
LoE LOS OSOS CLAY LOAM, 15 TO 30% SLOPES
LoF LOS OSOS CLAY LOAM, 30 TO 50% SLOPES
LoG LOS OSOS CLAY LOAM, 50 TO 75% SLOPES
MbE MADONNA LOAM, 15 TO 30% SLOPES
MbF MADONNA LOAM, 30 TO 50% SLOPES
MbG MADONNA LOAM, 50 TO 75% SLOPES
MfG2 MAYMEN ROCKY FINE SANDY LOAM, 50 TO 75% SLOPES
MwF2 MONTARA ROCKY CLAY LOAM, 15 TO 50% SLOPES
Pd PACHECO CLAY LOAM
RaC2 RINCON CLAY LOAM, 2 TO 9% SLOPES
Rg RIVERWASH
ScF2 SANTA LUCIA SHALY LOAM, 30 TO 50% SLOPES
ScG SANTA LUCIA SHALY LOAM, 50 TO 75% SLOPES
YaA YOLO LOAM, 0 TO 2% SLOPES
YaB YOLO LOAM, 2 TO 5% SLOPES
ZaC ZAMORA LOAM, 2 TO 9% SLOPES
ZbA ZAMORA CLAY LOAM, 0 TO 2% SLOPES
ZbC ZAMORA CLAY LOAM, 2 TO 9% SLOPES
ZeC3 ZAMORA AND CROPLEY SOILS, 2 TO 9% SLOPES
1/2 mile 0 1/2 mile
Approximate Scale
Live Oak Associates, Inc.
Sargent Ranch
Soils
Date 7/25/2017
Project # 662-08
Figure # 3

Annual precipitation in the general vicinity of the study area is 13-18 inches, most of which falls between the months of October and April. Virtually all precipitation falls in the form of rain. Storm water runoff readily infiltrates the soils of the site, but when field capacity has been reached, gravitational water drains into ephemeral drainages on the site and is eventually carried into the Pajaro River, which drains to Monterey Bay to the west of the site.

2.1 BIOTIC HABITATS/LAND USES

Four biotic habitats and two land uses, i.e. hay field and developed roads, have been identified on the project site (Table 2a, Figure 3) and six biotic habitats have been identified within areas that may be required as geotechnical setback areas (Table 2b, Figure 3). These habitats and land uses have been named pursuant to land cover types defined in the Santa Clara Valley Habitat Conservation Plan (HCP) (ICF Int. 2012). More detailed habitat descriptions are provided below. For the purposes of this report, the natural terrestrial communities are identified as California annual grassland; coast live oak forest and woodland; mixed riparian woodland and forest; pond; wetland seep; and seasonal wetland; and the two land uses are identified as grain, row crop, hay and pasture; and developed (paved and dirt roads). Two drainages with a defined bed and bank occur within the project site footprint within Phases 3 and 4 (Intermittent Channels 3 and 4), and additionally, the access roads and conveyor belt will require crossings of Tar and Sargent Creeks, respectively in the northern and southern portions of the site, although the majority of the conveyor belt feature will occur along the east side of Sargent Creek well outside of the riparian corridor. Lists of vascular plants observed on the greater 6400-acre Sargent Ranch property during LOA's 2004 through 2017 surveys is provided in Appendix A; and a list of terrestrial vertebrates observed on the greater ranch property and/or potentially present on the study area, based on both PNWB and LOA surveys, has been provided in Appendix B.

Table 2a: Habitats and Land Uses of the Project Site by Project Phase including Roads, Stockpile Areas, and Plant Site.

Habitats/Land Uses	Plant Site, Stockpiles, Access Roads, and Conveyor Belt	Phase 1 Acreages	Phase 2 Acreages	Phase 3 Acreages	Phase 4 Acreages	Total
California Annual Grassland	44.8	41.33	28.59	50.40	75.82	241.11
Coast Live Oak Forest and Woodland	7.13	0.00	0.00	11.37	14.75	33.24
Mixed Riparian Woodland and Forest	0.07	0.51	0.22	0.00	0.00	0.73
Grain, Row Crop, Hay and Pasture	22.80	0.00	0.0	0.00	0.00	22.65
Developed (existing dirt and paved roads)	0.23	0.00	0.00	0.00	0.00	0.23
Total	75.03	41.84	28.81	61.77	90.57	298.02
Creeks, Streams and Drainages	**Linear Feet of Channel**		**Linear Feet of Channel**	**Linear Feet of Channel**	**Linear Feet of Channel**	**Total**
Seasonal Drainages with Defined Bed and Bank (primarily HCP Category 2 streams)	1,922	899	0	2,010	1,739	6,570

Table 2b: Additional Habitats Occurring Within Geotechnical Setbacks of the Study Area by Project Phase.

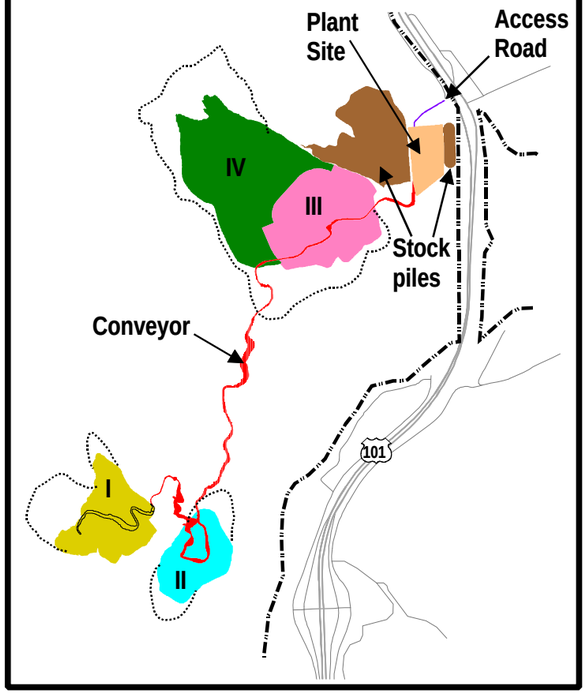
Habitats/Land Uses	Phase 1 Setback Acreages	Phase 2 Setback Acreages	Phase 3 and Phase 4 Setback Acreages	Total
California Annual Grassland	24.84	13.84	75.23	113.91
Coast Live Oak Forest and Woodland	0.00	0.00	5.99	5.99
Mixed Oak Woodland and Forest	0.15	0.00	0.00	0.15
Pond	0.00	0.00	0.34	0.34
Seasonal Wetland	0.00	0.00	0.05	0.05
Wetland Seep	0.00	0.00	0.03	0.03
Total	24.99	13.84	81.64	120.47
Creeks, Streams and Drainages	**Linear Feet of Channel**	**Linear Feet of Channel**	**Linear Feet of Channel**	**Total**
Seasonal Drainages with Defined Bed and Bank (primarily HCP Category 2 streams)	0.00	.00	115	115

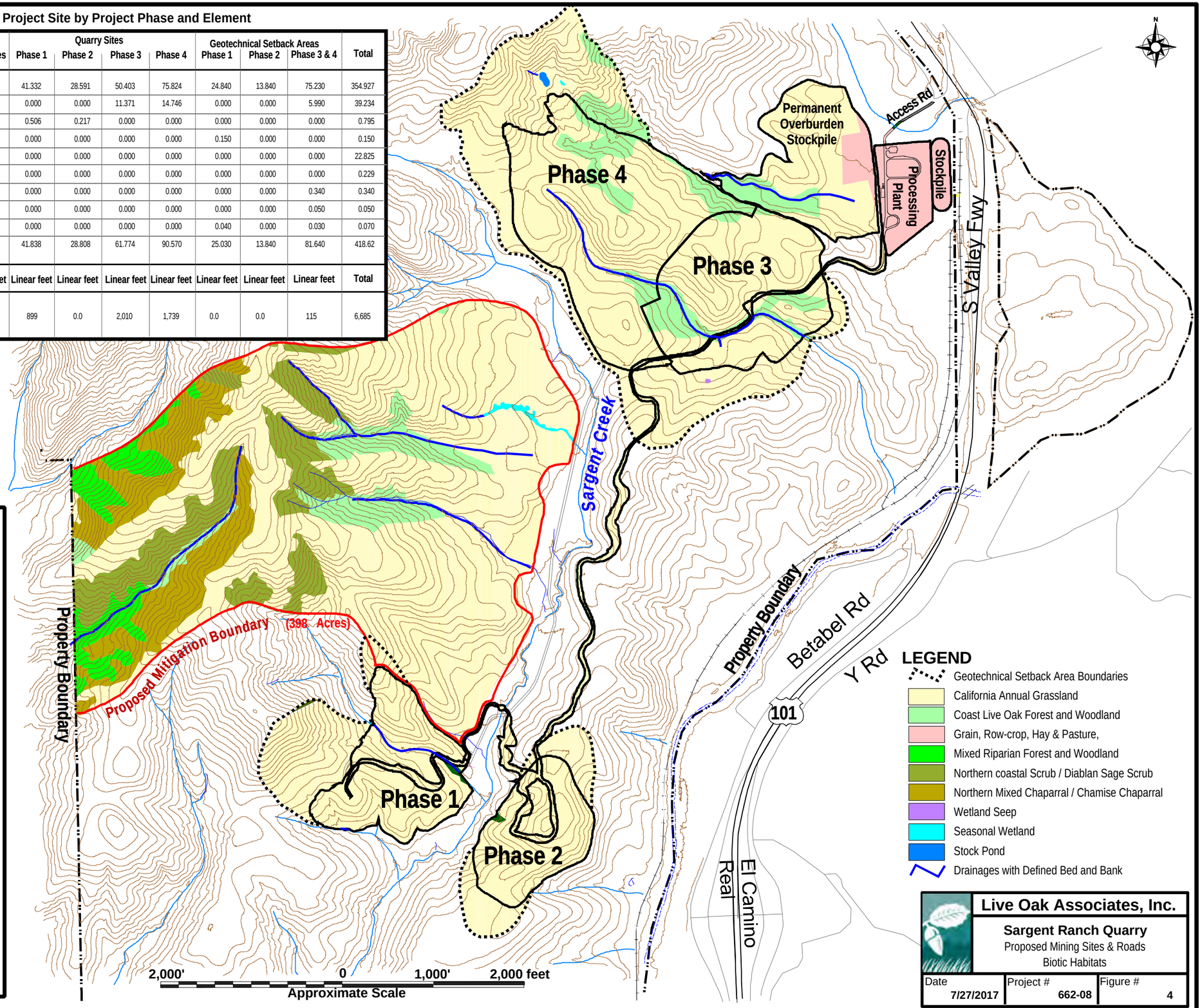
Table 2: Habitats and Land Uses of the Project Site by Project Phase and Element

Habitats / Land Uses	Plant Site	Access Road	Conveyor	Stockpiles	Quarry Sites				Geotechnical Setback Areas			Total
					Phase 1	Phase 2	Phase 3	Phase 4	Phase 1	Phase 2	Phase 3 & 4	
California Annual Grassland	0.044	0.000	13.691	31.132	41.332	28.591	50.403	75.824	24.840	13.840	75.230	354.927
Coast Live Oak Forest and Woodland	0.000	0.000	0.582	6.545	0.000	0.000	11.371	14.746	0.000	0.000	5.990	39.234
Mixed Riparian Woodland and Forest	0.000	0.072	0.000	0.000	0.506	0.217	0.000	0.000	0.000	0.000	0.000	0.795
Mixed Oak Woodland & Forest	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.150	0.000	0.000	0.150
Grain, Row Crop, Hay & Pasture	14.242	0.117	0.013	8.453	0.000	0.000	0.000	0.000	0.000	0.000	0.000	22.825
Developed (Existing Dirt Road)	0.000	0.229	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.229
Stock Pond	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.340	0.340
Seasonal Wetland	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050
Wetland Seep	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.040	0.000	0.030	0.070
Total	14.286	0.418	14.286	46.130	41.838	28.808	61.774	90.570	25.030	13.840	81.640	418.62
Creeks, Streams, and Drainages	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Total**
Seasonal Drainages with Defined Bed & Bank (primarily HCP Category 2 Streams)	0.0	25	66	1,831	899	0.0	2,010	1,739	0.0	0.0	115	6,685

Sources:
Triad Holmes Assoc.
Santa Clara County HCP Land Cover
Santa Clara County LIDAR Topographic Survey
Pacific North Western Biological Resources Consultants, Inc. 2001.
Biological Resources Assessment for the Proposed Sargent Ranch Conservation Bank Agreement

Areas Grouped in Table Above





Live Oak Associates, Inc.

Sargent Ranch Quarry
Proposed Mining Sites & Roads
Biotic Habitats

Date	Project #	Figure #
7/27/2017	662-08	4

2.1.1 California Annual Grassland

California annual grassland habitat is the most prevalent habitat on the project site. Grasslands on the site are dominated by non-native grass species such as wild oats *(Avena barbata and A. fatua),* ripgut (*Bromus diandrus*), soft chess *(Bromus hordeaceous),* foxtail barley *(Hordeum murinum* ssp. *leporinum),* and Italian rye grass *(Festuca perennis);* and weedy non-native forb species such as filarees (*Erodium spp*.), black mustard *(Brassica nigra),* Italian thistle *(Carduus pycnocephalus),* yellow star thistle *(Centaurea solstitialis),* summer mustard *(Hirschfeldia incana)* and milk thistle (*Silybum marianum*). Native forb species encountered within grasslands of the site included California poppy (*Eschscholzia californica*), common pepperweed (*Lepidium nitidum*), common fiddleneck (*Amsinckia intermedia*), Ithuriel's spear (*Triteleia laxa*), yarrow *(Achillea millifolium),* clarkia (*Clarkia sp.),* rattlesnake weed *(Daucus pusillus),* Pacific rye grass *(Elymus glaucus ssp. virescens),* lupines *(Lupinus spp.),* California melic *(Melica californica),* purple needle-grass *(Nassella pulchra)* and gray mules ears (*Wyethia helenioides).*

The grassland is expected to support a host of common grassland animal species. . Reptilian species observed or expected to occur onsite include western fence lizard (*Sceloporus occidentalis*), California alligator lizard (*Gerrhonotus multicarinatus*), western rattlesnake (*Crotalis viridis*), gopher snake (*Pituophis melanoleucus*), common king snake (*Lampropeltis getula*) and common garter snake (*Thamnophis sirtalis*).

This habitat provides foraging habitat for a number of birds. Bird species observed in the grassland areas and flying over the site include great blue heron (*Ardea herodias*), turkey vulture (*Cathartes aura*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), American kestrel (*Falco sparverius*), wild turkey (*Meleagris gallopavo*), California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), great horned owl *(Bubo virginianus*), burrowing owl (*Athene cunicularia*) (observed by PNWB and the resident rancher), Anna's hummingbird (*Calypte anna*), red-breasted sapsucker (*Sphyrapicus ruber*), black phoebe (*Sayornis nigricans*), ash-throated flycatcher (*Myiarchus tuberculifer*), western kingbird (*Tyrannus verticalis*), violet-green swallow (*Tachycineta thalassina*), cliff swallow (*Petrochelidon pyrrhonota*), scrub jay (*Aphelocoma coerulescens*), yellow-billed magpie (*Pica nuttalli*), common raven (*Corvus corax*), wrentit (*Chamaea fasciata*), plain

titmouse (*Parus inornatus*), chestnut-backed chickadee (*Parus rufescens*), bushtit (*Psaltriparus minimus*), Bewick's wren (*Thryomanes bewickii*), western bluebird (*Sialia mexicana*), California thrasher (*Toxostoma redivivum*), phainopepla (*Phainopepla nitens*), spotted towhee (*Pipilo erythrophthalmus*), dark-eyed junco (*Junco hyemalis*), western meadowlark (*Sturnella neglecta*), Brewer's blackbird (*Euphagus cyanocephalus*), Bullock's oriole (*Icterus galbula*), and house finch (*Carpodacus mexicanus*). Other resident and migratory avian species expected to occur in this habitat include common poorwill (*Phalaenoptilus nuttallii*), loggerhead shrike (*Lanius ludovicianus*), American crow (*Corvus brachyrhynchos*), Say's phoebe (*Sayornis saya*), American robin (*Turdus migratorius*), savannah sparrow (*Passerculus sandwichensis*), song sparrow (*Melospiza melodia*), red-winged black bird (*Agelaius phoeniceus*), brown-headed cowbird (*Molothrus ater*), purple finch (*Carpodacus purpureus*), lesser goldfinch (*Carduelis psaltria*), American goldfinch (*Carduelis tristis*), and house sparrow (*Passer domesticus*).

Small mammalian species that are known to occur, or would be expected to occur, in the grassland habitat include the California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*), pocket mouse (*Chaetodipus californicus*), western harvest mouse (*Reighrodontomys megalotis*), California vole (*Microtus californicus*), and the ornate shrew (*Sorex ornatus*).

Medium-sized and larger mammals that have been observed on the site include cottontail (*Sylvilagus audubonii*), black-tailed hare (*Lepus californicus*), coyote (*Canis latrans*), native gray fox (*Urocyon cinereoargenteus*), American badger (observed by PNWB and the resident rancher), striped skunk (*Mephitis mephitis*), cougar (*Puma concolor*) (a large cougar was observed by LOA biologists in 2004), bobcat (*Felis rufus*), wild pig (*Sus scrofa*), and black-tailed deer (*Odocoileus hemionus columbianas*). Other medium-sized and larger mammals that might also be expected to occur on the site but that have not been directly observed include the Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and introduced red fox (*Vulpes vulpes*).

2.1.2 Coast Live Oak Forest and Woodland

Oak woodlands dominated by coast live oak (*Quercus agrifolia*) occur within the site's Phase 3 and Phase 4 areas, as well as within the permanent overburden stockpile area in the northern

portion of the site. This habitat type is primarily associated with Intermittent Drainage Channels 3 and 4 in . Coast live oak woodlands of the site generally have a relatively closed canopy and an understory that is either barren or covered by dense leaf litter, with very little herbaceous vegetation present.

Oak woodlands provide extremely important foraging, denning, nesting, cover, and roosting habitat for a variety of wildlife species. Root systems and woody debris contributes to the structural complexity of the woodland floor and provide foraging areas for small mammals, as well as microclimates suitable for a variety of amphibians and reptiles. Acorns are a valuable food source for many animal species, including the acorn woodpecker *(Melanerpes formicivorus),* California quail, wild turkey, western gray squirrel (*Sciurus griseus*), and black-tailed deer. Representative animal species of oak-dominated forests include arboreal salamander *(Aneides lugubris),* southern alligator lizard, common kingsnake, ringneck snake *(Diadophis punctatus),* western screech owl *(Otus kennicottii),* scrub jay, acorn woodpecker, western bluebird, opossum, and a variety of bat species including long-legged myotis (*Myotis volans*), hoary bat (*Lasiurus cinereus*), pallid bat (*Antrozous pallidus*), and western mastiff bat (*Eumops perotis*).

2.1.3 Grain, Row-crop, Hay & Pasture, Disked/Short-term Fallowed

Dry-farmed oat hay fields occur in the footprint of the proposed plant area in the eastern portion of the main quarry site near Highway 101. Vegetation similar to that occurring in annual grasslands as described above was observed to grow along the disturbed edges of the fields. Wildlife using adjacent habitats would be expected to also use this habitat for foraging and movement activities.

2.1.4 Mixed Riparian Woodland and Forest, Intermittent Drainages, Sargent Creek and Tar Creek, Stock Pond, Wetland and Seep

Unnamed intermittent drainages that may be considered HCP Category 2 streams occur on Phases 1, 3 and 4 of the site, as well as on the Phase 3 and Phase 4 geotechnical setback areas. The on-site drainages were identified by LOA during a formal delineation effort that was conducted on the project site in fall 2016 and a verification site visit was conducted with USACE

in April 2017. Drainages and other hydrologic features included in Figure 4 are representative of what the USACE claimed as jurisdictional during the April verification site visit. The USACE did not claim several ephemeral and erosional features that were present on Phase 1 and Phase 3 as these features lacked an OHW mark on opposing banks. An additional formal delineation was conducted in June 2017 on areas that potentially may be required as geotechnical setback areas (Figure 4). These latter areas have not yet been verified by USACE. The intermittent channels exhibited a defined bed and bank and evidence of an Ordinary High Water mark on opposing banks, and, as such, would likely be considered jurisdictional by USACE, RWQCB and CDFW. Vegetation within the intermittent drainages of the site was observed to be generally similar to that habitat found in the surrounding upland California annual grassland habitats and species utilizing these features would be similar to those using grasslands of the site. These unnamed intermittent features would only have water present during and immediately after rainstorm events and therefore would not be a significant source of seasonal water for native plants and wildlife. These features would not likely provide habitat values in excess of those provided by surrounding upland habitats.

The alignment of the access road and conveyer belt that will be constructed for Phase 1, as currently planned, will be constructed on the east side of Sargent Creek, and will traverse the creek by way of a culvert crossing in one location in the southern portion of the site. Sargent Creek is an intermittent creek and the reach of the creek present within the conveyor belt alignment would likely be considered a Category 2 stream under the HCP. Sargent Creek does not support significant stands of woody riparian vegetation except at the very lowest reaches near the southern boundary of the greater Sargent Ranch property; however, discrete stands of red and arroyo willows (*Salix laevigata* and *S. lasiolepis*, respectively) and mulefat (*Baccharis salicifolia*) do occur at various locations along the middle and upper reaches of the creek, including at points where ephemeral drainages tie into Sargent Creek near Phase 1 where a small amount of this habitat will be impacted by the project. While significant woody riparian vegetation is absent from most of the Sargent Creek corridor, the creek channel was observed to support herbaceous wetland vegetation throughout most of its reach on the Sargent Ranch property, including but not limited to, Mediterranean barley (*Hordeum marinum* ssp.

gussoneanum), slough sedge (*Carex obnupta*), spike rush (*Eleocharis macrostachya*), and tall flat sedge (*Cyperus eragrostis*).

The main access road to the quarry will traverse Tar Creek in the northeastern portion of the project site in the location of an existing at-grade creek crossing. The crossing will consist of a free span bridge with footings placed outside of the wetted channel of the creek (pers. comm. Verne Freeman). Tar Creek flows all year long during years of average to above average rainfall and would be considered a Category 1 stream under the HCP. Although woody riparian vegetation is absent from the at-grade crossing itself, willow riparian habitat occurs immediately adjacent to the at-grade crossing both upstream and downstream and the access road crossing, once plans are finalized, may impact a small amount of this mixed riparian woodland habitat, estimated at less than 0.01 acre.

Steelhead (*Oncorhynchus mykiss*) have been observed to migrate up and spawn in Tar Creek in years with adequate rainfall. Although the reach of the creek within the footprint of the proposed main access road crossing does not provide spawning habitat for this species, this species likely migrates through this reach during wet years.

Amphibian species observed within Sargent Creek and Tar Creek during LOA surveys included Pacific tree frogs (*Hylla regilla*), California red-legged frogs (*Rana draytonii*) and western toads (*Anaxyrus boreas*). California red-legged frogs are known to breed in stock ponds within the creek's watershed on the greater Sargent Ranch property and were found to be abundant within ponds of the ranch in the vicinity of the project site during surveys conducted in May 2017. Although western pond turtles have never been documented in Tar Creek or Sargent Creek or in nearby stock ponds, potentially western pond turtles may occur in these creeks during the wet season, including areas that may be impacted by the conveyor belt crossing and proposed main access road crossing.

Avian species observed in Sargent Creek during LOA surveys foraging for amphibian and invertebrate prey during the wet season include great blue herons (*Ardea herodias*), great egrets (*Ardea alba*), and snowy egrets (*Egretta thula*).

Both Sargent and Tar Creek likely function as important movement corridors for several mammal species that have been observed within its vicinity during LOA surveys, including but not limited to, striped skunks, gray fox, bobcat, cougar, wild pig and black-tailed deer. Sargent and Tar Creek also likely provide an important seasonal and year-round, respectively, supply of water for local wildlife.

Although never observed on the ranch previously, stick nests of the San Francisco dusky-footed woodrat, a state species of concern, were observed to be present within riparian woodlands of Tar Creek in the immediate vicinity of the proposed main access road crossing during the 2016 wetland delineation.

In addition to the above hydrologic features, a stock pond, seasonal wetland, and seep spring occur on areas that potentially may be needed as geotechnical setback areas for Phases 3 and 4. The stock pond occurs northwest of Phase 4. This is a relatively large and deep pond (0.3 acres) which supports herbaceous wetland vegetation at its fringes and arroyo willows (*Salix lasiolepis*) at the upper end where seasonal flows enter the pond via a short reach of intermittent channel. During a delineation survey in June 2017, juvenile CRLF were observed at the edges of the pond and juvenile California newts were observed within the pond. The pond likely provides a near year round source of water for wildlife using surrounding habitats as well as breeding habitat for the aforementioned amphibians.

A small (0.05 acre) seasonal wetland occurs immediately east of the stock pond. It appears this feature was created as a result of overflow from the stock pond. This feature was completely dry during the June 2017 delineation survey but was observed to support herbaceous wetland vegetation and met the USACE criteria for jurisdictional wetlands.

Lastly, a small (0.03) seep spring occurs on the hillside south of Phase 3. This feature supports wetland vegetation including some cattails (Typha sp.) and other herbaceous wetland species. During the June delineation survey, it only supported a few inches of water, but it appears to be a perennial or semi-perennial seep.

2.2 MOVEMENT CORRIDORS

Ecologists and conservation biologists have expended a great deal of energy since the early 1980's advocating the protection and restoration of landscape linkages among suitable habitat patches. Movement corridors or landscape linkages are usually linear habitats that connect two or more habitat patches (Harris and Gallager 1989), providing assumed benefits to the species by reducing inbreeding depression, and increasing the potential for recolonization of habitat patches. Some researchers have even demonstrated that poor quality corridors can still provide some benefit to the species that use them (Beier 1996).

Beier and Noss (1998) evaluated the claims of the efficacy of wildlife corridors of 32 scientific papers. In general, these authors believed that the utility of corridors was demonstrated in fewer than half of the reviewed papers, and they believed that study design played a role in whether or not given corridors were successful. Examples of well-designed studies supported the value of corridors. They believed, however, that connectivity questions make sense only in terms "of a particular focal species and landscape." For example, volant (flying) species are less affected by barriers than small, slow moving species such as frogs or snakes (Beier and Noss 1998). In addition, large mammals such as carnivores that can move long distances in a single night (e.g., cougars) are more capable of making use of poor quality or inhospitable terrain than species that move more slowly and can easily fall prey to various predators or that are less able to avoid traffic or other anthropogenic effects (Beier 1996). Therefore, it is reasonable to conclude that landscape linkages, even poor ones, can be useful, especially for terrestrial species.

Therefore, while the importance of landscape linkages is well demonstrated in the scientific literature, the cautionary note of Beier and Noss (1998) that consideration of context and ecological scale are also of critical importance in evaluating linkages.

Habitat corridors are vital to terrestrial animals for connectivity between core habitat areas (i.e., larger intact habitat areas where species make their living). Connections between two or more core habitat areas help ensure that genetic diversity is maintained, thereby diminishing the probability of inbreeding depression and geographic extinctions. This is especially true in fragmented landscapes and the surrounding urbanized areas as found in the rural/urban matrix along the edges of the City of San Jose.

The quality of habitat within the corridors is important: "better" habitat consists of an area with a minimum of human interference (e.g., roads, homes, etc.) and is more desirable to more species than areas with sparse vegetation and high-density roads. 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.

Healthy riparian areas (supporting structural diversity, i.e., understory species to saplings to mature riparian trees) have a high biological value as they not only support a rich and diverse wildlife community but have also been shown to facilitate regional wildlife movement. Riparian areas can vary from tributaries winding through scrubland to densely vegetated riparian forests.

A riparian zone can be defined as an area that has a source of fresh water (e.g., rill, stream, river), a defined bank, and upland areas consisting of moist soils (e.g., wetter than would be expected simply do to seasonal precipitation). These areas support a characteristic suite of vegetative species, many of which are woody, that are adapted to moister soils. Such vegetation in the project region may include California buckeye (*Aesculus californica*), dogwood (*Cornus* sp.), California hazelnut (*Corylus cornuta* var. *californica*), elderberry (*Sambucus* sp.), Oregon ash (*Fraxinus latifolia*), walnut (*Juglans* sp.), California laurel (*Umbellularia californica*), toyon (*Heteromeles arbutifolia*), oaks (*Quercus* sp.), and willow (*Salix* sp.).

Beier and Loe (1992) noted five functions of corridors (rather than physical traits) that are relevant when conducting an analysis regarding the value of linkages. The following five functions should be used to evaluate the suitability of a given tract of land for use as a habitat corridor:

1.) Wide ranging mammals can migrate and find mates;
2.) Plants can propagate within the corridor and beyond;
3.) Genetic integrity can be maintained;
4.) Animals can use the corridor in response to environmental changes or a catastrophic event;
5.) Individuals can recolonize areas where local extinctions have occurred.

A corridor is "wide enough" when it meets these functions for the suite of animals in the area. It is important to note that landscape linkages are used differently by different species. For instance, medium to large mammals (or some bird species) may traverse a corridor in a matter of minutes or hours, while smaller mammals or other species may take a longer period of time to move through the same corridor (e.g., measured in days, weeks and even years). For example, an individual cougar may traverse the entire length of a long narrow corridor in an hour while travel of smaller species (such as rodent or rabbit species) may best be measured as gene flow within regional populations. These examples demonstrate that landscape linkages are not simply highways that animals use to move back and forth. While linkages may serve this purpose, they also allow for slower or more infrequent movement. Width and length must be considered in evaluating the value of a landscape linkage. A long narrow corridor would most likely only be useful to wide ranging animals such as cougars and coyotes when moving between core habitat areas.

To the extent practicable, conservation of linkages should address the needs of "passage species" (those species who typically use a corridor for the express purpose of moving from one intact area to another) *and* "corridor dwellers" (slow moving species such as plants and some amphibians and reptiles that require days or generations to move through the corridor).

While no detailed study of animal movements has been conducted for the quarry 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.

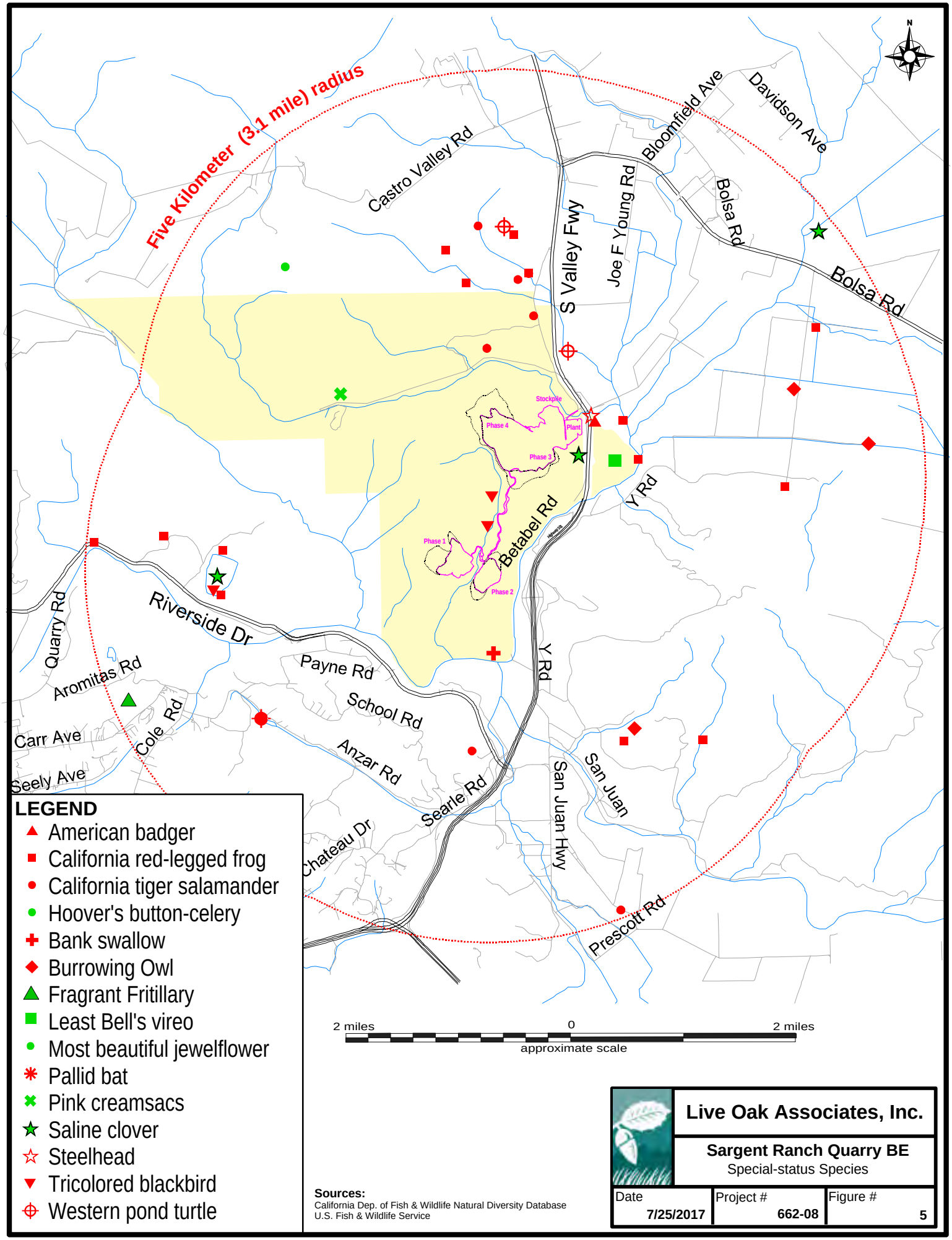
As noted in Section 2.1, a number of reptiles, birds, and mammals may use the project site as part of their home range and dispersal movements. Creeks and drainages are known to facilitate wildlife movement, and the two creek corridors that occur in proximity to portions of the project site, i.e. Sargent Creek and Tar Creek, as well as the riparian habitat associated with Intermittent Channels 3 and 4 on Phase 3 and 4 of the quarry site, likely provide important movement habitat for many native wildlife species travelling north-south and east-west across the study area. Ephemeral erosional features occurring within the footprints of the project, however, generally support vegetation that is undifferentiated from surrounding upland grassland habitats and as

such, these are not likely to function as anything but marginal movement corridors due to lack of significant woody vegetation cover.

2.3 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 and urban 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 sizable 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 California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2016). Collectively, these plants and animals are referred to as "special status species."

A number of special status plants and animals occur in the vicinity of the site (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 *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1988), *California Natural Diversity Data Base* (CDFW 2017), *Endangered and Threatened Wildlife and Plants* (USFWS 2017), *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2017), 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 onsite. Figure 5 depicts the location of special status species found by the California Natural Diversity Data Base (CNDDB) within a three mile radius of the site. It is important to note that the CNDDB is a volunteer database; therefore, it may not contain all known or gray literature records. In addition to those species documented in CNDDB, during a peer review of the Sargent Quarry BE, an additional handful of birds that are considered state species of special concern were identified for



LEGEND

- American badger
- California red-legged frog
- California tiger salamander
- Hoover's button-celery
- Bank swallow
- Burrowing Owl
- Fragrant Fritillary
- Least Bell's vireo
- Most beautiful jewelflower
- Pallid bat
- Pink creamsacs
- Saline clover
- Steelhead
- Tricolored blackbird
- Western pond turtle

Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service

Live Oak Associates, Inc.

Sargent Ranch Quarry BE
Special-status Species

Date	Project #	Figure #
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LEGEND

- Sargent Ranch Property Boundary
- Quarry Project Boundaries
- Geotechnical Setback Boundaries

On-site Species Observations

- CTS California Tiger Salamander
- CRLF California Red-legged Frog
- BF Bullfrog
- ETS Eastern Tiger Salamander
- WPT Western Pond Turtle
- Fish Fish

Habitats

- California Annual Grassland
- Coast Live Oak Forest and Woodland
- Coastal and Valley Freshwater Marsh
- Grain, Row-crop, Hay and Pasture, Disked / Short-term Fallowed
- Mixed Oak Woodland and Forest
- Mixed Riparian Forest and Woodland
- Northern Coastal Scrub / Diablan Sage Scrub
- Northern Mixed Chaparral / Chamise Chaparral
- Pond
- Redwood Forest
- Rural Residential
- Seasonal Wetland
- Serpentine Grassland
- Serpentine Seep
- Urban - Suburban
- Valley Oak Woodland
- Willow Riparian Forest and Scrub

Hydrology

- Drainages with defined bed and bank
- U.S.G.S. Blueline Drainages

Tick Creek
Sycamore Creek
Tar Creek
Sargent Creek
Highway 101
Overburden Stockpile
Processing Plant
Stockpile
Phase I
Phase II
Phase III
Phase IV
5,000' 0 5,000 feet
Approximate Scale

Sources:
Santa Clara County HCP Land Cover
Santa Clara County LIDAR Topographic Survey
Pacific North Western Biological Resources Consultants, Inc. 2001.
Biological Resources Assessment for the Proposed Sargent Ranch Conservation Bank Agreement

Live Oak Associates, Inc.

Sargent Ranch Quarry BE
Pacific North Western Special Status Species Findings from 2000-2001 Surveys

Date	Project #	Figure #
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inclusion in this report, based on the opinion of the peer review biologist. Figure 6 depicts CRLF and CTS occurrences documented by PNWB biologists and LOA biologists that, in most instances, were not reported to CNDDB.

A search of published accounts for all relevant special status plant and animal species was conducted for the Chittenden USGS 7.5" quadrangle in which the quarry project site occurs and for the eight surrounding quadrangles (Gilroy, Gilroy Hot Springs, San Felipe, Hollister, San Juan Bautista, Prunedale, Watsonville East and Mount Madonna) using the California Natural Diversity Data Base (CNDDB) Rarefind 5 (CDFW 2017). All species listed as occurring in these quadrangles on CNPS Lists 1A, 1B, 2, or 4 were also reviewed (Table 3).

Special status species with potential to occur on the project site itself or in the immediate surrounding vicinity are discussed further below.

Table 3: Special status species that could occur in the project vicinity

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

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Monterey Spineflower (*Chorizanthe pungens* var. *pungens*)	FT, CRPR 1B	Habitat: Occurs in sandy soils within chaparral, cismontane woodland, coastal dunes, coastal scrub and valley and foothill grassland. Elevation: 3-450 meters. Blooms: Annual herb; April-June.	**Absent**. Habitat is absent from the site. Species is not known to occur within Santa Clara County.
Robust Spineflower (*Chorizanthe robusta* var. *robusta*)	FE, CRPR 1B	Habitat: Occurs in sandy or gravelly soils within cismontane woodland, coastal dunes, and coastal scrub. Elevation: 3-300 meters. Blooms: Annual herb; April-September.	**Absent**. Habitat is absent from the site.
Seaside Bird's-beak (*Cordylanthus rigidus* ssp. *littoralis*)	CE, CRPR 1B	Habitat: Occurs in often disturbed sandy soils of closed-cone coniferous forests, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub. Elevation: 0-425 meters. Blooms: Annual herb; April-October.	**Absent**. Habitat is absent from the site.
Santa Clara Valley dudleya (*Dudleya abramsii* ssp. *setchellii*)	FE, CRPR 1B	Habitat: Occurs within cismontane woodland and valley and foothill grasslands on rocky serpentine soils. Elevation: 60-455 meters. Blooms: Perennial herb; April–October.	**Absent**. Serpentine soils required by this species are absent from the study area.
Showy Rancheria clover (*Trifolium ameonum*)	FE, CRPR 1B	Habitat: Occurs in coastal bluff scrub, valley and foothill grassland (sometimes on serpentine). Elevation: 5-415 meters. Blooms: Annual herb; April-June.	**Unlikely.** Marginal habitat for this species occurs within grassland habitats of the study area; however, the only observance in the vicinity of the study area dates back to 1903 and serpentine soils on which it is sometimes found, while present on the 6300-acre ranch property, are absent from the project site.

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

PLANTS (adapted from CDFW 2017 and CNPS 2017)
Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Anderson's manzanita (*Arctostaphylos andersonii*)	CRPR 1B	Habitat: Occurs in openings and at edges of broadleaved upland forest, chaparral, and North Coast coniferous forest. Elevation: 60-730 meters. Blooms: Evergreen shrub; November–May.	**Absent.** Manzanita species are absent from the project site.
Hooker's manzanita (*Arctostaphylos hookeri ssp. hookeri*)	CRPR 1B	Habitat: Occurs in sandy soils, sandy shales or on sandstone outcrops within closed-cone coniferous forest, chaparral, cismontane woodland, and sandy coastal scrub. Elevation: 85-536 meters. Blooms: Evergreen shrub; January–June.	**Absent.** Manzanita species are absent from the project site. Species is only known from Monterey County.
Pajaro manzanita (*Arctostaphylos pajaroensis*)	CRPR 1B	Habitat: Occurs in sandy soils within chaparral. Elevation: 30-760 meters. Blooms: Evergreen shrub; December-March.	**Absent.** Manzanita species are absent from the project site. Species is only known from Monterey County.
Kings Mountain manzanita (*Arctostaphylos regismontana*)	CRPR 1B	Habitat: Occurs on granitic or sandstone outcrops within broadleafed upland forest, chaparral, and north coast coniferous forest. Elevation: 305-730 meters. Blooms: Evergreen shrub; January-April.	**Absent.** Manzanita species are absent from the project site.
Anderson's manzanita (*Arctostaphylos andersonii*)	CRPR 1B	Habitat: Occurs in openings and at edges of broadleaved upland forest, chaparral, and North Coast coniferous forest. Elevation: 60-730 meters. Blooms: Evergreen shrub; November–May.	**Absent.** Manzanita species are absent from the project site.
Alkali milk-vetch (*Astragalus tener* var. *tener*)	CRPR 1B	Habitat: Occurs on alkaline soils within playas, valley and foothill grasslands and in vernal pools Elevation: 1-60 meters Blooms: Annual herb**;** March-June	**Unlikely.** Soils of the site are not particularly alkaline, and vernal pools are absent from the project site.
San Joaquin spearscale (*Atriplex joaquiniana*)	CRPR 1B	Habitat: Occurs in seasonal alkali wetlands or alkali sink scrub within chenopod scrub and grassland habitats. Elevation: 1-835 meters Blooms: Annual herb; April-October	**Absent**. Habitat is absent from the project site.

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

PLANTS (adapted from CDFW 2017 and CNPS 2017)
Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*)	CRPR 1B	Habitat: Chaparral, cismontane woodlands, and valley and foothill grasslands (sometimes on serpentine) Elevation: 90-1400 meters Blooms: Perennial herb; March-June	**Unlikely.** Grasslands of the site are not serpentine and provide marginal habitat for this species.
Round-leaved filaree (*California macrophylla*)	CRPR 1B	Habitat: Occurs on clay soils within cismontane woodlands and valley and foothill grasslands. Elevation: 15-1200 meters. Blooms: Annual herb; March-May.	**Possible.** Grasslands and woodlands of the site provide potential habitat for this species.
Chaparral harebell (*Campanula exigua*)	CRPR 1B	Habitat: Rocky chaparral, often on serpentine Elevation: 275-1250 meters Blooms: Annual herb; May-June	**Absent**. Habitat is absent from the site.
Pink creamsacs (*Castilleja rubicundula* ssp. *rubicundula*)	CRPR 1B	Habitat: Occurs on serpentine soils within chaparral, cismontane woodland, meadows and seeps, and valley and foothill grasslands. Elevation: 20- 900 meters. Blooms: Annual herb; April–June.	**Unlikely.** This species was documented on Sargent Ranch in 1992 and CNDDB shows the location of the occurrence to the north of Tar Creek within a seep spring in non-serpentine grasslands. As this species is considered serpentine endemic, it appears that the location in CNDDB may have been misrepresented and that possibly the population was further north within serpentine grasslands. Grasslands of the project site are not serpentine and would provide marginal habitat for this species.
Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)	CRPR 1B	Habitat: Occurs on alkaline soils within valley and foothill grasslands. Elevation: 1-230 meters Blooms: Annual herb; May-November.	**Possible.** Marginal habitat for this species occurs within grasslands of the project site.
Eastwood's goldenbush (*Ericameria fasciculata*)	CRPR 1B	Habitat: Occurs in sandy openings within closed-cone coniferous forest, maritime chaparral, coastal dunes, and coastal scrub. Elevation: 30-275 meters. Blooms: Evergreen shrub; July-October.	**Absent**. Habitat is absent from the project site. Species only known from Monterey County.
Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*)	CRPR 1B	Habitat: Occurs in vernal pools. Elevation: 3-45 meters Blooms: Annual/perennial herb; July	**Absent.** Vernal pools are absent from the project site.

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

PLANTS (adapted from CDFW 2017 and CNPS 2017)
Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Fragrant fritillary (*Fritillaria liliacea*)	CRPR 1B	Habitat: Occurs on clay soils within coastal prairie, and scrub, and valley and foothill grasslands, often on serpentine. Elevation: 3-410 meters Blooms: Bulbiferous; February-April	**Unlikely.** Species usually occurs in serpentine clay soils which are absent from the site; therefore, grasslands of the site would be considered marginal for this species.
Loma Prieta hoita (*Hoita strobilina*)	CRPR 1B	Habitat: Occurs in grassland, chaparral, cismontane woodland, riparian woodland, often on serpentine. Elevation: 30-860 meters. Blooms: May-October.	**Unlikely.** Serpentine soils are absent from the study area and only two occurrences are known from the vicinity, and were last observed in 1918 and 1922. However, coast live oak woodlands and grasslands of the site provide marginal habitat.
Legenere (*Legenere limosa*)	CRPR 1B	Habitat: Occurs in vernal pools. Elevation: 1-880 meters. Blooms: Annual herb; April–June.	**Absent.** Vernal pools are absent from the study area.
Smooth lessingia (*Lessingia micradenia* ssp. *glabrata*)	CRPR 1B	Habitat: Occurs on serpentine soils within grassland and chaparral. Elevation: 120-420 meters. Blooms: Annual herb; July-November.	**Absent.** Serpentine soils required by this species are absent from the study area.
Indian Valley bush mallow (*Malacothamnus aboriginum*)	CRPR 1B	Habitat: Occurs on rocky or granitic soils often in burned areas in chaparral and foothill woodland. Elevation: 150-1700 meters. Blooms: Evergreen shrub; April-October.	**Absent.** Rocky and granitic soils are absent from the study area; and this evergreen shrub would have been identifiable during surveys conducted on the site if it were present.
Arcuate bush mallow (*Malacothamnus arcuatus*)	CRPR 1B	Habitat: Occurs on gravelly soils within chaparral. Elevation: 15-355 meters Blooms: Evergreen shrub; April-September	**Absent.** Habitat for this species is absent from the study area; and this evergreen shrub would have been identifiable during surveys conducted on the site if it were present.
Hall's bush mallow (*Malacothamnus hallii*)	CRPR 1B	Habitat: Occurs within chaparral and coastal scrub Elevation: 10-760 meters Blooms: Evergreen shrub; May-October	**Absent.** Habitat for this species is absent from the study area; and this evergreen shrub would have been identifiable during surveys conducted on the site if it were present.
Woodland woollythreads (*Monolopia gracilens*)	CRPR 1B	Habitat: Occurs on serpentine soils within broadleaved upland forests, chaparral, cismontane woodland, North Coast coniferous forests, and valley and foothill grasslands Elevation: 10-1200 meters Blooms: Annual herb; February-July	**Absent.** Serpentine soils required by this species are absent from the study area.

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

PLANTS (adapted from CDFW 2017 and CNPS 2017)
Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Santa Cruz Mountains beardtongue (*Penstemon rattanii* var. *kleei*)	CRPR 1B	Habitat: Occurs in chaparral, lower montane coniferous forest, and north coast coniferous forest. Elevation: 400-1100 meters. Blooms: Perennial herb; May-June.	**Absent.** Habitat for this species is absent from the study area.
Hairless popcorn-Flower (*Plagiobothrys glaber*)	CNPS 1A	Habitat: Alkaline meadows and seeps and coastal salt marshes and swamps Elevation: 15-180 meters Blooms: Annual herb; March-May	**Absent.** Habitat for this species is absent from the study area.
Pine rose (*Rosa pinetorum*)	CRPR 1B	Habitat: Occurs in closed-cone coniferous forest. Elevation: 2-300 meters. Blooms: Perennial shrub; May-July.	**Absent.** Habitat for this species is absent from the study area.
Most beautiful jewel-flower (*Streptanthus albidus* ssp. *peramoenus*)	CRPR 1B	Habitat: Serpentine chaparral, cismontane woodlands, and valley and foothill grasslands Elevation: 110-1000 meters Blooms: Annual herb; March-October	**Absent.** Serpentine soils required by this species are absent from the study area.
Saline clover (*Trifolium hydrophilum*)	CRPR 1B	Habitat: Marshes and swamps, mesic and alkaline areas of valley and foothill grasslands, and vernal pools. Elevation: 0-300 meters. Blooms: Annual herb; April-June.	**Absent.** This species was documented on the ranch within wetlands to the southeast of the Phase 3 and Phase 4 quarry areas; however, the project site does not provide habitat for this species.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2017 and USFWS 2017)
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
Steelhead (*Oncorhynchus mykiss*)	FT	Migrate up fresh water rivers or streams in the spring and spend the remainder of the time in the ocean.	**Possible.** Suitable habitat is absent from the quarry site itself; however, steelhead have been observed in Tar Creek in years of moderate to heavy rainfall, and have been observed to migrate through the area where a proposed bridge crossing will be constructed.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2017 and USFWS 2017)
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
California tiger salamander (*Ambystoma californiense*)	FT, CT	Breeds in vernal pools and stock ponds of central California; adults estivate in grassland habitats adjacent to the breeding sites.	**Unlikely.** Four CTS and CRLF larval surveys have been conducted within potentially suitable breeding habitats in the vicinity of the proposed project site; one by PNWB in 2000-2001 and three by LOA in 2004, 2005 and 2017. These surveys have been consistent in their findings with respect to CRLF and CTS, with CRLF being found to be abundant and breeding in ponds throughout the ranch property, but CTS only ever being detected successfully breeding in two ponds occurring north of Tar Creek, more than 2000 feet north of the quarry site. Findings from the surveys and a discussion of potential to occur on the site is provided in a latter section of this report.
California red-legged frog (*Rana aurora draytonii*)	FT, CSC	Rivers, creeks and stock ponds of the Sierra foothills and Bay Area, preferring pools with overhanging vegetation.	**Present.** As indicated above, this species has been documented at numerous locations within riparian and stock pond habitats in the Sargent Creek and Tar Creeck watersheds in close proximity to the proposed conveyor belt crossing; and have also been documented within the Tar Creek watershed located north of the overburden and plant sites and in the vicinity of the proposed crossing for the main quarry access road. The only breeding habitat within the project area consists of a stock pond occurring within the footprint of areas to the northwest of Phase 4 that may be impacted by geotechnical setbacks. Although the remainder of the project site provides no breeding habitat for this species, potentially this species may use upland habitats of the project site and Sargent and Tar Creek during foraging and migration movements.
Foothill yellow-legged frog (*Rana boylii*)	CT (Candidate)	Occurs in swiftly flowing streams and rivers with rocky substrate with open, sunny banks in forest, chaparral, and woodland habitats, and can sometimes be found in isolated pools.	**Absent.** Suitable habitat is absent from the site and its immediate vicinity, and this species has never been documented on the greater Sargent Ranch property despite numerous herpetological surveys.
Bald eagle (*Haliaeetus luecocephalus*)	SE	Nests and roosts near water bodies with consistent fish supply (eagle's main food source). Builds nests in tall trees or on cliffs.	**Possible.** Nesting habitat is absent from the site; however, this species has been observed roosting on the ranch in the vicinity of Tar Creek and may occur rarely on the project site to forage.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2017 and USFWS 2017)
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
Bank swallow (*Riparia riparia*)	CT	Colonial nester on vertical cliffs and banks near riparian or coastal habitats. Requires sandy soils to excavate nest holes.	**Possible.** Although there are no occurrences of this species documented in CNDDB in the project vicinity, this species was documented foraging on the ranch by PNWB biologists and potential nesting habitat occurs along Sargent Creek in the vicinity of the project, so this species may forage over the project site.
Least Bell's vireo (*Vireo bellii pusillus*)	FE, CE	Occurs in southern California during the breeding season March, migrates out of the state July through September. Dense brush, mesquite, or cottonwood-willow forests in riparian areas.	**Unlikely.** The last sighting of this species near the site was in 1932 and the site itself lacks potential nesting habitat for this species; although, potential habitat occurs off-site along the upper reaches of Sargent and along Tar Creek near the Phase 4, overburden and plant site areas.
Tricolored blackbird (*Agelaius tricolor*)	CE	Breeds near fresh water in dense emergent vegetation.	**Unlikely.** There are two CNDDB occurrences of this species on Sargent Ranch, nesting in emergent vegetation of stock ponds adjacent to Sargent Creek from 1980 and 1989; however, this species has never been observed on the ranch by either PNWB or LOA during surveys. The only potential breeding habitat consists of a small seep spring within the geotechnical setback area to the south of Phase 3 and emergent vegetation associated with a stock pond within the geotechnical setback area northwest of Phase 4. The remainder of the quarry site provides no breeding habitat for this species, and only very marginal foraging habitat for this species.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Frequents annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose-textured sandy soils for burrowing and suitable prey base. Utilizes enlarged (4 to 10 inches in diameter) ground squirrel burrows as denning habitat. May forage in adjacent agricultural habitats.	**Unlikely.** Although the project site does support suitable habitat for this species, there have been no reported occurrences of this species in the project region in CNDDB in almost 25 years. The only two documented occurrences ever reported to CNDDB in the project region was one in 1992 and one in 1975. Both of the reported occurrences were more than 10 miles southeast and northeast, respectively.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2016 and USFWS 2016)
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.** PNWB biologists tentatively identified this species by vocalization on the greater Sargent Ranch property during 2000-2001 surveys, however, the quarry project site appears to provide no breeding habitat for this species, and they have never been directly observed in the project site vicinity during many surveys for CTS and CRLF.
Western pond turtle (*Emys marmorata*)	CSC	Open slow-moving water of rivers and creeks of central California with rocks and logs for basking.	**Possible.** Potential habitat for this species occurs during the wet season within Sargent Creek in the vicinity of the Phase 1 and 2 and within Tar Creek in the vicinity of the proposed access road crossing, and it may occasionally use upland habitats of the site in proximity to the creek; however, there are no documented occurrences of turtles in the immediate project vicinity.
Coast horned lizard (*Phrynosoma blainvillii*)	CSC	Grasslands, scrublands, oak woodlands, etc. of central California. Common in sandy washes with scattered shrubs.	**Unlikely.** Habitat is marginal on the quarry site for this species as open sandy areas are absent, and this species has never been observed on Sargent Ranch or documented in CNDDB within a three-mile radius.
White-tailed kite (nesting) (*Elanus leucurus*)	CP	Open grasslands and agricultural areas throughout central California.	**Possible.** Suitable breeding habitat exists on the site for this species within oak woodland habitat, and grasslands and agricultural areas on the project site provide suitable foraging habitat.
Peregrine falcon *(Falco peregrinus anatum*)	CP	Requires cliffs for nesting and forages in a variety of habitats.	**Possible.** PNWB observed falcons foraging over Sargent Ranch during 2000 and 2001 surveys and the project site provides potential foraging habitat for this species; however, nesting habitat is absent from the project site.
Golden eagle (nesting & nonbreeding/wintering) (*Aquila chrysaetos*)	CP	Typically frequents rolling foothills, mountain areas, sage-juniper flats and desert.	**Present.** Woodlands on the project site provide only marginal nesting habitat for this species; however, golden eagles have been observed on numerous occasions foraging over the ranch and are presumed to forage on the project site on a regular basis.
Northern harrier (*Circus cyaneus*)	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats.	**Present.** This species has been observed foraging over grasslands of the site and potential nesting habitat occurs adjacent to Sargent Creek.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2016 and USFWS 2016)
California Species of Special Concern and Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Short-eared owl (*Asio flammeus*)	CSC	Occurs in wide open spaces including marshes, open shrublands, grassland, prairie, and agricultural field habitats, and need dense ground cover to conceal nests.	**Possible.** The site supports both suitable breeding and foraging habitat for this species
Long-eared owl (*Asio otus*)	CSC	Found throughout California mainly in open woodlands, and riparian areas with adjacent grasslands for foraging.	**Possible.** The site supports both suitable breeding and foraging habitat for this species.
Burrowing owl (*Athene cunicularia*)	CSC	Found in open, dry grasslands, deserts and ruderal areas. Requires suitable burrows. This species is often associated with California ground squirrels.	**Possible.** Burrowing owls have been observed nesting, foraging and roosting on the greater Sargent Ranch property and the project site itself provides good potential breeding, roosting and foraging habitat for this species.
Yellow-breasted chat (*Icteria virens*)	CSC	Found mainly in dense brush of open canopy riparian corridors or along ponds.	**Unlikely.** Although this species was documented on the greater Sargent Ranch property by PNWB; the project site itself provides only marginal nesting habitat for this species in riparian woodlands near Phase 1 and Phase 2 and near the proposed access bridge over Tar Creek, although it may rarely forage on the site.
Black swift (nesting) (*Cypseloides niger*)	CSC	Nests on cliffs near the ocean or other aquatic habitat. Forages for insects over a variety of habitats.	**Possible.** Nesting habitat is absent on the site, but this species may forage over the site.
Vaux's swift (nesting) (*Chaetura vauxi*)	CSC	Nests in coniferous and deciduous forests and forages for insects over a variety of habitats.	**Possible.** Nesting habitat is absent from the site, but this species may forage over the site.
Olive-sided flycatcher (nesting) (*Contopus cooperi*)	CSC	Frequents coniferous forests, especially with tall standing dead trees. They prefer spruce, fir, balsam, pine, or mixed woodlands near edges and clearings, wooded streams, swamps, bogs, edges of lakes or rivers.	**Unlikely.** Olive-sided flycatchers have been observed on Sargent Ranch during surveys by PNWB and LOA; but breeding and foraging habitat on the project site is marginal for this species.
Grasshopper sparrow (*Ammodramus savannarum*)	CSC	Forages in open grasslands, builds a nest of grasses on the ground.	**Possible.** Although no occurrences of this species are reported in the project vicinity in CNDDB, H.T. Harvey biologists have reported observing this species on the larger ranch property from an adjacent property to the north.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2016 and USFWS 2016)
California Species of Special Concern and Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*)	CSC	Prefers to forage and breed in coastal salt marshes and in adjacent moist grassland and ruderal habitats within and immediately above the fog belt. May rarely use drier grasslands.	**Unlikely.** This species' preferred breeding habitat is absent from the site, although grasslands of the site provide marginal foraging and breeding habitat for this species.
Yellow warbler (*Setophaga petechial*)	CSC	Forages and nests in riparian woodland habitats.	**Posssible.** Riparian woodlands of the site provide potential foraging and breeding habitat for this species.
Loggerhead shrike (*Lanius ludovicianus*)	CSC	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	**Possible.** The site supports both suitable breeding and foraging habitat for the loggerhead shrike.
Western red bat (*Lasiurus blossevillii*)	CSC	Roosts primarily in trees in a wide variety of habitats; prefers a mosaic of habitats including open areas for foraging.	**Possible.** Trees on the site provide potential roosting habitat and the site provides potential foraging habitat for this species.
Pallid bat (*Antrozous pallidus*)	CSC	Most common on dry, open habitats with rocks for roosting. May also use large hollows of trees in addition to caves for roosting.	**Possible.** The site offers suitable foraging habitat for this species. Roosting habitat may be available in woodlands that support large cavernous hollows.
California mastiff bat (*Eumops perotis californicus*)	CSC	Forages over many habitats, requires tall cliffs or buildings for roosting.	**Possible.** Suitable foraging habitat occurs on the site, but roosting habitat is absent.
Townsend's big-eared bat (*Corynorhinus townsendii*)	CSC	Requires caves, mines, tunnels, buildings, or other human-made structures for roosting. May use separate sites for night, day, hibernation, or maternity roosts. Found in all habitats except sub-alpine and alpine.	**Possible.** Suitable roosting habitat is absent from the project site; however, this species may forage over the site.
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)	CSC	Found in hardwood forests, oak riparian and shrub habitats.	**Possible.** During 2017 surveys, woodrat nests were observed within the riparian habitat of Tar Creek near the proposed bridge crossing. Oak woodlands and drainages on the Phase 3 and 4 quarry sites and overburden stockpile areas also provide marginal habitat for this species; however, no woodrat nests have ever been observed in these latter areas by either PNWB or LOA biologists.woodrat
Ringtail (*Bassariscus astutus*)	CP	Occurs mainly in riparian and heavily wooded habitats near water.	**Unlikely.** Although oak and/or riparian woodlands occur on all phases of the project, these woodlands would provide only marginal habitat for this species, although it may occur in riparian habitat of Tar Creek and rarely occur on areas of the site in proximity to Tar Creek.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2016 and USFWS 2016)
California Species of Special Concern and Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
American badger (*Taxidea taxus*)	CSC	Occurs in grasslands, and open areas of scrubland and forests with friable soils that are uncultivated.	**Likely.** Grasslands of the project site provide suitable habitat for this species and it is known to occur on the greater Sargent Ranch property.

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	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CR	California Rare
FC	Federal Candidate	CP	California Protected
		CSC	California Species of Special Concern
CNPS	California Native Plant Society Listing		
1A	Plants Presumed Extinct in California	3	Plants about which we need more information – a review list
1B	Plants Rare, Threatened, or Endangered in California and elsewhere	4	Plants of limited distribution – a watch list
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere		

Most of the special status plant and animal species listed in Table 3 are either absent or may occur rarely or occasionally on the site and sufficient information exists to evaluate the potential impacts the project may or may not have on them. However, a number of other special status species have been documented on Sargent Ranch in the immediate vicinity of the project site and are assumed present or are considered likely or possibly to occur on the site. A few of these latter species warrant further discussion and include the steelhead trout, California tiger salamander (CTS), California red-legged frog (CRLF), burrowing owl (BUOW), and American badger.

Steelhead (*Oncorhynchus mykiss*; South-Central California Coast DPS). Federal Listing Status: Threatened; State Listing Status: None (Species of Special Concern).

The South-Central California Coast steelhead Distinct Population Segment (SCCCS DPS) is listed as federally threatened by the Federal Endangered Species Act and considered a California Species of Special Concern. The SCCC steelhead was listed as threatened by the National Marine Fisheries Service (NMFS) on 17 October 1997 (National Marine Fisheries Service 1997). The species was listed due to a presumed 85% decline in fish stocks between 1960 and 1997.

These declines are presumed to be associated with negative effects caused by water development projects, predation by introduced fishes and invertebrates, modification of spawning streams by livestock grazing, agricultural activities, urbanization, water pollution, and overfishing (NMFS 1997 and 2016). The project site occurs in an area which is considered a high priority for conservation for the species and Tar Creek is part of critical habitat for this species.

Most habitats where steelhead occur are low elevation streams that lack significant barriers for travel to and from the ocean. Such stream habitats are usually less than 70ºF, with good water quality, and abundant riparian vegetation (Fry 1973). The life history of steelhead is quite variable, but adults typically enter streams from the ocean with the winter rains. They then ascend the stream to a suitable site where they pair up and dig a nest (known as a red) with their tails (Fry 1973). Most redds are dug at the lower end of pools or in riffles where water velocities are 0.66-5.09 feet/second (Moyle 2002). The substrate is largely cobbles, between 0.25-4 inches in diameter (Shapovalov and Taft 1954). Each female lays from 200-12,000 eggs, which the male fertilizes as they are dropped into the redd. The adults cover the nest and may eventually die or return to the ocean if the distance is not too great to overcome. The resulting eggs hatch in about 3-4 weeks, and the resulting fry remain in the redd for a further 2-3 weeks before swimming out into their natal stream (Moyle 2002). They then feed on aquatic insects and other items in the water column and grow rapidly. Juvenile fish remain in stream habitats for 1-4 years (usually 2), before migrating to the lagoon and undergoing a physiological change that allows them to enter the ocean (Shapovalov and Taft 1954). This change is called smoltification and is a very vulnerable part of the life cycle of steelhead. After smoltification, juvenile fish enter the ocean where they spend 1-4 years (usually 2) feeding on the abundant food resources (Shapovalov and Taft 1954). They then return to their natal streams to spawn and repeat the life cycle.

Occurrence on the Site. Steelhead are known to migrate up Tar Creek on the site and the lower and middle reaches of Tar Creek are used by steelhead as spawning and rearing habitat. While steelhead migrate through the reach of Tar Creek where the bridge crossing is proposed, this area and immediately adjacent upstream and downstream reaches do not provide spawning habitat for this species due to a lack of gravelly substrate.

California Tiger Salamander (*Ambystoma californiense*). Federal Listing Status: Threatened; State Listing Status: Threatened.

Life History and Ecology. The California tiger salamander (CTS) is a large terrestrial salamander, with adults attaining a total length of over 8 inches (203 millimeters) [Stebbins 1951]. Dorsally, the background color appears to be jet black, and normally with an overlain pattern of white or yellow spots, or bars (Stebbins 1985; Petranka 1998). Adult California tiger salamanders breed from late November through February, following the onset of winter rains (Storer 1925; Barry and Shaffer 1994). Both males and females travel up to 1 mile (1.6 km) or more during nocturnal breeding migrations from subterranean refuge, or aestivation, sites (i.e., small mammal burrows) to egg deposition sites in long-lasting, rain-filled vernal pools (Twitty 1941; Loredo et al. 1961; Andersen 1968; Austin and Shaffer 1992).

Embryos of California tiger salamanders hatch in approximately 14-28 days after being laid and the resulting gilled, aquatic larvae [0.41-0.43 inches (10.5-11 mm) in length] require a minimum of about 10-12 weeks to complete development through metamorphosis (Storer 1925; Twitty 1941). Following metamorphosis (normally from early May through July), juveniles emigrate en masse at night into small mammal burrows or deep cracks in the soil, which they use as refugia during the hot summer and fall months (Shaffer et al. 1993; Loredo et al. 1996).

Anecdotal evidence indicates that salamanders have a high degree of site fidelity to their breeding ponds and also to the small mammal burrows they use for refugia (Shaffer et al. 1993). Sites used for reproduction are typically natural pools that fill with rainwater and artificial stock ponds; however, salamanders have also been observed to breed in springs, wells, artificial reservoirs, quarry ponds, man-made canals, and rarely, in the slack waters of oxbows in small- to medium-sized streams. Such sites may, or may not contain dense amounts of aquatic and streamside vegetation. The highest numbers of larvae appear to occur in aquatic habitats that are largely devoid of any vegetation and contain very turbid water. Salamanders may also turn up in certain man-made structures (e.g. wet basements, wells, swimming pools, underground pipes, and septic tank drains), sometimes many years after their local breeding site has been destroyed by urbanization (Storer 1925; Pickwell 1947).

Juvenile and adult salamanders typically use the burrows of California ground squirrels and pocket gophers as underground refugia (Storer 1925; Jennings and Hayes 1994; Jennings 1996; Loredo et a1. 1996) but may use a variety of burrows including cracks within the soil that may extend up to 15 feet (4.6 m) deep from the soil surface (Jennings, unpub. data). Juvenile and adult salamanders are especially common in situations where piles of concrete, rock, or other rubble are mixed with dirt and are located near breeding sites (Jennings, unpub. data). Findings from the limited research on the species suggest that 95% of a CTS population estivates within 2,000 feet of a breeding pond and that 99% of the breeding population estivates within 0.7 miles of a breeding pond; however, the USFWS considers suitable habitat within 1.3 miles of a known breeding pool to constitute potential upland habitat for the salamander.

Occurrence on the Site. There have been four CTS and CRLF larval surveys conducted on the greater Sargent Ranch property since 2000. PNWB conducted a larval survey in 2000-2001, and LOA has conducted larval surveys in 2004, 2005 and most recently in spring 2017. Potential breeding habitats for CTS and CRLF occurring on the ranch are identified on Figure 7 and results from the four survey efforts are provided in Table 4 and discussed below. The proposed quarry site itself supports no ponds or other hydrologic features that have the proper hydrologic regime to support successful CTS breeding although several ponds occur in the vicinity of the site and one of the geotechnical setback areas (Phase 3 and 4) supports a wetland seep and a stock pond.

During a CTS and CRLF larval survey conducted in 2000-2001, PNWB confirmed the presence of successful breeding populations of CTS in two locations on the greater Sargent Ranch property (Figure 7). Successful breeding locations included the pond/seasonal wetland complex in the very northeastern corner of the ranch near Tick Creek (identified as #19 on Figure 7), also supported introduced eastern tiger salamanders (*Ambystoma tigrinum*) and hybrids of the two species (confirmed via genetic analysis by UC Davis); and within a pond adjacent to Sycamore Creek, a tributary of Tar Creek (identified as #13 on Figure 7). They also observed CTS larva in a seasonal wetland that occurs upstream of a culvert of Intermittent Channel 3 on Phase 3 of the project site (identified as #17 on Figure 7). However, the latter site was observed by PNWB biologists to have dried up before larva had a chance to metamorphose and move to upland habitats. This same seasonal wetland was observed to be completely dry by LOA during

numerous spring surveys conducted on the site from 2005 through to the present, which included wetland delineation and CTS larval surveys conducted by LOA in spring 2005, LOA rare plant surveys in spring 2007, the April 2017 delineation verification site visit with USACE, and the May 2017 CTS larval surveys. Therefore, this latter feature does not provide suitable hydrology for successful CTS reproduction.

Table 4. Findings from CTS and CRLF Larval Surveys on Sargent Ranch from 2000 through 2017.

Feature No.	FeatureType	PNWB 2000-2001	LOA 2004	LOA 2005	LOA 2017	Comments
1	Stock Pond	Negative	N/S	PTF	CRLF, Newt, PTF	
2	Stock Pond	CRLF	N/S	N/S	Dry	
3	Stock Pond	CRLF	N/S	N/S	CRLF, Newt, PTF (#4)	
4	Instream Pond	CRLF	N/S	N/S	N/S, inundated	Dammed section of Sargent Creek
5	Stock Pond	CRLF	N/S	N/S	CRLF, Newt, PTF	
6	Pond	WPT	N/S	Dry	PTF, Stickleback	
7	Wetland Seep/Cattle Trough	Negative	N/S	Dry	N/S, inundated	
8	Pond	Negative	N/S	Dry	Dry	
9	Stock Pond	CRLF	N/S	CRLF, Newt, PTF, GS	N/S	
10	Stock Pond	Fish	N/S	BF, PTF, Fish	CRLF, Newt, PTF	
11	Stock Pond	CRLF, BF, Fish	CRLF, Newt	CRLF, Newt, CT	CRLF, Newt, PTF, CT	
12	Stock Pond	CRLF, BF, Fish	Newt	Newt, PTF, BF	CRLF, Newt, PTF	
13	Stock Pond	CRLF, CTS[2]	N/S	N/S	CRLF, Newt, PTF	
14	Stock Pond	CRLF, BF	N/S	N/S	N/S	
15	Stock Pond	CRLF	N/S	CRLF, Newt, PTF	N/S, inundated	
16	Stock Pond	CRLF	N/S	N/S	N/S	

Table 4. Findings from CTS and CRLF Larval Surveys on Sargent Ranch from 2000 through 2017.						
Feature No.	FeatureType	PNWB 2000-2001	LOA 2004	LOA 2005	LOA 2017	Comments
17	Seasonal Wetland	CTS[1]	N/S	N/S	Dry	Upstream of culvert crossing in confluence of Intermittent Drainage 3 and two ephemeral drainages on the Phase 3 quarry area.
18	Sargent Creek	CRLF	N/S	N/S	Dry	
19	Vernal Pool, Seasonal Wetland, Stock Pond Complex	CTS, ETS, CTSxETS hybrids	Dry (A)	CTS	CTSxETS ybrids	Also, CNDDB CTS Occurrence #103 from 1992 attributed to this location. Location is in close proximity to known ETS introduction site on adjacent Blue Stone Quarry property.
20	Stock Pond	CRLF	N/S	N/S	N/S	
21	Stock Pond	CRLF	Fish	N/S	N/S	Outside 1.3 mile radius of quarry/mitigation sites. In Santa Cruz County and not shown on map.
22	Upper Tar Creek	CRLF	N/S	N/S	N/S	Outside 1.3 mile radius of quarry/mitigation sites
23	Stock Pond	CRLF, BF	N/S	Negative	N/S	Outside 1.3 mile radius of quarry/mitigation sites
24	Likely same as location #19 as there are no ponds in the	N/a	N/a	N/a	N/a	CNDDB CTS Occurrence #525 (2000) is mapped here, however, from the

Table 4. Findings from CTS and CRLF Larval Surveys on Sargent Ranch from 2000 through 2017.						
Feature No.	FeatureType	PNWB 2000-2001	LOA 2004	LOA 2005	LOA 2017	Comments
	mapped location. See comment.					description, this observance was at location #19 located to the north of where this occurrence is mapped.
25	Sycamore Creek	CRLF	N/S	Dry	N/S	
26	Sargent Creek channel	Adult CRLF observed in the creek	N/a	N/a	Two adult CRLF observed in April 2017	Numerous observances by LOA of adult CRLF in Sargent Creek when wetted.
27	Spring with no pools	N/S	N/S	PTF	N/S	Feature is a rock-lined spring that flows out of the hillside with no associated pools.
28	Tar Seep	N/S	N/S	Negative	N/S	
29	Pond or Seasonal Wetland	N/S	N/S	PTF	N/S	During 2005 survey this was described as a "wet area".
30	Pond or Seasonal Wetland	N/S	N/S	Negative	N/S	During 2005 survey this was described as a "wet spot".
31	Wetland	Negative	N/S	CRLF	N/S	Marsh area adjacent to Tar Creek.
32	Pond	N/S	N/S	Dry	N/S	Pond within small drainage south of Pond #1

BF = Bullfrog (*Lithobates catesbieana*)
CRLF = California red-legged frog
CTS = California tiger salamander
CT = California toad (*Anaxyrus boreas halophilus*)
Fish = non-native fish
Newt = California newt (*Taricha torosa*)
PTF = Pacific tree frog
WPT = western pond turtle
GS = garter snake (*Thamnophis sp.*)
ETS = eastern tiger salamander
N/S = not sampled

Notes:

[1] CTS larva were found by PNWB in this seasonal wetland but the feature had dried up before larva were mature enough to move to estivation habitat. This seasonal wetland has been observed to be dry by April in subsequent surveys by LOA. This wetland occurs at the confluence of Intermittent Drainage 3 with two ephemeral channels, upstream of a culvert road crossing. Despite a wet 2016-2017 winter, this feature was observed to be completely dry by early April 2017.

[2] This pond is labelled as Pond #2 in PNWB's 2002 report. U.C. Davis genetic analysis of CTS larva found in this pond by PNWB confirmed this population was a pure CTS population. This pond was not sampled by LOA in 2004 or 2005. During the 2017 survey, no CTS were found present in the pond, although CRLF, PTF and newts were found present.

LOA's 2004 CTS and CRLF larval survey evaluated four ponds on Sargent Ranch, including #11 (CRLF and California newt only), #12 (California newt only), #19 (dry, location where PNWB had found CTS, ETS and hybrids in 2000-2001), and #21 (only non-native fish were detected).

LOA's 2005 CTS and CRLF larval survey evaluated 18 ponds/other features that provided potential CTS and CRLF breeding habitat. CTS were found successfully breeding only in the Pond/Wetland Complex #19, although Pond #13 where PNWB found a breeding population of CTS in 2000-2001 was not sampled.

During 2017 CTS and CRLF larval surveys, LOA evaluated 14 ponds and other features providing potential CTS and CRLF breeding habitat, which included all ponds in the Sargent Creek watershed with the exception of #4 (a very large, deep dammed section of Sargent Creek). Potential breeding habitats evaluated outside of the Sargent Creek watershed of the project site included Pond #13 where PNWB found CTS in 2000-2001 (found by LOA to be completely dry in 2017) and Pond #19, the pond and wetland complex where PNWB found CTS, ETS and hybrids. LOA found only what appeared to be CTSxETS hybrids in the latter feature, although none were collected for genetic testing.

Sources:
Live Oak Associates, Inc. 2004, 2005, & 2017 CTS Larval Surveys
Santa Clara County HCP Land Cover
Santa Clara County LIDAR Topographic Survey
Pacific North Western Biological Resources Consultants, Inc. 2001.
Biological Resources Assessment for the
Proposed Sargent Ranch Conservation Bank Agreement

LEGEND

- Sargent Ranch Property Boundary
- Quarry Project Boundaries
- Geotechnical Setback Boundaries

#10 **Surveyed Ponds Reference Numbers**
See Table 4 for Survey Results

Habitats

- California Annual Grassland
- Coast Live Oak Forest and Woodland
- Coastal and Valley Freshwater Marsh
- Grain, Row-crop, Hay and Pasture, Disked / Short-term Fallowed
- Mixed Oak Woodland and Forest
- Mixed Riparian Forest and Woodland
- Northern Coastal Scrub / Diablan Sage Scrub
- Northern Mixed Chaparral / Chamise Chaparral
- Pond
- Redwood Forest
- Rural Residential
- Seasonal Wetland
- Serpentine Grassland
- Serpentine Seep
- Urban - Suburban
- Valley Oak Woodland
- Willow Riparian Forest and Scrub

Hydrology

- Drainages with defined bed and bank
- U.S.G.S. Blueline Drainages

Tick Creek
Sycamore Creek
Tar Creek
Sargent Creek
620 meter radius around Complex
620 meter radius
1.24 mile radius
1.24 mile radius
Highway 101
Overburden Stockpile
Processing Plant
Stockpile
Phase IV
Phase III
Phase II
Phase I
101
N

5,000' 0 5,000 feet
Approximate Scale

Live Oak Associates, Inc.

Sargent Ranch Quarry BE
Ponds Surveyed on Sargent Ranch Site

Date	Project #	Figure #
8/08/2017	662-08	7

Although not all potential breeding habitats on the greater Sargent Ranch property were evaluated during all four larval survey efforts, there is a definite pattern that emerges and that is that the only two features ever observed to support successful breeding of CTS on the greater ranch property are #19 and #13, both which occur to the north of the proposed quarry site on the other side of Tar Creek, in the Tick Creek and Tar Creek watersheds, respectively. Although the resource agencies uses a 1.24 mile (approximately 6,500 feet) radius around breeding ponds to delimit the extent of potential CTS estivation habitat, research conducted by Trenham and Shaffer (2005) found that 90% of a CTS population estivates within 490 meters (1,608 feet) of a breeding pond, 95% estivate within 620 meters (2,034 feet) of a breeding pond, and that 99% estivate within 1,126 meters (approximately 3,790 feet). The closest proposed quarry boundary near Phase 4 is 1,370 meters (approximately 4,500 feet) from Pond/Wetland Complex #19 and a similar distance from Pond #13. Although we cannot conclude that CTS are completely absent from the proposed quarry site, based on survey findings and research on CTS estivation patterns, we believe CTS are unlikely to estivate on the quarry project site.

California Red-legged Frog (*Rana draytonii*). Federal Listing Status: Threatened; State Listing Status: Species of Special Concern.

Life History. The California red-legged frog (CRLF) is the largest native frog in California, with adults attaining a length of 3.4-5.4 inches (85-138 mm) snout-to-vent length (SVL) (Jennings and Hayes 1994). On the dorsal surface, the background color varies from brown to gray to reddish-brown, normally with some dark mottling peppered around spots with light-colored centers (Stebbins 1985). The distribution of reddish pigment is highly variable, but is usually restricted to the groin and undersurfaces of the thighs, legs, and feet (Jennings and Hayes 1994). This red coloration is not diagnostic for species identification. Two distinctive, prominent folds of skin ("dorsolateral folds"), run in a complete line from the rear of the eyes to the groin. The groin has a distinctly mottled pattern of black on a light-colored background. Juvenile frogs range from 1.5-3.4 inches (40-84 mm) SVL and have the same coloration as adults except that the dorsolateral folds are normally yellow or orange colored (Stebbins 1985). This coloration is distinct even at a distance. Larval frogs range from 0.6-3.1 inches (14-80 mm).

Adult California red-legged frogs have been observed breeding from late November through early May after the onset of warm rains (Storer 1925, Jennings and Hayes 1994). Male frogs typically attract females by emitting low short calls in small mobile groups of 3-7 individuals (Jennings and Hayes 1994). Females move toward the calling groups and amplex a male. Following amplexus, the females move to chosen oviposition sites where they attach an egg mass of 2,000-6,000 moderate-sized (2.0-2.8 mm diameter) eggs to an emergent vegetation brace such as tule stalks, grasses, or willow roots located just below the water surface (Storer 1925, Livezey and Wright 1947). Once laid, the egg mass will swell with water for about 24 hours, finally reaching the size of a softball. Males usually remain at the breeding sites for several weeks after reproduction before moving to foraging habitats, while females immediately remove to foraging habitats.

California red-legged frog embryos hatch about 6-14 days following fertilization. The resulting larvae (8.8-10.3 mm) require 14-28 weeks to reach metamorphosis, which usually occurs between July and September, although there are scattered observations of overwintering larvae in perennial ponds such as at the arboretum at Golden Gate Park in San Francisco (Jennings, pers. obs). Tadpoles generally metamorphose at 65-85 mm total length (Storer 1925) and the newly

emerged juvenile frogs are generally 25-30 mm SVL. Larvae are thought to graze on algae, but they are rarely observed in the field because they spend most of their time concealed in submergent vegetation, algal mats or detritus (Jennings and Hayes 1994). Post-metamorphic frogs grow rapidly feeding on a wide variety of invertebrates.

Males typically reach sexual maturity at 2 years and females at 3 years; however, frogs of both sexes may reach sexual maturity in a single year if resources are sufficient (Jennings, unpub. data). Conversely, frogs may take 3-4 years to reach maturity during extended periods of drought (Jennings and Hayes 1994). Based on limited field data, California red-legged frogs appear to live up to 10 years in the wild (Jennings, unpub. data). Adult frogs apparently eat a wide variety of animal prey including invertebrates, small fishes, frogs, and small mammals.

California red-legged frogs have been observed in a number of aquatic and terrestrial habitats throughout their historic range. Larvae, juveniles, and adult frogs have been collected from natural lagoons, dune ponds, pools in or next to streams, streams, marshlands, sag ponds, and springs, as well as human-created stock ponds, secondary and tertiary sewage treatment ponds, wells, canals, golf course ponds, irrigation ponds, sand and gravel pits (containing water), and large reservoirs (Jennings 1988). The key to the presence of frogs in these habitats is the presence of perennial (or near perennial) water and the general lack of introduced aquatic predators such as largemouth bass (*Micropterus salmoides*), green sunfish (*Lepomis cyanellus*), and bluegill (*L. macrochirus*), crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*), and bullfrogs (*Rana catesbeiana*).

The habitats observed to contain the largest densities of red-legged frogs are associated with deep-water pools (27 inches [>0.7 meters] deep) with stands of overhanging willows (*Salix* spp.) and an intermixed fringe of cattails (*Typha* spp.), tule (*Scirpus* spp.), or sedges (*Carex* sp.) (Hayes and Jennings 1988). However, California red-legged frogs have also been observed to inhabit stock ponds, sewage treatment ponds, and artificial (e.g., concrete) pools completely devoid of vegetation (Storer 1925; Jennings, *pers. comm.*). Continued survival of frogs in all aquatic habitats seems to be based on the continued presence of ponds, springs, or pools that are disjunct from perennial streams. Such habitats provide the continued basis for successful reproduction and recruitment year after year into nearby drainages that may lose frog populations

due to stochastic events such as extreme flooding or droughts. Juvenile frogs are often observed sunning themselves during the day in the warm, surface-water layer associated with floating and submerged vegetation (Hayes and Tennant 1986). Adult frogs are largely nocturnal and are known to sit on stream banks or on the low-hanging limbs of willow trees over pools of water where they can detect small mammal prey (Hayes and Tennant 1986; Jennings and Hayes 1994). Adult red-legged frogs will move within the riparian zone from well-vegetated areas to pools of water to hydrate during periods of time when many of the streams are dry except for isolated pools (Rathbun et al. 1993). During wet periods (especially in the winter and early spring months), red-legged frogs can move long distances (e.g., 1 mile) between aquatic habitats, often over areas that are considered to be unsuitable for frogs (e.g., roads, open fields, croplands, etc.). Such activities can result in frogs ending up in isolated aquatic habitats well away from the nearest known frog populations.

Occurrence on the Site. CRLF have been confirmed to be present in ponds and tributaries of the Tick Creek, Tar Creek, Sycamore Creek, Pescadero Creek and Sargent Creek watersheds of the greater Sargent ranch property during surveys, including four larval surveys discussed above, conducted on the site from 2000 through 2017.

During a wetland delineation survey in 2017 on newly identified potential geotechnical setback areas, juvenile CRLF and juvenile California newts, were observed within a pond occurring on the potential geotechnical setback area above Phase 4. The proposed quarry areas themselves provide no potential breeding habitat for this species, however, Tar Creek and Sargent Creek in locations proposed for access road and conveyor belt crossings, respectively, provide foraging and movement habitat for these species and upland habitats of the proposed quarry may also be utilized by this species for foraging and movement habitat.

Western Pond Turtle (*Actinemys marmorata*). Federal Listing Status: None; State Listing Status: Species of Special Concern.

The western pond turtle is the only native aquatic, freshwater turtle in California and normally associates with permanent or nearly permanent aquatic habitats, including streams, lakes, and ponds. Historically, this species occurred in Pacific Coast drainages from Washington to Mexico. This species occurs in aquatic habitats with 1) basking sites such as rocks and logs, 2)

dense stands of submergent or emergent vegetation, 3) abundant aquatic invertebrate resources, 4) suitable nearby nesting sites, and 5) the lack of native and exotic predators (Bury 1972; Jennings and Hayes 1994; Bury and Holland, in press). This species can move along streams up to 3.1 miles (5 kilometers) in a short period of time, and they can tolerate at least 7 days without water (Jennings and Hayes 1994; Bury and Holland, in press).

Occurrence on the Site. The only observance of pond turtles on the greater ranch property was by PNWB biologists in a pond along the eastern boundary of the property near Highway 101, approximately 1,500 feet southeast of the Phase 4 quarry site. This occurrence is not recorded in the CNDDB. There are only three other occurrences recorded in CNDDB within a three-mile radius: one mile north of Sargent Ranch, approximately 0.5 miles southeast of the ranch, and on just the other side of Highway 101 from the northeastern boundary of the ranch. Pond turtles have never been observed on the project site or in the Sargent or Tar Creek watersheds on or adjacent to the project site, although in wet years, these two creeks would appear to provide habitat for the species. However, the vast majority of the project site, outside of the potential Sargent Creek crossing for the Phase 1 and 2 access road, does not support habitat for this species, although turtles may rarely occur in these areas during movements between suitable aquatic habitats.

Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Concern.

The burrowing owl is considered a California species of special concern. This decision was based on the fact that the burrowing owl's population levels were decreasing due to habitat destruction, roadside nesting (vulnerability to human interference) and indirectly as a result of ground squirrel poisoning.

The burrowing owl is a small, long-legged, semi-fossarial bird that averages a height of 9.5 inches, has an average wingspan of 23 inches, and weighs an average of 5.25 ounces. Burrowing owls are unique, as they are the only owl that regularly lives and breeds in underground nests. In California, these birds typically occur in the Central and Imperial Valleys, primarily utilizing ground squirrel burrows (or the burrows of other animals, e.g., badgers, prairie dogs and kangaroo rats) found in grasslands, open shrub lands, deserts, and to a lesser extent, grazing and agricultural lands. Burrowing owls in this region are typically found in lower elevations, and

have strong site fidelity. Pairs have been known to return to the same area year after year, and some pairs are known to utilize the same burrow as the previous year.

Life History. Burrowing owls feed on various small mammals including deer mice, voles, and rats. They also prey on various invertebrates including crickets, beetles, grasshoppers, spiders, centipedes, scorpions and crayfish. Peak hunting periods occur around dusk and dawn.

The breeding season for the burrowing owl runs from February to August, with a peak between April and July. Clutch size varies from six to 12 eggs, with an average of seven to nine eggs. Females generally produce only one clutch per year. The female incubates the eggs for a month, while the male provides her food. The male continues to provide food during the brooding period. The young remain in their burrow for approximately two weeks after hatching, and become fully independent of their parents between eight to ten weeks of age. Burrowing owls are a fairly short-lived species, with an average life expectancy of 4.8 years. The oldest known wild burrowing owl was eight years and eight months old at the time of its death.

Burrowing owls are subject to predation by larger mammals (e.g., feral cats, bobcats, fox and coyotes). They are also susceptible to anthropogenic effects such as collisions with automobiles, and destruction or disruption of their nests, especially during the breeding season. The burrowing owl may also be affected by ground squirrel eradication efforts. Burrowing owl numbers have been in decline over the past 30 to 40 years, in California. The decline in numbers is due mainly to habitat destruction by way of development and agricultural practices.

Occurrence on the Site. A burrowing owl was observed on the site during PNWB surveys immediately to the north of the wetland/pond complex near Tick Creek in the northeastern portion of the greater Sargent Ranch property although the owl was confirmed to be gone from that area by the nesting season. The prior resident rancher also reports seeing burrowing owls during the summer perched on serpentine rock outcrops in the northern portion of the ranch. Since this latter area does not support ground squirrel burrows, it is likely the owls were only foraging, and not roosting or nesting, in this location. However, burrowing owls were observed in 2015 to be nesting in fields on the northern portion of the greater Sargent Ranch property (pers. comm. Verne Freeman), and the grasslands of the project site would appear to provide good potential breeding habitat for this species.

American Badger (*Taxidea taxus)*. Federal Listing Status: None; State Listing Status: Species of Special Concern.

The American badger is considered a California species of special concern. This decision was based on the fact that the badger's population levels were decreasing, mainly as a result of the conversion of open grassland habitats to agriculture and urban uses, trapping for fur, poisoning, and indirect poisoning as a result of consuming poisoned rodents. Rodents are the main food source for the badger.

The American badger measures 520 to 875 mm (20 to 34 inches) from head to tail, with the tail making up only about 1/5 of this length. Badgers weigh between 4 and 12 kg (approximately 9 to 26 pounds). The badger has a flattened body with short, stocky legs, and feet with strong claws that are up to 4-inches long. The fur on the back and flanks of the badger varies from brownish gray to a reddish color, with a buff colored underside. The face of the badger is distinct with several black patches on either side of its long snout. A white dorsal stripe extends back over the head from the nose. In northern populations, the dorsal stripe ends near the shoulders, while in southern populations it continues over the back to the rump. Male badgers are significantly larger than the females (Kurta, 1995; Long, 1999). Badgers are primarily solitary, coming together only for breeding purposes. Badgers are generally found throughout California's arid grasslands and scrublands with friable soils from sea level to 12,000 feet, except in the northern North Coast area (Grinnell et al, 1937). Badgers are primarily nocturnal and are rarely seen during the day.

Life History. The main food source for badgers is ground squirrels and pocket gophers; however, they also are known to feed on a variety of other small- to medium-sized mammals including deer mice, voles, and rats; on plant roots; on reptiles and their eggs; and on birds and their eggs. Badgers are opportunistic foragers and their food sources shift seasonally with availability.

Badgers generally breed in late summer or early fall, experiencing a delayed implantation. Although the badger female is technically pregnant for seven months, actual gestation takes 6 weeks. Most cubs (pups or kits) are born in March or April and litter size ranges from 1 to 5 with an average of 3 (Long 1973). Females can breed as young as 4 to 6 months of age;

however, their first litter usually occurs after one year of age. Males do not usually breed until after their second year. Badger cubs are born blind, furred and helpless (ibid). Their eyes open between 4 and 6 weeks of age, and they are nursed for approximately 2 months. After 2 months of age the mother starts supplementing their diet with solid food, usually small rodents. Most young disperse shortly after weaning, while some remain in their natal area until the next breeding season. They may roam up to 100 km (62 miles) to find their own home range. The average life of badgers in the wild is between 8 and 12 years.

The home range size for badgers varies by sex, season and prey base, with males having larger home ranges than females. One study indicated males had an average home range of 2,100 acres, while one radio collared female had a home range of 1,790 acres in summer, 131 acres in fall, and only 5 acres during the winter (Sargeant and Warner 1972). Another study indicated a home range size between 667 and 1,550 acres for both sexes (Lindzey 1978).

Badgers often hunt for prey by digging into fossorial mammal burrows. Coyotes have been known to follow badgers to take advantage of an easy meal as rodents are flushed from their burrows. Badgers may enlarge hunting burrows for sleeping and protection from weather. During the summer months, they dig new resting burrows nearly every day; these burrows are usually only a few feet deep. Their natal dens are more permanent and may be as much as 30 feet long and 10 feet deep (Banfield 1974).

Badgers are ferocious animals and have few natural predators, though they can be preyed upon by bear (*Ursus americanus*), bobcat, and cougar. As discussed above, the main threat to badgers comes from anthropogenic effects.

Occurrence on the site. Habitat is present on the project site and this species has been observed on the ranch during PNWB surveys and by the prior resident rancher.

2.4 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, 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 3.2.4 of this report for additional information.

A wetland delineation was conducted on the proposed quarry site in fall 2016 and a verification site visit was conducted with USACE in spring 2017. During the verification site visit, USACE claimed Intermittent Drainage Channels 1 through 4, a small seasonal wetland within Intermittent Drainage 3, and both Sargent and Tar Creeks within the footprint of proposed project crossings as jurisdictional waters of the U.S. Additionally, the USACE disclaimed several ephemeral channels that did not support an OHW mark on opposing banks. Both Figure 4, which depicts habitats of the site, and the Table 3a habitat acreages depict all hydrologic features on the quarry site claimed by USACE during the verification site visit. Potentially necessary geotechnical setbacks have been recently identified for all four mining phases of the project. An additional formal wetland delineation survey was conducted on these areas in summer 2017 but has not yet been verified by USACE. The Phase 3 and 4 setback areas support hydrologic features that may also be considered jurisdictional by the USACE including a wetland seep spring south of Phase 3; and a short reach of intermittent channel, a stock pond and a small seasonal wetland north of Phase 4. Seasonal wetlands, springs and stock ponds occurring within the setback areas would likely be considered jurisdictional by RWQCB; and the intermittent drainages of the site and setback areas may also be considered jurisdictional by CDFW and RWQCB to the top of the bank or the dripline of associated riparian vegetation, whichever is greater.

3.0 IMPACTS AND MITIGATIONS

3.1 SIGNIFICANCE CRITERIA

General plans, area plans, and specific projects are subject to the provisions of the California Environmental Quality Act (CEQA). The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are constructed. For example, site development may require the removal of some or all of its existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc. could potentially replace those species formerly occurring on a 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. These impacts may be considered significant or not. According to *Guide to the California Environmental Quality Act*, "Significant effect on the environment" is interpreted as 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 will:

- have a substantial adverse effect, the 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 site;

- reduce substantially the habitat of a fish or wildlife species, including causing a fish or wildlife population to drop below self-sustaining levels or threaten to eliminate an animal community;

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

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

Furthermore, CEQA Guidelines Section 15065 states that a project may trigger the requirement to make a "mandatory findings of significance" if "the project has the potential to subsequently 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 on an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory."

3.2 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 both the CDFW and 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 Wildlife 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 responding 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.

3.2.3 Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Wildlife 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 The Bald and Golden Eagle Protection Act

The Bald Eagle Protection Act of 1940 (16 U.S.C. 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: "disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or

sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior'' (72 FR 31132; 50 CFR 22.3).

3.2.5 Bats

Section 2000 and 4150 of the California Fish and Wildlife 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).

As recently determined by the United States Supreme Court in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (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* 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. 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 (EPA and USACE 2007).

The USACE regulates the filling or grading of such waters 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 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987).

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 (CDFW) 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 (2003). 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 which protect the habitat values of the drainage in question.

3.2.7 Santa Clara County Tree Ordinance

Santa Clara County has relevant ordinances in the Municipal Code under Division C16 "Tree Preservation and Removal".

> "it shall be unlawful for any person to remove any protected tree on any private or public property in designated areas of the County without having first obtained an administrative permit [(a) through (e) below] from the County Planning Office or an encroachment permit [(f) below] from the Department of Roads and Airports."

"A protected tree shall consist of any of the following:

> (a) Any tree having a main trunk or stem measuring 37.7 inches or greater in circumference (12 inches or more in diameter) at a height of 4½ feet above ground level, or in the case of multi-trunk trees a total of 75.4 inches in circumference (24 inches or more of the diameter) of all trunks in the following areas of the County:
>
> (1) Parcels zoned "Hillsides" (three acres or less);
>
> (2) Parcels within a "-d" (Design Review) combining zoning district;
>
> (3) Parcels within the Los Gatos Hillside Specific Plan Area.
>
> (b) Any tree within the "-h1" Historic Preservation zoning district for New Almaden having a main trunk or stem measuring six inches or more in diameter (18.8 inches or greater in circumference) at a height of 4.5 feet above ground level, or in the case of multi-trunk trees, a total of 12 inches in diameter (37.7 inches in circumference) of all trunks at 4.5 feet above ground. For parcels having a base zoning district of "HS, Hillside" within the "-h1" combining zoning district, this provision supersedes C16-3(a)(1).

(c) Any heritage tree, as that term is defined in Section C16-2.

(d) Any tree required to be planted as a replacement for an unlawfully removed tree, pursuant to Section C16-17(e) of this division.

(e) Any tree that was required to be planted or retained by the conditions of approval for any use permit, building site approval, grading permit, architectural and site approval (ASA), design review, special permit or subdivision.

(f) On any property owned or leased by the County, any tree which measures over 37.7 inches in circumference (12 inches or more in diameter) measured 4.5 feet above the ground, or which exceeds 20 feet in height.

(g) Any tree, regardless of size, within road rights-of-way and easements of the County, whether within or without the unincorporated territory of the County."

3.2.8 Heritage Trees in Santa Clara County

Under Municipal Code Section C16-12, a Heritage Tree is defined as:

> "Any tree which, because of its history, girth, height, species, or other unique quality, has been recommended by the Historical Heritage Commission (HHC) and found by the Board of Supervisors to have a special significance to the community shall be designated a heritage tree. Such trees shall be listed individually on the heritage resource inventory, adopted by resolution of the Board of Supervisors. Such resolution may be amended as necessary to add or delete trees from the inventory."

A permit is required for the removal of Heritage Trees.

3.2.9 The Santa Clara Valley Habitat Conservation Plan

Six local partners (the County of Santa Clara, Santa Clara Valley Transportation Authority, Santa Clara Valley Water District, and the Cities of San Jose, Gilroy, and Morgan Hill) along with two wildlife agencies, the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service, prepared and adopted the multi-species Santa Clara Valley Habitat Conservation Plan (SCVHP) which primarily covers southern Santa Clara County, as well as the City of San Jose with the exception of the bayland areas. The SCVHP addresses listed species

and species that are likely to become listed during the plan's 50-year permit term. The eighteen covered species include nine plants and nine animals. The animal species covered include, but are not limited to, the California tiger salamander, California red-legged frog, western pond turtle, and western burrowing owl. Most of the nine plant species covered are species that are endemic to serpentine soils. The SCVHP requires that the agencies comment on reportable interim projects and recommend mitigation measures or project alternatives that would help achieve the preliminary conservation objectives and not preclude important conservation planning options or connectivity between areas of high habitat value. Funding sources for the SCVHP include development fees based on land cover types (natural, agricultural or small vacant sites surrounded by urban development). Additional fees are charged based on the occurrence of certain sensitive habitat types such as serpentine grasslands, streams, ponds and wetlands.

It should be noted that only certain development activities are covered by the SCVHP; and covered activities do not include the development of quarries. However, the quarry has been designed to be consistent with SCVHP goals and conditions.

3.2.9.1 SCVHP Development Fees

Chapter 9 of the SCVHP identifies fees that may be required by development projects for their development area (considered the project site plus a 50-foot buffer) based on the Fee Zone(s) within which the development area occurs, along with additional Nitrogen Deposition Fees and specialty fees for sensitive habitats such as wetlands and streams. The current (2017) SCVHP development fee schedule is provided below.

SCVHP 2017 Development Fees	
Fee Zones	**Fees**
Fee Zone A (Ranchlands and Natural Lands)	$20,167 per acre
Fee Zone B (Agricultural and Valley Floor Lands)	$13,982 per acre
Fee Zone C (Small Vacant Sites Under 10 Acres)	$5,108 per acre
Nitrogen Deposition Fees and Specialty Fees	**Fees**
Nitrogen Deposition	$4.70 per new daily vehicle trip

SCVHP 2017 Development Fees	
Fee Zones	**Fees**
Willow Riparian Forest and Mixed Riparian	$155,577 per acre
Central California Sycamore Woodland	$284,168 per acre
Freshwater Marsh	$190,782 per acre
Seasonal Wetland	$417,419 per acre
Pond	$170,736 per acre
Streams	$654 per linear foot
Serpentine	$65,627 per acre
Burrowing Owl	$56,166 per acre

3.2.9.2 Land in Lieu of Fees

The SCVHP provides for the option of protecting conservation lands in lieu of fees. Land in lieu of fees may include lands coordinated with the County Parks, Open Space Authority, or other organization. Wetland fees cannot be waived, however, restoration or creation, management, and monitoring of onsite wetlands, streams, ponds, or riparian for mitigation may replace some or all wetland fees for a site if approved by the Implementing Entity. Land in lieu of fee must be approved by the Implementing Entity for the Santa Clara Valley Habitat Conservation Plan, CDFW and USFWS. If approved, land in lieu of fee will become part of the Reserve System under the SCVHP once success criteria have been met (for restoration projects). Off-site conservation lands in lieu of fee may be acceptable if both the Implementing Entity and the Wildlife Agencies (CDFW and USFWS) approve the proposed conservation lands. It is important to note that land in lieu of fees only off-sets costs related to land fees, and does not include an off-set for management fees. The Implementing Entity has approved a Draft Resolution identifying which fees are offset by 'land in lieu of fee' and which fees cannot be offset by dedication of land. Fees that are offset include land cover, serpentine, burrowing owl, and/or temporary impact fees. Fees that cannot be offset include land management or monitoring, plan preparation, endowment, wetland, nitrogen deposition, and/or "any non-development fee charge including, but not limited to, administrative charges, processing, and evaluation charges, and other charges such as the Participating Special Entity (PSE) charge. The

dollar total of fees that cannot be offset (Land Management or monitoring, Plan Preparation and Endowment) is approximately 35 percent of a site's total land cover fees.

3.2.9.3 Conditions on Covered Activities

The SCVHCP sets forth twenty conditions for covered activities under the SCVHCP.

Potentially applicable conditions for this project can be found in Chapter 6 of the SCVHCP (Appendix D) and are listed below:

- **Condition 1 (page 6-7). Avoid Direct Impacts on Legally Protected Plant and Wildlife Species-** Condition 1 instructs developers to avoid direct impacts on legally protected plant and wildlife species, including federally endangered Contra Costa goldfields and fully protected wildlife species including the golden eagle, bald eagle, American peregrine falcon, southern bald eagle, white-tailed kite, California condor, and ring-tailed cat. Several of these species have either been documented on the Sargent Ranch property and likely to occur on or forage over the project site, or they have not been observed, but the project site provides potential habitat for them (golden eagle, bald eagle, American peregrine falcon, white-tailed kite). Condition 1 also protects bird species and their nests that are protected under the Migratory Bird Treaty Act (MBTA); additionally, golden eagles and bald eagles are protected under the Bald and Golden Eagle Protection Act. Additionally, page 6-94 and Table 6-8 identify required surveys for breeding habitat of select covered wildlife species; of the species noted, the project will likely be required to conduct species-specific surveys for the western burrowing owl.

- **Condition 2 (page 6-9). Incorporate Urban-Reserve System Interface Design Requirements-** Condition 2 provides design requirements for the urban-reserve system interface. Some of the design requirements included in Condition 2 are installing non-permeable fences between urban and reserve areas, fencing public roads that run adjacent to reserve areas, minimizing the length of shared boundaries between urban and reserve areas, outdoor lighting limitations, and landscaping requirements.

- **Condition 3 (page 6-12). Maintain Hydrologic Conditions and Protect Water Quality-** Condition 3 applies to all projects. This condition identifies avoidance and minimization measures, performance standards, and control measures to minimize increases of peak discharge of stormwater and to reduce runoff of pollutants to protect water quality during construction and operation. A complete list of aquatic avoidance and minimization measures can be found in Table 6-2 of the plan.

- **Condition 4 (page 6-14). Avoidance and Minimization for In-Stream Projects-** Condition 4 minimizes impacts on riparian and aquatic habitat through appropriate design requirements and construction practices and provides avoidance and minimization measures for in-stream projects that may impact stream morphology, aquatic and riparian habitat, flow conditions, covered species, natural communities, and wildlife movement.

- **Condition 5 (page 6-18). Avoidance and Minimization Measures for In-Stream Operations and Maintenance-** Condition 5 provides avoidance and minimization measures for in-stream operations and maintenance activities, which includes, but is not limited to trail, bridge, road, and culvert maintenance, bank stabilization, removal of debris, and vegetation management.

  Avoidance and minimization measures for Conditions 3-5 can be located in Table 6-2 of the SCVHP; these measures relate to stormwater runoff, in-stream channel and floodplain impacts, vegetation control and/or maintenance, materials a project should and should not use, landscaping and revegetation, free-span bridges at stream crossings, culverts, trails, levees, erosion control, and construction requirements and timing.

- **Condition 6 (Page 6-21) Design and Construction Requirements for Covered Transportation Projects.** Condition 6 provides requirements for rural development design, construction, and post-construction. Types of projects that Condition 6 includes highway projects, mass transit projects, roadway projects and interchange upgrades, road safety and operational improvements, and dirt road construction.

- **Condition 7 (page 6-28) Rural Development Design and Construction Requirements.** Condition 7 provides requirements for development design and construction of new development outside of the urban service area including requirements relating to site hydrology, vineyards, private rural roads, vegetation management, soils, and lighting.

- **Condition 8 (page 6-35) Implement Avoidance and Minimization Measures for Rural Road Maintenance.** Condition 8 provides requirements for rural roads, road median, and barrier maintenance including requirements regarding riparian setbacks, erosion measures, herbicide and pesticide use, seasonal restrictions, mower cleaning, revegetation, ground-disturbing road maintenance, and flow lines.

- **Condition 9 (page 6-37) Prepare and Implement a Recreation Plan.** Condition 9 requires providing public access to all reserve lands owned by a public entity; each reserve land must provide a recreation plan.

- **Condition 10 (page 6-42) Fuel Buffer.** Condition 10 provides requirements for fuel buffers between 30 and 100 feet of structures. Requirements include measures relating to fuel buffers near structures and on reserve lands; the most notable measure is the requirement for nesting bird surveys prior to any fuel buffer maintenance during the nesting season.

- **Condition 11 (page 6-44) Stream and Riparian Setbacks.** Condition 11 provides requirements for stream and riparian setbacks; as the development area is outside the Urban Service Area, stream setbacks measured from the top of the stream bank should be 35 to 250 feet depending on the category rating of the stream and the slope class. Setbacks for Category 1 streams with 0-30% slopes should be at least 150 feet, and with >30% slopes should be at least 200 feet. Category 2 streams should have a setback of 35 feet.

- **Condition 12 (page 6-56) Wetland and Pond Avoidance and Minimization.** Condition 12 provides measures to protect wetlands and ponds, including planning actions, design, and construction actions. The project would complete a wetland delineation to confirm the distribution and condition of the wetlands onsite.

- **Condition 13 (page 6-58) Serpentine and Associated Covered Species Avoidance and Minimization.** Condition 13 requires surveys for special status plants and the Bay checkerspot butterfly as well as its larval host plant in areas that support serpentine bunchgrass grassland, serpentine rock outcrops, serpentine seeps, and serpentine chaparral. Fees apply for impacts to serpentine habitat.

- **Condition 14 (page 6-60) Valley Oak and Blue Oak Woodland Avoidance and Minimization.** Condition 14 provides requirements for project planning and project construction, including avoidance of large oaks, guidance on irrigation near oak trees, and a buffer around the root protection zone, roads and pathways within 25 feet of the dripline of an oak tree, trenching, and pruning activities.

- **Condition 15 (page 6-62) Western Burrowing Owl.** Condition 15 requires preconstruction surveys for burrowing owls in appropriate habitat prior to construction activities, provides avoidance measures for owls and nests in the breeding season and owls in the non-breeding season, and requirements for construction monitoring.

- **Condition 16 (page 6-68) Least Bell's Vireo.** Condition 16 requires preconstruction surveys in appropriate habitat for the least Bell's vireo prior to construction activities, and provides avoidance and construction monitoring measures.

- **Condition 17 (page 6-69) Tricolored Blackbird.** Condition 17 requires preconstruction surveys in appropriate habitat for the tricolored blackbird prior to construction activities, and provides avoidance and construction monitoring measures.

- **Condition 18 (page 6-71) San Joaquin Kit Fox.** Condition 18 requires preconstruction surveys in appropriate habitat for the San Joaquin kit fox prior to construction activities, and provides avoidance and construction monitoring measures.

- **Condition 19 (page 6-74) Plant Salvage when Impacts are Unavoidable.** Condition 19 provides salvage guidance and requirements for covered plants.

- **Condition 20 (page 6-76) Avoid and Minimize Impacts to Covered Plant Occurrences.** Condition 20 provides requirements for preconstruction surveys for appropriate covered plants (per habitat).

3.2.9.4 SCVHP Biological Goals, Objectives, and Conservation Actions

Tables 5-1a, b, c, and d of the SCVHCP provides information about the biological goals, objectives, and conservation actions of the SCVHCP including landscape level goals (Table 5-

1a), natural community level goals (Table 5-1b), wildlife goals (Table 5-1c), and plant goals (Table 5-1d) (ICF International 2012).

3.3 ENVIRONMENTAL IMPACT/MITIGATION

The quarry project will result in the conversion of approximately 298 acres, including approximately 265 acres of natural habitats, and approximately 6,500 linear feet of mostly intermittent channels, while proposing to preserve in-perpetuity approximately 400 acres of similar natural habitats on-site in a conservation easement, including over 11,000 linear feet of intermittent channels. Should recently identified geotechnical setback areas be required in the future, these setback areas could result in up to the additional conversion of approximately 120 acres of natural habitats, including a wetland seep, a seasonal wetland and a stock pond that provides breeding habitat for CRLF. The project could result in potentially significant impacts to a number of special status species, including, but not limited to, steelhead trout, CRLF, burrowing owls, San Francisco dusky-footed woodrat, and American badger. The project also could result in significant impacts to sensitive habitats including streams, creeks and wetlands that are considered jurisdictional waters of the U.S. and state. These potential impacts to sensitive biological resources resulting from the development of the quarry, and mitigations that would be required to lessen these impacts to a less-than-significant level are discussed further below.

3.3.1 Conflict with an Adopted Habitat Conservation Plan

Potential Impact. The project site is within the area covered by the Santa Clara Valley Habitat Conservation Plan (SCVHP) (ICF 2012) as already discussed above; however, quarry projects are not considered covered activities under the SCVHP, and therefore the project will not be subject to the fees and conditions of the SCVHP directly. Nonetheless, we have used the SCVHP as a framework for our evaluation and mitigation of biological impacts, and have ensured that mitigations are consistent with the goals and objectives of the SCVHP. A more detailed discussion of the SCVHP including all conditions on covered activities is provided in **Section 3.2.9** of this report, above. The SCVHP requires the payment of development fees based on land cover types within the development area for covered activities. For projects occurring outside the SCVHP's Urban Service Area (USA), the development area includes the project footprint plus a

50-foot buffer for permanent impacts. Per the SCVHCP Geobrowser, the approximately 300-acre project site primarily consists of lands considered to be Zone A Lands (Ranchlands and Natural Lands) and the current 2016 fees for Zone A lands are $19,159 per acre. Additionally, the project site supports drainages that would be considered Category 2 streams under the SCVHP; and the access road for Phase 1 will traverse Sargent Creek, which is considered a Category 1 stream; and the plant site and overburden areas occur in proximity to Tar Creek, also considered a Category 1 stream. The SCVHP requires that projects be set-back 35 feet from Category 2 streams and 150 feet from Category 1 streams to avoid stream specialty fees. The 2016 specialty fees for these stream habitats are $638 per linear foot.

In lieu of the payment of some or all development fees, the SCVHP Entity may accept "land in-lieu" in exchange for development fees and specialty fees for impacts to all land cover types with the exception of wetland specialty fees. The decision to accept land-in-lieu is currently negotiated on a case by case basis with the SCVHCP Entity. In addition to the payment of fees or provision of "land in lieu"; the project would be required to comply with SCVHCP conditions that are applicable to the project.

Mitigation. Although the project would not be considered a covered activity under the SCVHP and is not subject to the fees and conditions of the plan, aspects of the project have been designed to be consistent with the goals and objectives of the plan. For instance, the project includes minimum 150 foot and 35-foot setbacks from Tar Creek and Sargent Creek, respectively, with the exception of the road and conveyor belt crossings of the creeks. Additionally, where applicable, the project will incorporate avoidance and minimization measures from the HCP to avoid or lessen impacts on special status species and sensitive aquatic habitats. In situations where the project will result in a significant impact on biological resources, mitigations are provided further on in this section, such as the establishment of a conservation easement and pre-construction surveys that would be consistent with requirements and conditions of the SCVHP.

3.3.2 Potential Impacts to Steelhead

Impact: Construction of the Tar Creek bridge will occur within and in proximity to areas that are used as migration, breeding and rearing habitat for steelhead trout. The bridge is proposed as an

arch culvert that will span the most sensitive aquatic habitat of the creek, with maintenance of a natural creek bottom and with footings placed outside the wetted channel. The bridge, as proposed, will not result in direct loss of habitat for steelhead or impede migration up and down stream. Currently, there is an at-grade crossing at this location, with related erosion and sedimentation due to vehicles travelling through the wetted channel. To a minor extent, the bridge will result in an improved condition to vehicles crossing directly through the creek. However, during construction, potential adverse impacts could occur as a result of grading that leaves soils susceptible to erosion and sedimentation that could affect water quality and result in indirect impacts to native aquatic species. Additionally, should bridge construction require impacts within the wetted channel, should adult or juvenile steelhead be present, construction could result in harm or mortality to individual steelhead trout. These impacts may be considered significant under CEQA.

Mitigation Measure 3.3.2. Although the steelhead is not a species covered under the SCVHCP, the project will incorporate SCVHCP measures contained in both Condition 3 and Condition 4, as applicable to the project. We believe by incorporating these measures, which are designed to protect water quality, sensitive riparian habitats and aquatic species, construction of the Tar Creek bridge will avoid direct and indirect impacts to steelhead. These conditions include:

- **Condition 3 Maintain Hydrologic Conditions and Protect Water Quality.** This condition identifies avoidance and minimization measures, performance standards, and control measures to minimize increases of peak discharge of stormwater and to reduce runoff of pollutants to protect water quality during construction and operation. A complete list of aquatic avoidance and minimization measures can be found in Table 6-2 of the plan.

- **Condition 4 Avoidance and Minimization for In-Stream Projects.** Minimize impacts on riparian and aquatic habitat through appropriate design requirements and construction practices and provides avoidance and minimization measures for in-stream projects that may impact stream morphology, aquatic and riparian habitat, flow conditions, covered species, natural communities, and wildlife movement.

The full list of avoidance and minimization measures from the HCP is provided in Appendix D and includes, but is not limited to, measures related to stormwater runoff, in-stream channel impacts, erosion control, dewatering activities, and construction requirements and timing.

Implementation of HCP Condition 3 and 4 avoidance and minimization measures would reduce potential impacts to steelhead trout to a less-than-significant level.

3.3.3 Potential Impacts to California Tiger Salamander Habitat and Individuals

Potential Impact. As discussed above, there have been four CTS larval surveys conducted on Sargent Ranch between 2000 and 2017. While not all potential breeding habitats for CTS were evaluated in all four surveys, there was a definite pattern in that there have only been two ponds on the ranch where CTS have been found successfully breeding. Both of the latter ponds occur approximately 4,500 feet north from the closest project boundary on the other side of Tar Creek. The only other feature where CTS larva have been found is a small wetland within Intermittent Drainage 3 on proposed Phase 3 but this feature has been confirmed to dry up in even wet years by early spring and therefore, it does not have the proper hydrology to support successful breeding in that the wetland dries before larva can metamorphose and migrate to upland habitats.

As also indicated prior, while the resource agencies use 1.24 miles as the maximum distance that CTS estivate from breeding ponds, research has indicated that the vast majority, i.e. 95%, of CTS, will estivate within 620 meters (or approximately 2,000 feet) from their breeding pond, and that 99% will estivate within approximately 1,126 meters (or approximately 3,790 feet). As the closest project boundary to the two confirmed breeding ponds is approximately 4,500 feet, it appears that the project will have a less than significant impact on individuals or on estivation habitat for this species.

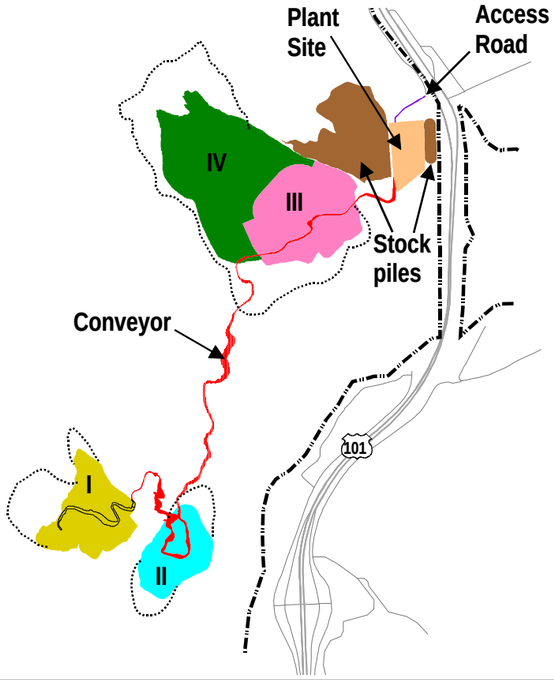
Additionally, the project already includes 392 acres on the Sargent Ranch property for preservation and dedication to the SCVHP Habitat Agency or other public or private land conservation entity to compensate for a loss of habitat for special status species on the project site. These conservation lands provide similar or higher quality habitat values for CRLF and other special status species that may be impacted by the project, including being immediately adjacent to 1.2 acres of ponds and 1.0 acres of seasonal wetlands that provide known breeding habitat for CRLF adjacent to and on the west of Sargent Creek; and a mosaic of other habitats including approximately 250 acres of grasslands, almost 46 acres of coast live oak forest and mixed oak forest, and approximately 90 acres of scrub and chaparral habitats. Additionally, more

than 11,000 linear feet of drainages occur on the conservation lands that would likely be considered Category 2 streams under the HCP. These lands have over one mile of frontage near Sargent Creek, an important north-south corridor for native wildlife, and links open space lands to the west and east, therefore should continue to facilitate movement of wildlife across upland habitats from east to west. Lands that are proposed for preservation are depicted in Figure 8 and habitats present within the proposed conservation easement area, along with acreages, are detailed in Table 5. In addition, the project proponent will define and provide for a financial mechanism such as a non-wasting endowment that funds the management of the preserved lands into perpetuity.

Mitigation Measure 3.3.3. No additional mitigation is required to compensate for a loss of CTS habitat, however, in the unlikely event that salamanders occur in the upland areas of the project during project construction, potentially individual salamanders could be harmed or killed by project activities. Therefore, implementation of the following measures, partially summarized below and described more fully in Appendix C, should be taken during any construction related to the development of the quarry facilities and roads occurring within 100 feet of any riparian or aquatic resource.

- Prior to the start of construction, a qualified biologist will train all construction personnel regarding habitat sensitivity, identification of special status species potentially occurring on the site, and required practices.
- Pre-construction surveys will be conducted to ensure that CTS are absent from the construction area. If CTS are present, they should be relocated by a qualified biologist.
- The construction zone should be cleared, and silt fencing should be erected and maintained around construction zones to prevent CTS from moving into these areas.
- A biological monitor will be present onsite during particular times of construction to ensure no CTS are harmed, injured, or killed during project buildout.
- To minimize harm or mortality to individual CTS during migration movements, a maximum speed limit of 10 mph for vehicle traffic on quarry access roads should be enforced during project operation, and to the extent possible, quarry activities should be confined to daylight hours.

Areas Grouped in Table Above



LEGEND

392 Ac. Mitigation Area Boundary

Sargent Ranch Property Boundary

Geotechnical Setback Boundary

Habitats

252.4 Ac. California Annual Grassland

26.9 Ac. Coast Live Oak Forest and Woodland

19.3 Ac. Mixed Oak Woodland and Forest

46.1 Ac. Northern Coastal Scrub / Diablan Sage Scrub

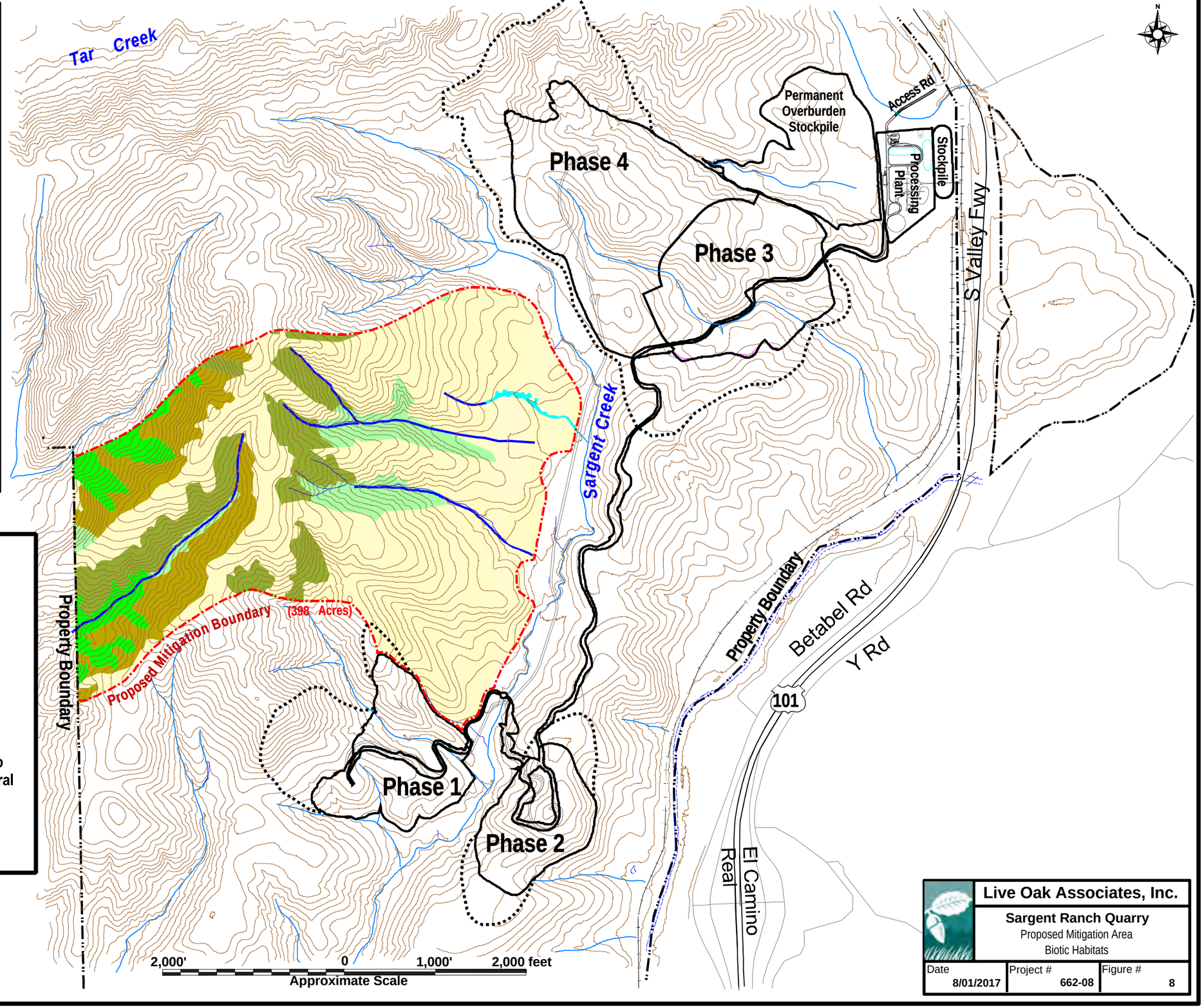
45.8 Ac. Northern Mixed Chaparral / Chamise Chaparral

1.0 Ac. Seasonal Wetland

Hydrology

11,169 L.F. Drainages with defined bed and bank

Sources:
Triad Holmes Assoc.
Santa Clara County HCP Land Cover
Santa Clara County LIDAR Topographic Survey
Pacific North Western Biological Resources Consultants, Inc. 2001.
Biological Resources Assessment for the Proposed Sargent Ranch Conservation Bank Agreement



Live Oak Associates, Inc.

Sargent Ranch Quarry
Proposed Mitigation Area
Biotic Habitats

Date	Project #	Figure #
8/01/2017	662-08	8

Table 5. Habitats of the Conservation Easement Area		
Habitats	**Acreages**	**Value**
California Annual Grassland	252.4	California tiger salamander estivation habitat; potential burrowing owl habitat; American badger habitat; foraging habitat for many special status birds.
Coast Live Oak Forest and Woodland	26.9	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Mixed Oak Woodland and Forest	19.3	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Northern Coastal Scrub/Diablan Sage Scrub	46.1	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Northern Mixed Chaparral/Chamise Chaparral	45.8	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Seasonal Wetland	1.0	Known CRLF breeding habitat; potential CTS breeding habitat. Seasonal source of drinking water for many common and special-status animals. USACE and RWQCB jurisdictional habitat.
Total	392.0	
Creeks, Streams and Drainages	**Linear Feet of Channel**	**Value**
Intermittent Drainages with Defined Bed and Bank (primarily HCP Category 2 streams)	11,169	Potential CDFW, USACE and RWQCB jurisdictional habitat.

Regulatory issues. Although in our opinion impacts to CTS habitat and individuals would be less-than-significant under CEQA, the applicant may need to comply with provisions of the federal and state Endangered Species Acts and may need to seek take authorization from both the USFWS and CDFW for project-related losses as required by law. To obtain a federal take permit, consultation with the U.S. Fish and Wildlife Service would need to be initiated either through a federal nexus (i.e., Section 7 consultation through the USACE) or through the HCP process (i.e., Section 10 consultation).

3.3.4 Potential Impacts to California Red-Legged Frog Habitat and Individuals

Potential Impact. The presence of CRLF has been confirmed throughout the greater Sargent Ranch property in close proximity to the proposed quarry sites. Indirect impacts to these sensitive habitats could include impacts to water quality and disturbance as a result of noise; and could also result in harm or mortality to individual frogs as a result of vehicle traffic. The project would also result in the direct loss of suitable upland habitat for this species in the form of grassland and woodland habitat; and could result in harm or mortality to individual CRLF should they occur in these habitats during project implementation. Additionally, as indicated above,

riparian habitats associated with Sargent and Tar Creeks occur in proximity, i.e. within 200 feet, of project footprints. These riparian habitats likely provide foraging and movement habitat for CRLF.

In addition to potential upland habitat for CRLF, should it be determined in the future that geotechnical setback areas will be required for Phase 3 and 4, potentially this will impact a stock pond that provides breeding habitat for CRLF.

Direct and indirect impacts to CRLF breeding, foraging and movement habitat, as well as harm or mortality to individual CRLF, would be considered a significant impact under CEQA.

The project already includes 392 acres on the Sargent Ranch property for preservation and dedication to the SCVHP Habitat Agency or other public or private land conservation entity to compensate for a loss of upland habitat for special status species on the project site. These conservation lands provide similar or higher quality upland habitat values for CRLF and other special status species that may be impacted by the project, including being immediately adjacent to 1.2 acres of ponds and 1.0 acres of seasonal wetlands that provide known breeding habitat for CRLF adjacent to and on the west of Sargent Creek; and a mosaic of other habitats including approximately 250 acres of grasslands , almost 46 acres of coast live oak forest and mixed oak forest, and approximately 90 acres of scrub and chaparral habitats. Additionally, more than 11,000 linear feet of drainages occur on the conservation lands that would likely be considered Category 2 streams under the HCP. These lands have over one mile of frontage near Sargent Creek, an important north-south corridor for native wildlife, and links open space lands to the west and east, therefore should continue to facilitate movement of wildlife across upland habitats from east to west. Lands that are proposed for preservation are depicted in Figure 8 and habitats present within the proposed conservation easement area, along with acreages, are detailed in Table 5. In addition, the project proponent will define and provide for a financial mechanism such as a non-wasting endowment that funds the management of the preserved lands into perpetuity.

Mitigation Measure 3.3.4. Implementation of the following mitigation measures would reduce impacts to CRLF to a less-than-significant level.

The primary approach to mitigate impacts to CRLF would be based upon 1) avoidance of riparian and aquatic resources of the site to the maximum extent possible, 2) implementation of minimization measures, 3) compensation for impacts to suitable upland and aquatic habitats via the preservation of open space lands that contain higher quality suitable upland and aquatic habitats.

Avoidance. Avoidance of a sensitive resource is usually considered the preferred mitigation for any project. Therefore, from a standpoint of avoiding impacts to CRLF, the project should be designed in ways that avoid impacts to riparian and aquatic habitats, and their immediately adjacent upland habitats, to the maximum extent practicable. Except for the Phase 1 and Phase 2 access road which will traverse Sargent Creek in one location in the southern portion of the site, the project as currently designed avoids direct impacts to riparian resources of the site; and the project avoids indirect impacts to such habitat via a minimum of a 150 foot setback from Sargent and Tar Creeks.

Minimization. The project should be designed, built, and operated in ways that minimize both direct and indirect impacts to the CRLF. Implementation of the following measures, partially summarized below and described more fully in Appendix C, should be taken during any construction of quarry facilities and roads occurring within 100 feet of any riparian or aquatic resource.

- Prior to the start of construction, a qualified biologist approved should train all construction personnel regarding habitat sensitivity, identification of special status species, and required practices.
- Pre-construction surveys should be conducted to ensure that CRLF are absent from the construction area. If CRLF are present, they should be relocated by a qualified biologist.
- The construction zone should be cleared, and silt fencing should be erected and maintained around construction zones to prevent CRLF from moving into these areas.
- A biological monitor should be present onsite during particular times of construction to ensure no CRLF are harmed, injured, or killed during project buildout.
- To minimize harm or mortality to individual CRLF during migration movements, a maximum speed limit of 10 mph for vehicle traffic on quarry access roads should be enforced during project operation, and to the extent possible, quarry activities should be confined to daylight hours.

Compensation. Although the preservation of 392 acres of habitat would compensate for the loss of CRLF upland habitats as a result of the quarry project, the land being set aside would not fully compensate for the loss of breeding habitat, should such habitat be lost due to the geotechnical setbacks. In such event, the following additional mitigation will be implemented:

The applicant shall identify and preserve in perpetuity a known CRLF breeding pond on-site with preserved connectivity to the project's mitigation area.

If no such existing breeding pond can be identified on the site, the applicant shall identify a suitable location for creation of a pond on preserved conservation lands that will be maintained and managed as breeding habitat for CRLF.

Alternatively, if no on site opportunities exist for either preservation or creation of breeding habitat, CRLF credits at a mitigation bank may be purchased at a minimum 1:1 ratio.

Regulatory issues. In addition to mitigation for potential project impacts to CRLF under CEQA, the applicant would need to comply with provisions of the federal Endangered Species Act and would need to seek take authorization from the USFWS for project-related losses as required by law. To obtain a take permit, consultation with the U.S. Fish and Wildlife Service would need to be initiated either through a federal nexus (i.e., Section 7 consultation, usually through the USACE or the Bureau of Land Management) or through the HCP process (i.e., Section 10 consultation).

3.3.5 Potential Impacts to Western Pond Turtles

Potential Impact. Western pond turtles (WPT) have been documented in the pond approximately 1500 feet southeast of Phase 4 of the project. Although there are no known occurrences of WPT within Sargent or Tar Creeks, in wet years, both of these creeks may provide foraging and movement habitat for this species. Although the project has been designed to be set back 150 feet from these aquatic resources, the access road for Phase 1 will require construction of a crossing over both Sargent and Tar Creeks. Should this work commence during the dry season then it would not be expected that turtles would be in or near Sargent or Tar Creeks; however, any activities within 150 feet of the creek during the wet season when the

creeks are inundated could result in harm or mortality to individual western pond turtles should they be present, and this may be considered a significant impact under CEQA.

Mitigation Measure 3.3.5. Implementation of the following measures would reduce impacts to WPT to a less-than-significant level.

Avoidance, minimization and compensation measures included in Mitigation Measures 3.3.2 and 3.3.3 for CTS and CRLF, respectively, would also reduce impacts to individual WPT to a less-than-significant level. These measures would also be consistent with the goals and objectives of the SCVHP.

3.3.6 Potential Impacts to Burrowing Owls

Impact. Burrowing owls have been observed foraging on the greater Sargent Ranch property; however, and burrowing owls have also recently, in 2016, been observed nesting on the northern portion of the greater ranch property. The project site provides potential foraging, roosting, and nesting habitat for this species. Project activities could result in a loss of habitat for this species and in impacts to individual owls should they nest or roost on the site and this would be considered a potentially significant impact. Construction activities that adversely affect the nesting success of BUOW or result in mortality of individual owls that are nesting or roosting on the site would constitute a violation of state and federal laws and would be considered a significant impact under CEQA.

Mitigation Measure 3.3.6. Implementation of the following measures would reduce impacts to BUOW habitat and to individual BUOW to a less-than-significant level. These measures would also be consistent with the goals and objectives of the SCVHCP.

- Compensation measures included in Mitigation Measures 3.3.2 and 3.3.3 for CTS and CRLF would also compensate for the loss of BUOW foraging, roosting and nesting habitat.

- The following additional measures have been taken from SCVHP Condition 15 to ensure that individual BUOW are not harmed or killed as a result of project activities, and to ensure that the project is consistent with the goals and objectives of the SCVHP, which considers the burrowing owl a “no take” species:

SCVHP Condition 15. *Prior to any ground disturbance related to covered activities, a qualified biologist will conduct preconstruction surveys in all suitable habitat areas as identified during habitat surveys. The purpose of the preconstruction surveys is to document the presence or absence of burrowing owls on the project site, particularly in areas within 250 feet of construction activity. To maximize the likelihood of detecting owls, the preconstruction survey will last a minimum of three hours. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total) or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted and their location will be mapped. Surveys will conclude no more than 2 calendar days prior to construction. Therefore, the project proponent must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last minute changes in schedule or contracting that may occur if burrowing owls are found, the project proponent may also conduct a preliminary survey up to 14 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction.*

Should the pre-construction survey determine the presence of burrowing owls on the site during the pre-construction surveys, then the following avoidance measures will be implemented as per Condition 15 of the SCVHP:

Avoidance During the Breeding Season. *If evidence of western burrowing owls is found during the breeding season (February 1–August 31), the project proponent will avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young (occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance will include establishment of a 250-foot non-disturbance buffer zone around nests. Construction may occur outside of the 250-foot non-disturbance buffer zone. Construction may occur inside of the 250-foot non-disturbance buffer during the breeding season if the nest is not disturbed, and the project proponent develops an avoidance, minimization, and monitoring plan that will be reviewed by the Implementing Entity and the Wildlife Agencies prior to project construction based on the following criteria.*

- *The Implementing Entity and the Wildlife Agencies approves of the avoidance and minimization plan provided by the project applicant.*
- *A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).*
- *The same qualified biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.*
- *If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer. Construction cannot*

resume within the 250-foot buffer until the adults and juveniles from the occupied burrows have moved out of the project site.

- *If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until the adults and juveniles from the occupied burrows have moved out of the project site.*

Avoidance During the Non-Breeding Season. *During the non-breeding season (September 1–January 31), the project proponent will establish a 250-foot non-disturbance buffer around occupied burrows as determined by a qualified biologist. Construction activities outside of this 250-foot buffer are allowed. Construction activities within the non-disturbance buffer are allowed if the following criteria are met in order to prevent owls from abandoning important overwintering sites.*

- *A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).*
- *The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.*
- *If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer.*
- *If the owls are gone for at least one week, the project proponent may request approval from the Implementing Entity that a qualified biologist excavate usable burrows to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone will be removed and construction may continue. Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.*

Construction Monitoring. *Based on the avoidance, minimization, and monitoring plan developed (as required in the above section), during construction, the non-disturbance buffer zones will be established and maintained if applicable. A qualified biologist will monitor the site consistent with the requirements described above to ensure that buffers are enforced and owls are not disturbed. The biological monitor will also conduct training of construction personnel on the avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.*

Passive Relocation*. Passive relocation would not be allowed under the Plan until the positive growth trend described in Section 5.4.6 is achieved. Once this occurs, passive owl relocation may be allowed, with the approval of the Wildlife Agencies, on project sites in the non-breeding season (September 1–January 31) if the other measures described in this condition do not allow work to continue. Passive relocation would only be proposed if the burrow needed to be removed, or had the potential of collapsing (e.g., from construction activities), as a result of the covered activity.*

If passive relocation is eventually allowed, a qualified biologist can passively exclude birds from their burrows during non-breeding season only by installing one-way doors in burrow entrances. These doors will be in place for 48 hours to ensure owls have left the burrow, and then the biologist will excavate the burrow to prevent reoccupation. Burrows will be

excavated using hand tools. During excavation an escape route will be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having the overburden collapse into the burrow and trapping owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies during Plan implementation.

***Exceptions to Passive Relocation Prohibition**. Due to the relatively low numbers of burrowing owls in the study area, it is not expected that the prohibition of passive relocation will result in project delays. However, it is possible that a covered activity could not proceed due to avoidance measures for burrowing owl in this condition if owls continually persist on a site where avoidance is not feasible. In such cases, a project proponent may apply for an exception based on the following process. For this condition, the term exception means an allowance to conduct passive relocation of burrowing owls during the non-breeding season only when this activity is not otherwise allowed. This exception process is necessary to allow reasonable use and development of a property based on the variety of constraints and factors that may affect the property. In situations where exceptions are granted, other portions of this condition may still apply. Exceptions will be used in a minority of cases with special circumstances that limit or restrict the ability of a landowner to fully apply the condition.*

The measures above designed to ensure no harm or mortality occur to individual BUOW would be applicable to each new phase of the project. Full implementation of the measures identified above would mitigate impacts to the burrowing owl to a less-than-significant level.

3.3.7 Disturbance to Nesting Raptors and Nesting Migratory Birds

Potential Impact. Habitats within the footprints of the proposed quarry project provide nesting and/or foraging habitat for a number of special status and migratory birds, including raptors. Additionally, there are known occurrences of special status birds such as tri-colored blackbird in very close proximity to the site, although the site itself lacks suitable nesting habitat for this species. Project activities including noise, ground disturbance and vegetation removal that commence during the nesting season (February 1 through August 31) could result in adult birds within the project site and its immediate vicinity abandoning their nests and result in mortality to their unfledged young. This would constitute a violation of state and federal law and would be considered a significant impact under CEQA.

Mitigation Measure 3.3.7. Implementation of the following mitigation measures would reduce impacts to nesting birds to a less-than-significant level.

To the maximum extent practicable, trees and other vegetation planned for removal should be removed during the non-breeding season (September 1 through January 31). If it is not possible to avoid tree or vegetation removal or other disturbances during the breeding season (February 1 through August 31), then a qualified biologist will conduct a pre-construction survey for tree- and ground-nesting raptors and migratory birds in all potential nesting habitat within the construction footprint and within 250 ft. of the footprint. This survey should be conducted no more than 14 days prior to the initiation of demolition/construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the later part of the breeding season (May through August). If nesting raptors or migratory birds are detected on the site during the survey, a suitable construction-free buffer will be established around all active nests. The precise dimension of the buffer (up to 250 ft.) would be determined by the qualified biologist at that time and may vary depending on location and species. Buffers will remain in place for the duration of the breeding season or until it has been confirmed by the qualified biologist that all chicks have fledged and are independent of their parents. Pre-construction surveys during the non-breeding season are not necessary (with the exception of burrowing owls, see *Impact 3.3.5*, above), as adult birds would be expected to abandon their roosts during project implementation activities and therefore, would not be expected to be harmed or killed.

Implementation of the above measures would be applicable to all four phases of the project and would mitigate impacts to nesting raptors and other birds to a less-than-significant level.

3.3.8 Potential Impacts to American Badgers

Impact. Badgers have been documented on the greater Sargent Ranch property by both PNWB and by the resident rancher. Although badgers and their dens have not been documented on the quarry project site, grasslands of the project site provide potential foraging, denning and breeding habitat for this species, and the loss of such habitat for this species may be considered a significant impact under CEQA. Additionally, should badgers occur on the site during project implementation, this may result in harm or mortality to individual badgers, and this would also be considered a significant adverse impact under CEQA.

Mitigation Measure 3.3.8. Implementation of the following mitigation measures would reduce impacts to the American badger to a less-than-significant level.

Avoidance. Pre-construction surveys that will be conducted for burrowing owls will also be used to determine the presence or absence of badgers in the development footprint, as well as within 300 feet of development.

If an active badger den is identified during pre-construction surveys within or immediately adjacent to the construction envelope, a construction-free buffer of up to 300 ft. (or distance specified by the resource agencies, i.e., CDFW) will be established around the den. Because badgers are known to use multiple burrows in a breeding burrow complex, a biological monitor should be present on the site during project development activities to ensure the buffer is adequate to avoid direct impact to individuals or den abandonment. The monitor would be necessary on the site until it is determined that young are of an independent age and project development activities would not harm individual badgers.

Once it has been determined that badgers have vacated the site, the burrows can be collapsed or excavated, and ground disturbance can proceed.

Pre-construction surveys and avoidance measures to ensure that badgers are not harmed or killed would be applicable to all project phases.

Compensation. Compensation measures included in Mitigation Measures 3.3.2 and 3.3.3 for CTS and CRLF would also compensate for the loss of American badger foraging and denning habitat on the project site.

The above mitigation measures will lessen potential impacts to badgers to a less-than-significant level.

3.3.9 Potential Impact to Special Status Plant Species

Potential Impact. Of the special status plant species potentially occurring in the region (Table 3, Figure 5), most are considered absent from the site due to a lack of suitable habitat such as serpentine grasslands, wetlands, or vernal pools. It should be noted that there is a documented occurrence in the CNDDB of one of these species, i.e. saline clover (CRPR 1B) occurring in

wetlands of the greater ranch property; however, habitat for this species is absent on the project site due to a lack of wetland or vernal pool habitats within the project boundary. Six other special status plant species are considered unlikely to occur on the project site because habitat is marginal on the site for these species and/or because the species has not been observed in the region for many decades. The latter species include showy Rancheria clover (FE, CRPR 1B), alkali milk-vetch (CRPR 1B), fragrant fritillary (CRPR 1B), Loma Prieta hoita (CRPR 1B), big-scale balsamroot (CRPR 1B), and pink creamsacs (CRPR 1B). As with saline clover, it should be noted that there is a CNDDB-documented occurrence of pink creamsacs on the greater Sargent Ranch property outside of the project site; however, the project site provides marginal habitat for these species due to the absence of serpentine soils on which this species typically occurs. The grasslands of the site provide suitable potential habitat for two special status plant species, both annual species, and these species include round-leaved filaree (CRPR 1B) (annual species; blooms March-May) and Congdon's tarplant (CRPR 1B) (annual species; blooms May-November); and appropriately timed botanical surveys in grassland habitats that will be impacted by the project would need to be conducted to rule out their presence on the site. Three botanical surveys (March, May and late September-early October) conducted within the grassland habitats of the site would be sufficient to confirm the absence of these species on the site. A full suite of rare plant surveys will be conducted within five years prior to each phase of construction and mining. Should these species occur on the project site, impacts to populations as a result of the project would need to be evaluated by a qualified botanist or plant ecologist to determine whether impacts would be considered significant. If the project would result in the loss of a significant portion of the regional population of these species, impacts may be considered significant under CEQA.

Mitigation Measure 3.3.9. Should the botanical surveys confirm that special status plants are absent from the site, then no mitigation would be required. If populations of these species are present, and if it is determined by a qualified botanist or plant ecologist that project impacts to these species are significant under CEQA, then the following mitigations will be implemented which will reduce impacts to a less-than-significant level.

Avoidance. In consultation with a botanist or plant ecologist, and to the maximum extent feasible, the project will be designed to avoid substantial direct and indirect impacts (e.g. the establishment of an appropriate sized buffer) to these species.

***Compensation*.** If the project cannot be designed to avoid significant impacts to special status plant populations, then the following compensatory measures will be implemented.

Onsite Preservation. The onsite conservation easement area should be surveyed during the appropriate blooming season to determine whether populations of the species being significantly impacted by the project are also present within areas that will be preserved. If populations of the species are present on the conservation easement, it should be determined by a qualified botanist or plant ecologist whether these populations to be preserved would adequately compensate, or partially compensate, for lost populations on the project site. If this is the case, then a Management Plan for populations occurring on the conservation easement shall be developed as part of the greater long-term management plan for the conservation easement as required under Mitigation Measure 3.3.2, above.

*Development of a Site Restoration Plan***.** If the project cannot be designed to avoid significant impacts to special status plants (as discussed above) and the easement area does not support adequate populations of the impacted species to compensate for project impacts, then a Site Restoration Plan must be developed for the significantly impacted species by a qualified botanist or plant ecologist and approved by the County prior to the start of project development. The objective of this mitigation measure would be to replace the special status plants and habitat lost during project implementation. The proposed restoration program should be monitored for a period of five years from the date of site grading. The restoration plan should contain at a minimum the following:

- Identification of appropriate locations on the conservation easement area as determined by the botanist or plant ecologist (i.e., areas with suitable soils, aspect, hydrology, etc.) to restore lost plant populations.
- A description of the propagation and planting techniques to be employed in the restoration effort. Perennial plants to be impacted by site grading should be salvaged and

raised in a greenhouse for eventual transplanting within the restoration areas. Annual plants can best be established by collecting seeds of onsite plants prior to project implementation and then directly seeding into suitable habitat on the conservation easement.

- A timetable for implementation of the restoration plan.
- A monitoring plan and performance criteria.
- A description of remedial measures to be performed in the event that initial restoration measures are unsuccessful in meeting the performance criteria.
- A description of site maintenance activities to follow restoration activities. These may include weed control, irrigation, and control of herbivory by livestock and wildlife.

*Off-site Mitigation***.** If an onsite restoration plan is not feasible, mitigation for impacted special status plant species could be accommodated through restoration or preservation at an off-site location. Any off-site restoration plan would be subject to the same minimum requirements as indicated above for an onsite restoration plan.

If off-site preservation is the mitigation alternative chosen, then the mitigation site must be confirmed to support populations of the impacted species and must be established as a conservation easement to be preserved in perpetuity. A qualified botanist or plant ecologist should prepare a Preservation Plan for the site containing, at a minimum, the following elements:

- A monitoring plan and performance criteria for the preserved plant population.
- A description of remedial measures to be performed in the event that performance criteria are not met.
- A description of maintenance activities to be conducted on the site including weed control, trash removal, irrigation, and control of herbivory by livestock and wildlife.

The project proponent will be responsible for funding the development and implementation of any onsite or off-site Preservation Plan.

3.3.10 Potential Impacts to Riparian Habitat and Other Sensitive Natural Communities, Including Federally Protected Wetlands

Potential Impact. A wetland delineation was conducted on the proposed quarry site in fall 2016 and a verification site visit was conducted with USACE in spring 2017. During the verification site visit, USACE claimed Intermittent Drainage Channels 1 through 4 and both Sargent and Tar Creeks within the footprint of proposed project crossings as jurisdictional waters of the U.S. to the extent of the Ordinary High Water (OHW) mark on opposing banks, and a small seasonal wetland within Intermittent Drainage 3. The USACE disclaimed several ephemeral and erosional channels that did not support an OHW mark on opposing banks. Both Figure 4, which depicts habitats of the site, and the Table 3a habitat acreages depict all hydrologic features on the quarry site claimed by USACE during the verification site visit. Project impacts to jurisdictional waters have been calculated at 6,570 linear feet of channels.

Based on the 2016 wetland delineation, 2017 USACE verification site visit and the final waters of the U.S. map prepared for the Jurisdictional Determination, total impacts to USACE jurisdiction within intermittent channels of the site, including Sargent Creek, as a result of the quarry project were calculated at 6,545 linear feet and 0.55 acres. Impacts to Tar Creek as a result of the access road crossing were calculated at 0.01 acre (that was assuming that the bridge impacts the OHW channel of the creek, and as the bridge is planned as an arch culvert with footing outside OHW, this is likely overstated). Additionally, the quarry will impact a small wetland which occurs within Intermittent Channel #3, calculated at 0.03 acre. Therefore, total impacts to USACE jurisdiction as a result of the project were calculated at 0.59 acres and 6,570 linear feet.

Potentially necessary geotechnical setbacks have been recently identified for all four mining phases of the project. An additional formal wetland delineation survey was conducted on these areas in summer 2017 but has not yet been verified by USACE. The Phase 3 and 4 setback areas support hydrologic features that may also be considered jurisdictional by the USACE including a wetland seep spring south of Phase 3; and a short reach of intermittent channel, a stock pond and a small seasonal wetland north of Phase 4. Should geotechnical setback areas be required, Phase 3 and Phase 4 setbacks will result in impacts to 115 linear feet of intermittent channel, 0.34 acres

of ponds, 0.05 acres of seasonal wetland and 0.03 acres of wetland seeps which also will likely be considered jurisdictional waters of the U.S. and state.

At the same time the delineation for waters of the U.S. was conducted, LOA surveyed for waters of the state jurisdiction (CDFW and RWQCB) on the quarry project site, including the top of bank of channels or the dripline of riparian vegetation, whichever was greater. Impacts to waters of the state were calculated at 4.31 acres. In addition to the channels of the site, the RWQCB would also likely assert jurisdiction over the seasonal wetland on Phase 3 and the seasonal wetland, stock pond, and seep within the geotechnical setback occurring above the Phase 4 mining site.

The loss of Waters of the U.S. and State would be considered a significant impact under CEQA. The following mitigations are designed to reduce these impacts to a less-than-significant level.

Mitigation Measure 3.3.10. The project proponent should implement avoidance, minimization, and/or compensation measures to reduce impacts to jurisdictional waters and riparian habitats to a less-than-significant level.

***Avoidance*.** The preferred method of mitigation would be avoidance of all waters of the U.S. and State by designing the project so that it avoids the placement of fill within potentially-jurisdictional waters.

Based on the 2016 delineation and 2017 USACE verification site visit, the project has been designed to avoid direct and indirect impacts to the most sensitive aquatic features on the Sargent Ranch property by ensuring that they have avoided jurisdictional wetlands and other aquatic features that support important habitat for special status species as well as avoiding Sargent Creek and Tar Creek with a minimum 150 foot setback with the exception of the necessary road and conveyor belt crossings. However, the project cannot avoid impacts to all intermittent drainage channels and still meet project objectives. Additionally, if the geotechnical setbacks are found necessary, the project will result in impacts to a stock pond that provides breeding habitat for CRLF and California newts, a seep and a small seasonal wetland.

Minimization. Because full avoidance is not possible, actions should be taken to minimize impacts to aquatic and riparian habitats. Measures taken during construction activities should include placing construction fencing around any aquatic features or riparian areas to be preserved that occur within 100 feet of project construction activities to ensure that these activities do not inadvertently impact sensitive habitats. Sargent Creek and Tar Creek conveyor belt and access road crossings should preferably be designed to minimize impacts to the most sensitive aquatic habitats, such as through the use of clear-span structures, and in such a way to ensure that they do not result in barriers to wildlife that use these corridors.

As part of project build-out, all proposed lighting should be designed to avoid light and glare impacts to the riparian corridor. Light sources should not be visible from riparian areas and should not illuminate riparian areas or cause glare on the opposite side of the creek. Additionally, proposed development activities should be designed and situated to avoid the loss of trees within the riparian area of Sargent Creek to the maximum extent practicable.

Preservation. The project includes the preservation of more than an estimated 11,000 linear feet of intermittent drainages (including approximately 0.50 acres of OHW channel under the jurisdiction of the USACE, and approximately 1.5 acres of channel under the jurisdiction of RWQCB and CDFW); and 1.0 acres of seasonal wetlands, within a conservation easement. The wetlands preserved would also be likely to be considered jurisdictional by USACE and RWQCB.

Compensation. In addition to the preservation of channel habitat and other aquatic habitat as discussed above, the project will compensate for a loss of channel habitat and a small amount of riparian habitat along Sargent and Tar Creek through onsite creation of similar or higher quality habitat within the conservation easement area or via the purchase of mitigation credits, or some combination of these two approaches, at a minimum of a 1:1 replacement-to-loss ratio for “in kind” habitat or minimum 1:1 replacement-to-loss ratio for different but higher quality habitat (such as the onsite creation of wetland habitat or the purchase of wetland habitat credits).

Should habitat be created onsite, an onsite habitat mitigation and monitoring plan (HMMP) would need to be developed. At a minimum, the HMMP will:

- Define the location of all restoration/creation activities;
- Provide evidence of a suitable water budget to support any created aquatic and riparian

habitats;

- Identify the species, amount, and location of plants to be installed in the created habitats;
- Identify the time of year for planting and method for supplemental watering during the establishment period;
- Identify the monitoring period. This should be not less than 5 years.
- Define success criteria that will be required for restoration efforts to be deemed a success;
- Identify adaptive management procedures that accommodate the uncertainty that comes with restoration projects. These include, but are not limited to, measures to address colonization by invasive species, unexpected lack of water, and excessive foraging of installed plants by native wildlife;
- Define management and maintenance activities (weeding of invasive plants, providing for supplemental water, repair of water delivery systems, etc.); and
- Provide for surety in funding the monitoring and ensuring that the created aquatic and riparian habitats fall within lands to be preserved and managed into perpetuity.

Regulatory issues. The applicant will also need to comply with all state and federal regulations related to construction work that will impact aquatic habitats occurring on the site. The applicant will be required to obtain a Section 404 Clean Water Act permit from the USACE (because of the extent of the impact, i.e. more than 300 linear feet of jurisdictional channel, an Individual Section 404 permit will be required), Section 401 Water Quality Certification from the RWQCB, and Section 1600 Streambed Alteration Agreement from the CDFW prior to initiating any impacts within these habitats.

These minimization and compensation measures will reduce impacts to waters of the U.S. and state and to sensitive riparian habitats to a less-than-significant level.

3.3.11 Potential Impacts to Western Red Bat, Pallid Bat, and Other Special Status and Non-special Status Roosting Bats

Potential Impact. A number of special status and non-special status bat species my roost and/or forage on the project site. Oak trees of the site provide potential roosting habitat for foliage- and cavity-roosting bats including special status bats such as the western red bat and pallid bat, and several other non-special status bat species. The project site provides suitable foraging habitat,

but no suitable roosting habitat for other special status bats such as Townsend's big-eared bat and California mastiff bats. While the loss of foraging and roosting habitat for bat species would be considered a less than significant impact of the project due to the onsite preservation of over 45 acres of woodlands providing similar potential bat roosting and breeding habitat and the availability of such habitat regionally, tree removal could result in the loss of individual special status bats or the loss of maternal colonies of either special status or non-special status bat species, and this would be considered a significant impact of the project.

Mitigation Measure 3.3.11. A qualified biologist shall conduct a habitat assessment in the woodland habitat of the site for bats prior to any activities that will result in the removal of trees from the project site. Should the habitat assessment conclude that any trees proposed for removal provide potential roosting, hibernation and/ or maternity habitat for special status bats, tree removal shall only be conducted during seasonal periods of bat activity, i.e. September through mid-October and March through mid-April, under the supervision of a qualified biologist. Tree removals shall occur via a two-phased removal conducted over two consecutive days. In the afternoon of the first day, limbs and branches will be removed by a tree cutter using chainsaws only. Limbs with cavities, crevices or deep bark fissures shall be avoided, and only branches or limbs without those features shall be removed. On the second day, the entire tree shall be removed.

The above habitat assessment and tree removal measures, along with the preservation of approximately 47 acres of woodlands on site providing similar potential roosting and breeding habitat for special status and non-special status bats, will mitigate any impacts to bats to a less-than-significant level.

3.3.12 Potential Impacts to Special Status Animal Species

Impact. In addition to steelhead, CTS, CRLF, WPT, BUOW, American badger and the special status bat species already discussed above, the project site provides potential habitat for several other special status animals that occur, or once occurred, in the project region (Table 3, Figure 5).

The site provides potential foraging and nesting habitat for ten special status bird species, including four raptor species: grasshopper sparrow, yellow warbler, bank swallow, loggerhead shrike, black swift, Vaux's swift, white-tailed kite, northern harrier, short-eared owl and long-eared owl. Additionally, although nesting habitat is absent or extremely marginal on the site for these species, the site provides potential foraging habitat for another three special status raptor species: bald eagle, peregrine falcon, and golden eagle. All of these latter species have been observed in the past to be present on the greater Sargent Ranch property. Bald eagles have apparently been observed roosting on the Sargent Ranch property near Tar Creek during winter months by PNWB biologists; however, this species has not been observed on the ranch since LOA began surveys in 2004. Peregrine falcons were observed foraging on the site by PNWB biologists and while potential nesting habitat is absent from the quarry project area, suitable potential nesting habitat does occur on the greater Sargent Ranch property for this species. Golden eagles were observed on numerous occasions to forage over the grasslands of the ranch by both PNWB and LOA biologists and are assumed to be regular foragers on the quarry project site; however, no nesting activity has ever been observed on the ranch despite numerous various biological surveys of the site, many of which occurred during the nesting season.

While breeding habitat for the tri-colored blackbird is absent from within the quarry footprints, as previously discussed, there are two documented occurrences in the CNDDB of tri-colored blackbirds within ponds on the west side of Sargent Creek. These latter occurrences date back to 1980 and 1989. This species was never observed during surveys conducted by PNWB and LOA, and it seems unlikely the species still occurs there, although the ponds were observed to still support potential nesting habitat for this species in the form of emergent vegetation such as cattails. If the species does still occur on the ranch property, the project site would provide marginal foraging habitat for this species, and it would be unlikely to forage there. While a small seep supporting cattails and other emergent vegetation occurs within an area that potentially will be impacted by geotechnical setbacks, due to the small size, it is unlikely that this species would nest within this feature and this species was not detected during the June 2017 wetland delineation conducted within the breeding season. However, in the unlikely event that it did nest there in the future, pre-construction nesting bird surveys would detect this species.

During a wetland delineation survey, woodrat nests were observed within the Tar Creek riparian corridor near the current at-grade crossing where the quarry access road bridge is proposed. Should bridge construction activities impact riparian vegetation upstream or downstream of the current at-grade crossing, potentially these activities could destroy nests and harm or kill individual San Francisco dusky-footed woodrats, and this may be considered a significant impact.

All other special status species known to occur in the project region are considered absent from or unlikely to occur on the project site or its immediate vicinity due to the lack of suitable habitat.

Mitigation Measure 3.3.12. The loss of breeding, roosting and foraging habitat for special status animals would be a less-than-significant impact of the project as this habitat would remain regionally abundant. Approximately 400 acres of similar habitat would also be preserved within the conservation easement area on the site. However, bridge construction activities could result in destruction of woodrat nests and in harm or mortality to individual San Francisco dusky-footed woodrats and therefore the following measures will be implemented.

- A qualified biologist shall conduct a pre-construction survey for the San Francisco dusky-footed woodrat within the riparian habitats prior to the construction of the access bridge. Identified nests will be avoided whenever possible. If avoidance is not possible, the nest(s) will be manually deconstructed by a person qualified to handle wild rodents within 30 days prior to the initiation of the constructions activity.

- Every nest that is deconstructed would be compensated for by replacing with the creation of suitable nest woodpiles in the nearest possible location within riparian habitat on site. The nesting material (i.e. sticks and twigs) would be piled two to four feet high, with a minimum width of four feet.

3.3.13 Loss of Habitat for Non-special Status Native Wildlife

Potential Impact. The habitats of the proposed quarry site are likely to comprise only a portion of most native wildlife's entire home range or territory. As such, some species may disperse through the site, but most wildlife presently using the site do so as part of their normal movements for foraging, mating, and caring for young. Wildlife species presently occupying the site would be displaced or lost from the proposed development areas.

Mining of the site will occur in four phases, with the last two phases probably not occurring until 25 or more years into the future, and continuing to provide habitat for native wildlife in the interim. As new quarry phases are mined, past phases will be reclaimed and revegetated to be returned to a state as closely as possible reflecting their pre-project state. The greatest impacts to habitat will occur as a result of Phase 4. This phase of the project will result in impacts to a total of approximately 90 acres, including annual grasslands, oak woodlands, and hay fields, and also directly impact approximately 1700 linear feet of ephemeral drainages that primarily support herbaceous upland vegetation undifferentiated from surrounding upland habitats. Phase 4 of the project will not impact, either directly or indirectly, any sensitive riparian habitats or wetland habitats, as no such habitats occur within 150 of the Phase 4 project. Incrementally, over the span of many decades, the quarry project will impact a total of approximately 300 acres of grasslands, woodlands, and agricultural land. Additionally, a small amount of riparian habitat associated with Sargent Creek as a result of the Phase 1 access road crossing will be impacted.

Annual grasslands and oak woodlands do provide important habitat for many native species; however, these habitats are still abundant regionally and a total of approximately 400 acres will be preserved in-perpetuity on the conservation easement. As habitat for native wildlife, this preserved open space is of higher quality than the area proposed for development because it is composed of a mosaic of different habitats including grasslands, woodlands, chaparral/scrub habitats, and seasonal wetlands, and more than 11,000 linear feet of ephemeral drainages. Additionally, the conservation easement will preserve linkages between undeveloped lands occurring to the east and west of the easement, and the eastern boundary, more than a mile in length, is adjacent to Sargent Creek, a riparian corridor which connects open space areas occurring to the north and south as well.

Impacts to native wildlife due to the loss of habitat resulting from the proposed project are considered less than significant under CEQA.

Mitigation. Mitigation measures are not warranted.

3.3.14 Interference with the Movement of Native Wildlife

Potential Impacts. The quarry project is unlikely to result in a significant impact to the movements of native wildlife. Although some native wildlife would be expected to move through habitats within the quarry footprints, the project will be set back by 100 - 150 feet or more from the most important movement corridors within the project vicinity, i.e. Tar Creek and Sargent Creek, with the exception of crossings of Sargent Creek and Tar Creek required for quarry access roads and conveyor belt alignments. The conveyor belt feature will be constructed between that processing plant in the northern portion of the site to the Phase 1 and Phase 2 mining sites. This feature is proposed to be elevated by four to five in height and it is not anticipated that this feature will therefore present a barrier to wildlife passing underneath to access habitats to the east and west. Wildlife currently moving through the habitats of the quarry site to access open space lands to the east and west will be able to use the conservation easement area to continue to do so, or the Tar Creek corridor to the north of the quarry site. Open space lands and the Sargent Creek corridor remain available to the west of the quarry area that will continue to provide linkage between open space areas to the south and north of the project.

Therefore, impacts to wildlife movements are considered less-than-significant under CEQA.

Mitigation. Mitigation measures are not warranted.

3.3.15 Conflict with Local Policies or Ordinances

Potential Impact. There are two County policies or ordinances that the project will need to abide by are the Santa Clara County Tree Ordinance and Heritage Trees in Santa Clara County Ordinance. The applicant will be responsible for conforming to these two ordinance requirements and applying for any necessary permits for removal of ordinance or heritage trees.

Mitigation. None warranted.

3.3.16 Degradation of Water Quality in Seasonal Creeks, Reservoirs and Downstream Waters

Potential Impact. The development of quarry facilities and on-going quarry operations will require grading, excavation, and vegetation removal, thereby resulting in the project site

becoming vulnerable to sheet, rill or gully erosion. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural creek/river beds, canals, and adjacent wetlands.

To avoid or minimize sedimentation to offsite waters the quarry will be set back a minimum of 100 feet from any aquatic features. During the development of quarry facilities, including roads, the applicant will be required to develop an erosion control plan. The applicant must also comply with standard erosion control measures that employ best management practices (BMPs), develop a SWPPP per State Water Quality Control Board Stormwater Permit, and conform with Santa Clara County's stormwater and grading requirements. If the applicant abides by the above requirements and obtains the required permits prior to starting the project, impacts to downstream waters from erosion and polluted stormwater runoff will be reduced to a less than significant level.

During project operation phase, runoff from quarry work areas would drain by sheet flow into drainage swales along the perimeter of the work area. Storm drainage from the site would be conveyed to settling ponds. Storm water in the settling pond would ultimately percolate on-site or be reused for plant operations. Swales will buffer the overburden stockpiles and the plant area from Tar Creek to the west, and contain storm water from entering the creek

Mitigation 3.3.16. The incorporation of SCVHCP avoidance and minimization measures as indicated in Mitigation Measure 3.3.2 for steelhead, above, and provided in Appendix D, along with practices incorporated into the project description, and minimum setback requirements, will ensure that runoff from the quarry does not enter into creeks in the vicinity of the project. During the development of quarry facilities, the applicant must comply with the provisions of a County grading permit, 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 the above permits should result in no impact to water quality in seasonal creeks, reservoirs, and downstream waters from the proposed project.

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APPENDIX A: VASCULAR PLANTS OF THE STUDY AREA

The plant species listed below have been observed on the approximately 6300-acre Sargent Ranch study area during the surveys conducted by Live Oak Associates on July 30, August 3 and 4, 2004; June 9 and 10, July 13, 20, 21, and 27, and October 6, 2005; March 28 and 29, 2007; May 29-31, 2007; August 1, 2007; September 24, 2007; October 4 and 11, 2016; and June 9 and 29, 2017. All plants have been named according to *The Jepson Manual* (Hickman 1993). The U.S. Fish and Wildlife Service indicator status of each plant has been shown following its common name. Many, although not all, of these species may also be reasonably expected to occur on the Sargent Ranch Quarry project site.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland
+/- - Higher/lower end of category
NR - No review
NA - No agreement
NI - No investigation

ACERACEAE – MAPLE FAMILY		
Acer macrophyllum	Big-leaf Maple	FAC
Acer negundo	Boxelder	FACW
ANACARDIACEAE – SUMAC FAMILY		
Schinus molle	Peruvian Pepper Tree	UPL
Toxicodendron diversilobum	Poison Oak	UPL
APIACEAE – CARROT FAMILY		
Anthriscus caucalis	Bur-chervil	UPL
Berula erecta	Cut-leaved Water Parsnip	OBL
Conium maculatum	Poison Hemlock	FACW
Daucus pusillus	Rattlesnakeweed	UPL
Eryngium vaseyi	Coyote Thistle	OBL
Foeniculum vulgare	Fennel	FACU
Heracleum lanatum	Cow Parnsip	FACU
Hydrocotyle ranunculoides	Marsh Pennywort	OBL
Lomatium sp.	Lomatium	-
Oenanthe sarmentosa	Water Parsley	OBL
Osmorhiza chilensis	Sweet-cicely	UPL
Perideridia kelloggii	Kellogg's Yampah	UPL
Sanicula bipinnata	Poison Sanicle	UPL
Sanicula bipinnatifida	Purple Sanicle	UPL
Sanicula crassicaulis	Snakeroot	UPL
Sanicula laciniata	Coast Sanicle	UPL
Torilis arvensis	Field Hedge Parsley	UPL

Torilis nodosa	Knotted Hedge Parsley	UPL

APOCYNACEAE – DOGBANE FAMILY

Vinca major	Periwinkle	UPL

ASCLEPIADACEAE – MILKWEED FAMILY

Asclepias fascicularis	Narrow-leaved Milkweed	FAC

ASTERACEAE - SUNFLOWER FAMILY

Achillea millefolium	Common Yarrow	FACU
Achyrachaena mollis	Blow Wives	UPL
Agoseris grandiflora	California Dandelion	UPL
Agoseris heterophylla	Annual Mountain Dandelion	UPL
Ambrosia psilostachya	Western Ragweed	
Anaphalis margaritacea	Pearly Everlasting	
Anthemis cotula	Mayweed	FACU
Artemisia californica	California Sagebrush	UPL
Artemisia douglasiana	Mugwort	FACW
Baccharis pilularis	Coyote Brush	UPL
Baccharis salicifolia	Mule's Fat	FACW-
Carduus pycnocephalus	Italian Thistle	UPL
Centaurea calcitrapa	Purple Star-thistle	UPL
Centaurea solstitialis	Yellow Star-thistle	UPL
Chamomilla suaveolens	Pineapple Weed	FACU
Cichorium intybus	Chicory	UPL
Cirsium vulgare	Bull Thistle	FACU
Conyza canadensis	Canadian Horseweed	FAC
Cotula coronopifolia	Brass Buttons	FACW+
Erechtites glomerata	Cut-leaved Fireweed	UPL
Erigeron philadelphicus	Philadelphia Daisy	
Eriophyllum confertiflorum	Golden Yarrow	UPL
Filago gallica	Narrow-leaved Filago	UPL
Gnaphalium californicum	California Everlasting	UPL
Gnaphalium luteo-album	Cudweed	FACW-
Gnaphalium purpureum	Purple Cudweed	UPL
Grindelia camporum	Great Valley Gumplant	FACU
Helenium puberulum	Rosilla	FACW
Hemizonia congesta ssp. congesta	Hayfield Tarweed	UPL
Hemizonia congesta ssp. luzulifolia	Hayfield Tarweed	UPL
Hemizonia pungens ssp. pungens	Common Spikeweed	FAC
Hesperevax sparsiflora	Erect Hesperevax	UPL
Hypochaeris glabra	Smooth Cat's Ear	UPL
Hypochaeris radicata	Rough Cat's Ear	UPL
Iva axillaris ssp. robustior	Poverty weed	FAC
Lactuca saligna	Willow Lettuce	NI
Lactuca serriola	Prickly Lettuce	FAC
Lagophylla ramosissima ssp. ramosissima	Common Hareleaf	UPL

Lasthenia californica	Goldfields	UPL
Layia platyglossa	Tidy Tips	UPL
Lessingia filaginifolia	Common Lessingia	UPL
Madia gracilis	Slender Tarweed	UPL
Microseris douglasii	Douglas Microseris	UPL
Picris echioides	Bristly Ox Tongue	FAC*
Senecio vulgaris	Common Groundsel	NI
Silybum marianum	Milk Thistle	UPL
Solidago californica	California Goldenrod	UPL
Sonchus asper	Prickly Sow-thistle	FAC
Sonchus oleraceus	Common Sow-thistle	NI
Taraxacum officinale	Common Dandelion	FACU
Tragopogon porrifolius	Tragopogon	UPL
Uropappus lindleyi	Silverpuffs	UPL
Wyethia glabra	Mules-ears	UPL
Wyethia helenioides	Gray Mules Ears	UPL
Xanthium spinosum	Spiny Cocklebur	FAC+
Xanthium strumarium	Common Cocklebur	FAC+

AZOLLACEAE - MOSQUITO FERN FAMILY

Azolla filiculoides	Fern-Like Azolla	OBL

BETULACEAE – BIRCH FAMILY

Alnus rhombifolia	White Alder	FACW
Alnus rubra	Red Alder	FACW
Corylus cornuta var. californica	Hazelnut	NI

BLECHNACEAE - DEER FERN FAMILY

Woodwardia fimbriata	Chain Fern	FACW+

BORAGINACEAE – BORAGE FAMILY

Amsinckia menziesii var. intermedia	Fiddleneck	UPL
Cynoglossum grande	Hound's Tounge	UPL
Heliotropium curassivicum	Alkali Heliotrope	OBL
Plagiobothrys canescens	Valley Popcorn Flower	UPL
Plagiobothrys nothofluvus	Rusty Popcorn Flower	FACU

BRASSICACEAE – MUSTARD FAMILY

Brassica nigra	Black Mustard	UPL
Capsella bursa-pastoris	Cardamine californica	
Milkmaids		UPL
Cardamine oligosperma	Bitter Cress	FACW
Cardaria draba	Hoary Cress	UPL
Hirschfeldia incana	Summer Mustard	UPL
Lepidium campestre	Lepidium latifolium	
Broad-leaved Peppergrass		FACW
Lepidium nitidum	Common Peppergrass	FACW

Lepidium oxycarpum	Sharp-podded Peppergrass	OBL
Lepidium strictum	Wayside Peppergrass	UPL
Raphanus sativus	Wild Radish	UPL
Rorippa curvisiliqua	Western Yellow Cress	OBL
Rorippa nasturtium-aquaticum	Watercress	OBL
Sisymbrium officinale	Hedge Mustard	UPL

CAPRIFOLIACEAE – HONEYSUCKLE FAMILY

Lonicera hispidula	Hairy Honeysuckle	UPL
Sambucus mexicana	Blue Elderberry	FAC
Symphoricarpos albus var. laevigatus	Snowberry	FACU

CARYOPHYLLACEAE – PINK FAMILY

Cerastium glomeratum	Mouse-eared Chickweed	UPL
Silene gallica	Windmill Pink	
Spergularia marina	Salt-marsh Sand Spurry	OBL
Spergularia rubra	Red Sand-spurrey	FAC-
Stellaria media	Common Chickweed	FACU

CHENOPODIACEAE – GOOSEFOOT FAMILY

Atriplex triangularis	Spear Scale	FACW
Chenopodium californicum	California Goosefoot	UPL
Salsola tragus	Russian-thistle	FACU

CONVOLVULACEAE – MORNING GLORY FAMILY

Calystegia occidentalis	Western Morning-glory	UPL
Calystegia subacaulis	Hill Morning-glory	UPL
Convolvulus arvensis	Field Bindweed	UPL
Cressa truxillensis	Alkali Weed	FACW

CORNACEAE – DOGWOOD FAMILY

Cornus glabrata	Brown Dogwood	FACW

CRASSULACEAE – STONECROP FAMILY

Crassula connata	Pygmyweed	FAC

CUCURBITACEAE – GOURD FAMILY

Marah fabaceus	California Man-Root	UPL

CYPERACEAE – SEDGE FAMILY

Carex dudleyi	Dudley's Sedge	FACW
Carex obnupta	Slough Sedge	OBL
Carex serratodens	Bifid Sedge	FACW
Cyperus eragrostis	Umbrella Sedge	FACW
Eleocharis macrostachya	Spikerush	OBL
Scirpus acutus	Common Tule	OBL
Scirpus americanus	Three Square	OBL

Scirpus cernuus	Low Club Rush	OBL

DENNSTAEDTIACEAE – BRACKEN FAMILY

Pteridium aquilinum	Western Bracken Fern	FACU

DIPSACEAE – TEASEL FAMILY

Dipsacus fullonum	Wild Teasel	NI

DRYOPTERIDACEAE – WOOD FERN FAMILY

Athyrium felix-femina	Western Lady Fern	FAC
Dryopteris arguta	Wood Fern	UPL
Polystichum munitum	Western Sword Fern	UPL

EQUISETACEAE – HORSETAIL FAMILY

Equisetum arvense	Common Horsetail	FAC
Equisetum laevigatum	Smooth Scouring Rush	FACW
Equisetum telmateia ssp. braunii	Giant Horsetail	OBL

ERICACEAE – HEATH FAMILY

Arbutus menziesii	Madrone	UPL
Arctostaphylos tomentosa	Woolly-leaf Manzanita	UPL

EUPHORBIACEAE – SPURGE FAMILY

Eremocarpus setigerus	Doveweed	UPL
Euphorbia crenulata	Chinese Caps	UPL

FABACEAE – LEGUME FAMILY

Astragalus gambelianus	Gamble's Milk-vetch	UPL
Lotus corniculatus	Bird's Foot Trefoil	FAC
Lotus purshianus	Spanish Lotus	UPL
Lotus scoparius	California Broom, Deer Weed	UPL
Lotus wrangelianus	California Lotus	UPL
Lupinus adsurgens	Silky Lupine	UPL
Lupinus albifrons	Silver Bush Lupine	UPL
Lupinus bicolor	Miniature Lupine	UPL
Lupinus nanus	Sky Lupine	UPL
Lupinus succulentus	Arroyo Lupine	UPL
Medicago polymorpha	Bur Clover	FACU-
Melilotus alba	White Sweetclover	FACU+
Melilotus indica	Yellow Sweetclover	FAC
Rupertia physodes	California-tea	UPL
Trifolium angustifolium	Narrow-leaved clover	UPL
Trifolium albopurpureum	Indian Clover	UPL
Trifolium bifidum	Notch-leaved Clover	UPL
Trifolium ciliolatum	Tree Clover	UPL
Trifolium dubium	Little Hop Clover	FACU
Trifolium fucatum	Bull Clover	FAC

Trifolium gracilentum var. gracilentum	Pinpoint Clover	UPL
Trifolium hirtum	Rose Clover	UPL
Trifolium incarnatum	Crimson Clover	UPL
Trifolium microcephalum	Small-head Clover	FACU
Trifolium microdon	Valpariaso Clover	UPL
Trifolium subterraneum	Subterraneum Clover	UPL
Trifolium wildenovii	Tomcat Clover	UPL
Trifolium wormskioldii	Cow Clover	FACW
Vicia sativa	Spring Vetch	FACU
Vicia villosa	Hairy Vetch	UPL

FAGACEAE – OAK FAMILY

Quercus agrifolia	Coast Live Oak	UPL
Quercus douglassii	Blue Oak	UPL
Quercus lobata	Valley Oak	UPL

GERANIACEAE – GERANIUM FAMILY

Erodium botrys	Long-beaked Filaree	UPL
Erodium cicutarium	Redstem Filaree	UPL
Geranium dissectum	Cut-Leaved Geranium	UPL
Geranium molle	Dove's Foot Geranium	UPL

GROSSULARIACEAE – GOOSEBERRY FAMILY

Ribes californicum var. californicum	Hillside Gooseberry	UPL
Ribes sanguineum var. glutinosum	Pinkflower Currant	UPL

HIPPOCASTANACEAE – BUCKEYE FAMILY

Aesculus californica	California Buckeye	UPL

HYROPHYLLACEAE – WATERLEAF FAMILY

Nemophila menziesii ssp. menziesii	Baby Blue-eyes	UPL
Pholistima auritum var. auritum	Fiesta Flower	UPL

IRIDACEAE – IRIS FAMILY

Iris douglasiana	Douglas Iris	UPL
Sisyrinchium bellum	Blue-eyed Grass	FAC

JUGLANDACEAE – WALNUT FAMILY

Juglans hindsii	California Black Walnut	FAC

JUNCACEAE – RUSH FAMILY

Juncus balticus	Baltic Rush	OBL
Juncus bufonius	Toad Rush	FACW-
Juncus effuses var. pacificus	Pacific Bog Rush	OBL
Juncus mexicanus	Mexican Rush	FACW
Juncus occidentalis	Western Rush	FACW
Juncus patens	Common Rush	FAC

Juncus xiphioides	Iris-leaf Juncus	FACW+
Luzula comosa	Wood Rush	NI

LAMIACEAE – MINT FAMILY

Lepichinia calycina	Pitcher Sage	UPL
Marrubium vulgare	Horehound	FAC
Mentha pulegium	Pennyroyal	OBL
Pogogyne serpylloides	Thyme-leaved Pogogyne	FACW
Salvia mellifera	Black Sage	UPL
Stachys ajugoides var. rigida	Rigid Hedge Nettle	OBL
Stachys bullata	Wood Mint	UPL
Stachys pycnantha	Short-spiked Hedge Nettle	FACW
Trichostemma lanceolatum	Vinegar Weed	UPL

LAURACEAE – LAUREL FAMILY

Umbellularia californica	California Bay	FAC

LEMNACEAE – DUCKWEED FAMILY

Lemna gibba	Inflated Duckweed	OBL
Lemna minor	Duckweed	OBL

LILIACEAE – LILY FAMILY

Brodiaea elegans	Harvest Brodiaea	UPL
Calochortus luteus	Yellow Mariposa Lily	UPL
Calochortus venustus	Mariposa Lily	UPL
Chlorogalum pomeridianum	Soap Plant	UPL
Dichelostemma capitatum ssp. capitatum	Blue Dicks	UPL
Muilla maritima	Common Muilla	UPL
Trillium chloropetalum	Giant Trillium	UPL
Triteleia laxa		

LINACEAE – FLAX FAMILY

Linum bienne	Narrowleaf Flax	UPL

LYTHRACEAE – LOOSESTRIFE FAMILY

Lythrum hyssopifolia	Hyssop Loosestrife	FACW

MALVACEAE – MALLOW FAMILY

Malva neglecta	Common Mallow, Cheeses	UPL
Malvella leprosa	Alkali Mallow	FAC
Sidalcea diploscypha	Fringed Sidalcea	
Sidalcea malvaeflora ssp. laciniata	Checker Bloom, Wild Hollyhock	UPL

MYRTACEAE – MYRTLE FAMILY

Eucalyptus globulus	Blue Gum	UPL

OLEACEAE – OLIVE FAMILY

Fraxinus dipetala	California Ash	UPL

ONAGRACEAE – EVENING PRIMROSE FAMILY

Camissonia ovata	Sun Cup	UPL
Clarkia rubicunda	Farewell-To-Spring	UPL
Clarkia sp.	Clarkia	
Clarkia unguiculata	Elegant Fairyfan	UPL
Epilobium brachycarpum	Willow Herb	UPL
Epilobium canum	California Fuschia	UPL
Epilobium ciliatum ssp. ciliatum	California Willowherb	FACW
Epilobium minutum	Minute Willowherb	UPL
Epilobium ciliatum	Willow Herb	FACW
Ludwigia peploides	Yellow Water Weed	OBL
Oenethera elata ssp. hookeri	Hooker's Evening Primrose	

OXALIDACEAE – OXALIS FAMILY

Oxalis corniculata	Creeping Wood-sorrel	FACU
Oxalis pes-caprae	Bermuda Buttercup	UPL

PAPAVERACEAE – POPPY FAMILY

Eschscholzia californica	California Poppy	UPL
Platystemon californicus	Cream Cups	UPL

PLANTAGINACEAE – PLANTAGO FAMILY

Plantago lanceolata	English Plantain	FAC
Plantago major	Common Plantain	FACW-

PLATANACEAE – SYCAMORE FAMILY

Platanus racemosa	Western Sycamore	FACW

POACEAE - GRASS FAMILY

Agrostis viridis	Water Bent Grass	OBL
Arundo donax	Giant Reed	FACW
Avena barbata	Slender Wild Oats	UPL
Avena sativa	Cultivated Oat	UPL
Briza minor	Little Quaking Grass	FACW-
Bromus carinatus	California Brome	UPL
Bromus diandrus	Ripgut	UPL
Bromus hordeaceus	Soft Chess	FACU
Bromus madritensis	Red Brome	NI
Crypsis schoenoides	Swamp Grass	OBL
Crypsis vaginiflora	Prickle-grass	
Cynosurus echinatus	Hedgehog Dogtail	UPL
Danthonia californica	California Oatgrass	FACW
Distichlis spicata	Saltgrass	FACW
Echinochloa crus-galli	Barnyard Grass	FACW

Elymus elymoides	Squirrel tail	FACU-
Elymus glaucus	Blue Wildrye	FACU
Gastridium ventricosum	Nit Grass	FACU
Hordeum brachyanthurumCalifornia Barley		FACW
Hordeum marinum ssp. gussoneanum	Mediterranean Barley	FAC
Hordeum murinum ssp. leporinum	Barnyard Barley	NI
Lamarkia aurea	Goldentop	UPL
Leymus triticoides	Creeping Wildrye	FAC+
Lolium multiflorum	Ryegrass	FAC
Lolium perenne	Perennial Rye	FAC
Melica torreyana	Melic Grass	UPL
Nassella cernua	Nodding Needle Grass	
Nassella pulchra	Purple Needle Grass	UPL
Paspalum distichum	Knotgrass	OBL
Phalaris aquatica	Harding Grass	FAC+
Poa annua	Annual Bluegrass	FACW-
Poa secunda	Oneside Blue Grass	UPL
Polypogon monspeliensis	Annual Beardgrass	FACW
Vulpia bromoides	Six-week Fescue	FACW
Vulpia microstachys	Pacific Fescue	UPL

POLEMONIACEAE – PHLOX FAMILY

Navarretia sp.	Navarretia	

POLYGONACEAE - BUCKWHEAT FAMILY

Eriogonum nudum var.nudum	Naked-stemmed Buckwheat	UPL
Polygonum amphibium var. emersum	Swamp Knotweed	OBL
Polygonum arenastrum	Common Knotweed	FAC
Polygonum hydropiperoides	Water-pepper	OBL
Polygonum persicaria	Lady's Thumb	FACW
Pterostegia drymarioides	Pterostigia	UPL
Rumex acetosella	Sheep Sorrel	FAC_
Rumex crispus	Curly Dock	FACW
Rumex pulcher	Fiddle Dock	FAC+
Rumex salicifolius	Willow Dock	OBL

POLYPODIACEAE – POLYPLODY FAMILY

Polypodium californicum	California Polypody	UPL

PORTULACACEAE – PURSLANE FAMILY

Calandrinia ciliata	Red Maids	FACU
Claytonia gypsophiloides	Coast Claytonia	UPL
Claytonia parviflora ssp. parviflora	Small-leaved Claytonia	UPL
Claytonia perfoliata ssp. perfoliata	Miner's Lettuce	FAC
Portulaca oleracea	Common Purslane	FAC

POTAMOGETONACEAE - PONDWEED FAMILY

Potamogeton nodosus	Long-leaved Pondweed	OBL

PRIMULACEAE – PRIMROSE FAMILY

Anagallis arvensis	Scarlet Pimpernel	FAC
Dodecatheon hendersonii	Mosquito Bills	UPL
Trientalis latifolia	Star Flower	UPL

PTERIDACEAE – BRAKE FAMILY

Adiantum jordanii	Maidenhair Fern	UPL
Pellaea andromedaefolia	Coffee Fern	UPL
Pentagramma triangularis	Gold-back Fern	UPL

RANUNCULACEAE – BUTTERCUP FAMILY

Clematis ligusticifolia	Virgin's Bower	FAC
Myosurus minimus	Common Mousetail	OBL
Ranunculus californicus	California Buttercup	FAC

RHAMNACEAE – BUCKTHORN FAMILY

Rhamnus californica	California Coffeeberry	UPL
Rhamnus crocea	Redberry	UPL

ROSACEAE – ROSE FAMILY

Acaena pinnatifida var. californica	California Acaena	UPL
Adenostema fasciculatum	Chamise	FAC
Aphanes occidentalis	Lady's Mantle	UPL
Fragaria vesca	Wood Strawberry	UPL
Heteromeles arbutifolia	Toyon	UPL
Holodiscus discolor	Creambush	UPL
Horkelia californica ssp. frondosa	Leafy Horkelia	UPL
Oemlaria cerasiformis	Oso Berry	UPL
Prunus cerasifera	Cherry Plum	UPL
Rosa californica	California Rose	FAC+
Rubus discolor	Himalayan Blackberry	FACW
Rubus ursinus	California Blackberry	FACW

RUBIACEAE – MADDER FAMILY

Galium aparine	Goosegrass	FACU
Galium parisiense	Wall Bedstraw	FACU
Galium porrigens	Climbing Bedstraw	UPL
Sherardia arvensis	Field Madder	UPL

SALICACEAE – WILLOW FAMILY

Populus balsamifera ssp. tricocarpa	Black Cottonwood	FACW
Populus fremontii	Fremont's Cottonwood	FACW
Salix exigua	Narrowleaf Willow	OBL
Salix laevigata	Red Willow	FACW
Salix lasiolepis	Arroyo Willow	FACW

Salix lucida ssp. lasiandra	Yellow Willow	OBL

SAXIFRAGACEAE – SAXIFRAGE FAMILY

Lithophragma affine	Woodland Star	UPL
Saxifraga californica	California Saxifrage	UPL

SCROPHULARIACEAE – SNAPDRAGON FAMILY

Castilleja affinis ssp. affinis	Indian Paintbrush	UPL
Castilleja exserta	Pink Owl's Clover	UPL
Castilleja foliolosa	Woolly Indian Paint-brush	UPL
Mimulus aurantiacus	Sticky Monkeyflower	UPL
Mimulus guttatus	Common Monkeyflower	OBL
Scrophularia californica	Beeplant	FAC
Tryphysaria pusilla	Little Owl's Clover	UPL
Veronica anagallis-aquatica	Water speedwell	OBL

SOLANACEAE – NIGHTSHADE FAMILY

Solanum nigrum	Black Nightshade	FACU
Solanum umbelliferum	Blue Witch	UPL

TAXODIACEAE – BALD CYPRESS FAMILY

Sequoia sempervirens	Coast Redwood	UPL

TYPHACEAE – CATTAIL FAMILY

Typha angustifolia	Narrow-leaved Cattail	OBL
Typha latifolia	Broad-leaved Cattail	OBL

URTICACEAE – NETTLE FAMILY

Urtica dioica ssp. *holosericea*	Stinging Nettle	FACW
Urtica urens	Dwarf Nettle	UPL

VERBANACEAE – VERBANE FAMILY

Phyla nodiflora	Garden Lippia	FACW
Verbena lasiostachy var. scabrida	Robust Verbena	FAC-

VIOLACEAE – VIOLET FAMILY

Viola pedunculata	Johnny Jump-up	UPL

VISCACEAE – MISTLETOE FAMILY

Phoradendron villosum	Oak Mistletoe	UPL

APPENDIX B
TERRESTRIAL VERTEBRATE SPECIES THAT OCCUR, OR POTENTIALLY OCCUR, ON THE STUDY AREA

The species listed below are those that have been observed on the greater 6300 acre Sargent Ranch property during surveys conducted by LOA and PNWB (denoted by an asterisk), or would be reasonably expected to occur on Sargent Ranch although not directly observed. Many, although not all, of these species may reasonably be expected to use the habitats of the quarry project site. The list was not intended to include birds that are vagrants or occasional transients. Its purpose was rather to include those species that may be expected to routinely and predictably use the site during some or all of the year.

CLASS: ACTINOPTERYGII

ORDER: SALMONIFORMES (Salmonids)

FAMILY: SOLMONIDAE
Steelhead (*Onchorynchis mykiss irideus*)*

CLASS: AMPHIBIA

ORDER: CAUDATA (SALAMANDERS)

FAMILY: AMBYSTOMATIDAE (MOLE SALAMANDERS AND RELATIVES)

California Tiger Salamander (*Ambystoma californiense*)*

FAMILY: SALAMANDRIDAE (NEWTS)
California Newt (*Taricha torosa*)*

FAMILY: PLETHODONTIDAE (LUNGLESS SALAMANDERS)
Ensatina (*Ensatina eschscholtzii*)
Black-bellied Salamander *(Batrachoseps nigriventris)*
Pacific Slender Salamander *(Batrachoseps pacificus)*
Arboreal Salamander *(Aneides lugubris)**

ORDER: ANURA (FROGS AND TOADS)

FAMILY: BUFONIDAE (TRUE TOADS)
Western Toad (*Bufo boreas*)*

FAMILY: HYLIDAE (TREEFROGS AND RELATIVES)
Pacific Chorus Frog (*Pseudacris regilla*)*

FAMILY: RANIDAE (TRUE FROGS)
Bullfrog (Rana catesbeiana)*
California Red-legged Frog (*Rana draytonii*)*

CLASS: REPTILIA
ORDER: TESTUDINES (TURTLES)
FAMILY: EMYDIDAE (BOX AND WATER TURTLES)
Western Pond Turtle (*Emys marmorata*)*

ORDER: SQUAMATA (LIZARDS AND SNAKES)

SUBORDER: SAURIA (LIZARDS)

FAMILY: PHRYNOSOMATIDAE
Western Fence Lizard (*Sceloporus occidentalis*)*

FAMILY: SCINCIDAE (SKINKS)
Gilbert Skink (*Eumeces gilberti*)

FAMILY: ANGUIDAE (ALLIGATOR LIZARDS AND RELATIVES)
Southern Alligator Lizard (*Elgaria multicarinata*)*

SUBORDER: SERPENTES (SNAKES)

FAMILY: BOIDAE (BOAS)
Rubber Boa (*Charina bottae*)

FAMILY: COLUBRIDAE (COLUBRIDS)
Racer (*Coluber constrictor*)*
Gopher Snake (*Pituophis melanoleucus*)*
Common Kingsnake (*Lampropeltis getulus*)
Common Garter Snake *(Thamnophis sirtalis)*
Western Aquatic Garter Snake (*Thamnophis couchi*)*

FAMILY: VIPERIDAE
Western Rattlesnake (*Crotalus viridis*)*

CLASS: AVES

ORDER: CICONIIFORMES (HERONS, STORKS, IBISES, AND RELATIVES)
FAMILY: PODICIPEDIDAE
Pied-billed Grebe (*Podilymbus podiceps*)*

FAMILY: ARDEIDAE (HERONS AND BITTERNS)
GREAT BLUE HERON (*ARDEA HERODIAS*)*
BLACK-CROWNED NIGHT HERON (*NYCTICORAX NYCTICORAX*)
GREAT EGRET (*ARDEA ALBA*)*
SNOWY EGRET (*EGRETTA THULA*)*

FAMILY: CATHARTIDAE (AMERICAN VULTURES)
Turkey Vulture (*Cathartes aura*)*
California Condor (Gymnogyps californianus)

ORDER: ANSERIFORMES (SCREAMERS, DUCKS AND RELATIVES)

FAMILY: ANATIDAE (SWANS, GEESE AND DUCKS)
MALLARD (*ANAS PLATYRHYNCHOS*)*
CANADA GOOSE (*BRANTA CANADENSIS*)*
WOOD DUCK (*AIX SPONSA*)*

ORDER: FALCONIFORMES (VULTURES, HAWKS, AND FALCONS)

FAMILY: ACCIPITRIDAE (HAWKS, OLD WORLD VULTURES, AND HARRIERS)

White-tailed Kite (*Elanus caeruleus*)*
Bald Eagle (Haliaeetus leucocephalus)*
Northern Harrier (*Circus cyaneus*)*
Sharp-shinned Hawk (*Accipiter striatus*)*
Cooper's Hawk (*Accipiter cooperi*)*

Red-shouldered Hawk (*Buteo lineatus*)*
Red-tailed Hawk (*Buteo jamaicensis*)*
Ferruginous Hawk (*Buteo regalis*)*
Rough-legged Hawk (*Buteo lagopus*)
Golden Eagle (*Aquila chrysaetos*)*

FAMILY: FALCONIDAE (CARACARAS AND FALCONS)
American Kestrel (*Falco sparverius*)*
Merlin (Falco columbarius)*
Peregrine Falcon (*Falco peregrinus*)*
Prairie Falcon (*Falco mexicanus*)*

ORDER: GALLIFORMES (Megapodes, Currassows, Pheasants, and Relatives)

FAMILY: PHASIANIDAE (QUAILS, PHEASANTS AND RELATIVES)

Wild Turkey (*Meleagris gallopavo*)*

FAMILY: ODONTOPHORIDAE (NEW WORLD QUAIL)
California Quail (Callipepla californica)*

FAMILY: LARIDAE (*GULLS AND TERNS*)
California Gull (*Larus californicus*)

ORDER: CHARADRIIDAE (SHOREBIRDS, GULLS AND RELATIVES)

FAMILY: CHARADRIIDAE (PLOVERS AND RELATIVES)

KILLDEER (*CHARADRIUS VOCIFEROUS*)*

ORDER: COLUMBIFORMES (PIGEONS AND DOVES)

FAMILY: COLUMBIDAE (PIGEONS AND DOVES)
Rock Dove (*Columba livia*)*
Band-tailed Pigeon (*Columba fasciata*)*
Mourning Dove (*Zenaida macroura*)*
Eurasian Collared-dove (*Streptopelia decaocto*)*

ORDER: STRIGIFORMES (OWLS)

FAMILY: TYTONIDAE (BARN OWLS)
Common Barn Owl (*Tyto alba*)*

FAMILY: STRIGIDAE (TYPICAL OWLS)
Short-eared Owl (*Asio flammeus*)
Great Horned Owl (*Bubo virginianus*)*
Northern Saw-whet Owl (*Aegolius acadicus*)*
Burrowing Owl (*Athene cunicularia*)*

Long-eared Owl (*Asio otus*)
Western Screech Owl (*Megascops kennicottii*)*

ORDER: CAPRIMULGIFORMES (GOATSUCKERS AND RELATIVES)

FAMILY: CAPRIMULGIDAE (GOATSUCKERS)
Common Nighthawk (*Chordeiles minor*)

ORDER: APODIFORMES (SWIFTS AND HUMMINGBIRDS)

FAMILY: TROCHILIDAE (HUMMINGBIRDS)
Anna's Hummingbird (*Calypte anna*)*
Rufous Hummingbird (*Selasphorus rufus*)*
Allen's Hummingbird (*Selasphorus sasin*)*

ORDER: CORACIIFORMES (KINGFISHERS AND RELATIVES)

FAMILY: ALCEDINIDAE (KINGFISHERS)

BELTED KINGFISHER (*CERYLE ALCYON*)*

ORDER: PICIFORMES (WOODPECKERS AND RELATIVES)

FAMILY: PICIDAE (WOODPECKERS AND WRYNECKS)
Acorn Woodpecker (Melanerpes formicivorous)*
Red-breasted Sapsucker *(Sphyrapicus rubber)**
Northern Flicker (*Colaptes auratus*)*
Hairy Woodpecker (*Picoides villosus*)*
Nuttall's Woodpecker (*Picoides nuttallii*)*
Downy Woodpecker (*Picoides pubescens*)*

ORDER: PASSERIFORMES (PERCHING BIRDS)

FAMILY: TYRANNIDAE (TYRANT FLYCATCHERS)
Olive-sided Flycatcher (*Contopus borealis*)*
Western Wood-Pewee (*Contopus sordidulus*)
Dusky Flycatcher (Empidonax oberholseri)
Pacific Slope Flycatcher (*Empidonax difficilis*)*
Black Phoebe (Sayornis nigricans)*
Say's Phoebe (*Sayornis saya*)*
Ash-throated Flycatcher (*Myiarchus cinerascens*)*
Western Kingbird (*Tyrannus verticalis*)*

FAMILY: LANIIDAE (SHRIKES)
Loggerhead Shrike (*Lanius ludovicianus*)*

FAMILY: VIREONIDAE (TYPICAL VIREOS)
Cassin's Vireo (*Vireo cassinii*)
Hutton's Vireo (*Vireo huttoni*)*

FAMILY: CORVIDAE (JAYS, MAGPIES, AND CROWS)
Scrub Jay (Aphelocoma coerulescens)*
Yellow-billed magpie *(Pica nuttalli)**
American Crow (Corvus brachyrhynchos)*

Common Raven (*Corvus corax*)*

FAMILY: ALAUDIDAE (LARKS)
Horned Lark (*Eremophila alpestris*)*

FAMILY: HIRUNDINIDAE (SWALLOWS)
Tree Swallow (*Tachycineta bicolor*)*
Violet-green Swallow (*Tachycineta thalassina*)*
Cliff Swallow (*Hirundo pyrrhonota*)
Barn Swallow (*Hirundo rustica*)
Bank Swallow (*Riparia riparia*)*

FAMILY: PARIDAE (TITMICE)
Oak Titmouse (*Parus inornatus*)*
Chestnut-backed chickadee (*Parus rufescens*)*

FAMILY: AEGITHALIDAE (BUSHTIT)
Bushtit (*Psaltriparus minimus*)*

FAMILY: SITTIDAE (NUTHATCHES)
White-breasted Nuthatch (*Sitta carolinensis*)*

FAMILY: TROGLODYTIDAE (WRENS)
Bewick's Wren (Thryomanes bewickii)*
House Wren (*Troglodytes aedon*)

FAMILY: REGULIDAE (KINGLETS)
Golden-crowned Kinglet (*Regulus regulus*)*
Ruby-crowned Kinglet (*Regulus calendula*)*

FAMILY: TURDIDAE (THRUSHES)
Western Bluebird (*Sialia currucoides*)*
Hermit Thrush (*Catharus guttatus*)*
American Robin (*Turdus migratorius*)*
Varied Thrush (*Ixoreus naevius*)

FAMILY: TIMALIIDAE (BABBLERS)
Wrentit (*Chamaea fasciata*)*

FAMILY: MIMIDAE (MOCKINGBIRDS AND THRASHERS)
Northern Mockingbird (*Mimus polyglottos*)*
California Thrasher (*Toxostoma redivivum*)*

FAMILY: STURNIDAE (STARLINGS)
European Starling (*Sturnus vulgaris*)*

FAMILY: MOTACILLIDAE (WAGTAILS AND PIPITS)
American Pipit (*Anthus rubescens*)*

FAMILY: BOMBYCILLIDAE (WAXWINGS)
Cedar Waxwing (*Bombycilla cedrorum*)

FAMILY: PTILOGONATIDAE (SILKY FLYCATCHERS)
Phainopepla (*Phainopepla nitens*)

FAMILY: PARULIDAE (WOOD WARBLERS AND RELATIVES)
California Yellow Warbler (*Dendroica petechia brewsteri*)
Yellow-rumped Warbler (*Dendroica coronata*)*
Townsend's Warbler (*Dendroica townsendi*)*
Wilson's Warbler (*Wilsonia pusilla*)*
Orange-crowned Warbler (*Vermivora celata*)*
Common Yellowthroat (*Geothlypis trichas*)*

FAMILY: EMBERIZIDAE (EMBERIZINES)
Spotted towhee (*Pipilo maculates*)*
California towhee *(Pipilo crissalis)**
Rufous-crowned Sparrow (*Aimophila ruficeps*)
Chipping Sparrow (*Spizella passerina*)*
Black-chinned Sparrow (*Spizella atrogularis*)
Savannah Sparrow (*Passerculus sandwichensis*)
Song Sparrow (*Melospiza melodia*)*
Lincoln's Sparrow (*Melospiza lincolnii*)*
Golden-crowned Sparrow (*Zonotrichia atricapilla*)*
Dark-eyed Junco (*Junco hyemalis*)*
Lark Sparrow (*Chondestes grammacus*)*
Sage Sparrow (*Amphispiza belli*)*
Grasshopper Sparrow (*Ammodramus savannarum*)*

FAMILY: CARDINALIDAE (CARDINALS, GROSBEAKS AND ALLIES)
Black-headed Grosbeak (*Pheucticus melanocephalus*)*
Lazuli Bunting (*Passerina amoena*)*

FAMILY: ICTERIDAE (BLACKBIRDS, ORIOLES AND ALLIES)
Red-winged Blackbird (*Agelaius phoeniceus*)*
Western Meadowlark (*Sturnella neglecta*)*
Brewer's Blackbird (*Euphagus cyanocephalus*)*
Brown-headed Cowbird (*Molothrus ater*)*
Bullocks oriole (*Icterus bullockii*)*

FAMILY: FRINGILLIDAE (FINCHES)
Purple Finch (*Carpodacus purpureus*)*
House Finch (*Carpodacus mexicanus*)*
Lesser Goldfinch (*Carduelis psaltria*)*
American Goldfinch (*Carduelis tristis*)*

FAMILY: PASSERIDAE (OLD WORLD SPARROWS)
House Sparrow (*Passer domesticus*)*

CLASS: MAMMALIA

ORDER: DIDELPHIMORPHIA (MARSUPIALS)

FAMILY: DIDELPHIDAE (OPOSSUMS)
Virginia Opossum (*Didelphis virginiana*)*

ORDER: INSECTIVORA (SHREWS AND MOLES)

FAMILY: SORICIDAE (SHREWS)
Ornate Shrew (*Sorex ornatus*)
Trowbridge's Shrew (*Sorex trowbridgii*)

FAMILY: TALPIDAE (MOLES)
Broad-footed Mole (*Scapanus latimanus*)

ORDER: CHIROPTERA (BATS)

FAMILY: VESPERTILIONIDAE (VESPERTILIONID BATS)
Little Brown Myotis (*Myotis lucifugus*)
California Myotis (*Myotis californicus*)
Western Pipistrelle (*Pipistrellus hesperus*)
Big Brown Bat (*Eptesicus fuscus*)
Townsend's Big-eared Bat (*Plecotus townsendii*)
Pallid Bat (*Antrozous pallidus*)

FAMILY: MOLOSSIDAE (FREE-TAILED BAT)
Brazilian Free-tailed Bat (*Tadarida brasiliensis*)
Western Mastiff Bay (*Eumops perotis*)

ORDER: LAGOMORPHA (RABBITS, HARES, AND PIKAS)

FAMILY: LEPORIDAE (RABBITS AND HARES)
Desert Cottontail (*Sylvilagus audubonii*)
Black-tailed Hare (*Lepus californicus*)*
Brush Rabbit (*Sylvilagus bachmani*)*

ORDER: RODENTIA (SQUIRRELS, RATS, MICE, AND RELATIVES)

FAMILY: SCIURIDAE (SQUIRRELS, CHIPMUNKS, AND MARMOTS)
California Ground Squirrel (*Spermophilus beecheyi*)*
Western Gray Squirrel (*Sciurus griseus*)

FAMILY: GEOMYIDAE (POCKET GOPHERS)
Botta's Pocket Gopher (*Thomomys bottae*)*

FAMILY: HETEROMYIDAE (POCKET MICE AND KANGAROO RATS)
California Pocket Mouse (*Perognathus californicus*)*

FAMILY: MURIDAE (MICE, RATS AND VOLES)
Western Harvest Mouse (*Reithrodontomys megalotis*)*
California Mouse (*Peromyscus californicus*)*
Deer Mouse (*Peromyscus maniculatus*)*
California Vole (*Microtus californicus*)*

ORDER: CARNIVORA (CARNIVORES)

FAMILY: CANIDAE (FOXES, WOLVES, AND RELATIVES)
Coyote (*Canis latrans*)*
Red Fox (*Vulpes vulpes*)
Gray Fox (*Urocyon cinereoargenteus*)*
Domestic Dog (*Canis familiaris*)*

FAMILY: PROCYONIDAE (RACCOONS AND RELATIVES)
Raccoon (*Procyon lotor*)*
Ringtail (*Bassariscus astutus*)

FAMILY: MUSTELIDAE (WEASELS, BADGERS, AND RELATIVES)
American Badger (*Taxidea taxus*)*

FAMILY: MEPHITIDAE (SKUNKS)
Striped Skunk (*Mephitis mephitis*)*

FAMILY: FELIDAE (CATS)
Feral Cat (*Felis cattus*)
Cougar (*Puma concolor*)*
Bobcat (*Lynx rufus*)*

ORDER: PERISSODACTYLA (HORSES, TAPIRS, AND RELATIVES)

FAMILY: EQUIDAE (HORSES)
Domestic Horse (*Equus caballus*)*

ORDER: ARTIODACTYLA (EVEN-TOED UNGULATES)

FAMILY: SUIDAE (PIGS)
Wild Pig (*Sus Scrofa*)*

FAMILY: CERVIDAE (DEER, ELK, AND RELATIVES)
Black-tailed Deer (*Odocoileus hemionus columbiana*)*

FAMILY: BOVIDAE (SHEEP, GOATS AND RELATIVES)
Domestic Cattle (*Bos Taurus)*

APPENDIX C: MINIMIZATION MEASURES FOR CALIFORNIA RED-LEGGED FROG AND CALIFORNIA TIGER SALAMANDER

The following measures will minimize direct and indirect impacts to California red-legged frogs and California tiger salamanders.

- Prior to the start of construction, a qualified biologist will train all project staff regarding habitat sensitivity, identification of special status species, and required practices. The training shall include the general measures that are being implemented to conserve these species as they relate to the project, the penalties for non-compliance, and the boundaries of the project area. A fact sheet or other supporting materials containing this information should be prepared and distributed. Upon completion of training, employees will sign a form stating that they attended the training and understand all the conservation and protection measures.

- A qualified biologist will survey the project site prior to, and be present to monitor, construction activities during any initial ground disturbance or vegetation clearing or other periods during construction, as necessary. The biologist will capture and relocate any California red-legged frogs and California tiger salamanders that are discovered during the surveys or construction monitoring. Any individuals that are captured should be held for the minimum amount of time necessary to release them to suitable habitat outside of the work area.

- A qualified biologist will stake and flag exclusion zones around all known locations of CRLF and CTS breeding and upland refugia areas in the construction zone. These areas will be avoided during construction activities to the maximum extent practicable. All construction areas will be flagged, and all activity will be confined to these areas.

- If a CRLF or CTS is encountered during construction work, activities will cease until the animal is removed and relocated by a qualified biologist.

- Construction activities should be limited to the period from May 1 through October 31.

- Permanent and temporary construction disturbances and other types of project-related disturbances to CRLF or CTS habitat shall be minimized to the maximum extent practicable and confined to the project site. To minimize temporary disturbances, all project-related vehicle traffic shall be restricted to established roads, construction areas, designated cross-country routes, and other designated areas. These areas also should be included in preconstruction surveys and, to the maximum extent possible, should be established in locations disturbed by previous activities to prevent further adverse effects. Sensitive habitat areas shall be delineated with high visibility flagging or fencing to prevent encroachment of construction personnel and equipment into any sensitive areas during project work activities. At no time shall equipment or personnel be allowed to adversely affect areas outside the project site without authorization from the Service.

- Because dusk and dawn are often the times when CRLF and CTS are most actively foraging and dispersing, all construction activities should cease one half hour before sunset and should not begin prior to one half hour before sunrise.

- No canine or feline pets or firearms (except for federal, state, or local law enforcement officers and security personnel) shall be permitted at the project site to avoid harassment, killing, or injuring of CRLF or CTS.

- A representative shall be appointed by the applicant who will be the contact source for any employee or contractor who might inadvertently kill or injure a CRLF or CTS or who finds a dead, injured or entrapped individual. The representative shall be identified during the tailgate/training session. The representative's name and telephone number shall be provided to the Service prior to the initiation of ground disturbance activities.

- Tightly woven fiber netting or similar material shall be used for erosion control or other purposes at the project site to ensure that CRLF and CTS do not get trapped.

- A litter control program shall be instituted at the entire project site. All construction personnel should ensure that food scraps, paper wrappers, food containers, cans, bottles, and other trash from the project area are deposited in covered or closed trash containers. The trash containers should be removed from the project area at the end of each working day.

APPENDIX D: HCP AVOIDANCE AND MINIMIZATION MEASURES

Table 6-2. Aquatic Avoidance and Minimization Measures

ID	Avoidance and Minimization Measure
	General
1	Minimize the potential impacts on covered species most likely to be affected by changes in hydrology and water quality.
2	Reduce stream pollution by removing pollutants from surface runoff before the polluted surface runoff reaches local streams.
3	Maintain the current hydrograph and, to the extent possible, restore the hydrograph to more closely resemble predevelopment conditions.
4	Reduce the potential for scour at stormwater outlets to streams by controlling the rate of flow into the streams.
5	Invasive plant species removed during maintenance will be handled and disposed of in such a manner as to prevent further spread of the invasive species.
6	Activities in the active (i.e., flowing) channel will be avoided. If activities must be conducted in the active channel, avoidance and minimization measures identified in this table will be applied.
7	Personnel shall prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
8	Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., crew trucks and other logical locations).
9	Personnel shall implement measures to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means when removing sediments from the streams.
10	If ground disturbing activities are planned for a stream channel that is known or suspected to contain elevated levels of mercury, the following steps should be taken. 1. Avoid disturbing soils in streams known or suspected to contain high levels of mercury. 2. Soils that are likely to be disturbed or excavated shall be tested for mercury. Soils shall be remediated if: a. disturbed or excavated soils exposed to flood flows below the 2.33-year channel flow level exceed 1 ppm Hg, or b. disturbed or excavated soils above the 2.33-year flow level exceed 20 ppm Hg.
11	Vehicles shall be washed only at approved areas. No washing of vehicles shall occur at job sites.
12	No equipment servicing shall be done in the stream channel or immediate flood plain, unless equipment stationed in these locations cannot be readily relocated (i.e., pumps, generators).
13	Personnel shall use the appropriate equipment for the job that minimizes disturbance to the stream bottom. Appropriately-tired vehicles, either tracked or wheeled, shall be used depending on the situation
14	If high levels of groundwater in a work area are encountered, the water is pumped out of the work site. If necessary to protect water quality, the water shall be directed into specifically constructed infiltration basins, into holding ponds, or onto areas with vegetation to remove sediment prior to the water re-entering a creek.

Table 6-2. Continued

ID	Avoidance and Minimization Measure
15	If native fish or non-covered, native aquatic vertebrates are present when cofferdams, water bypass structures, and silt barriers are to be installed, a native fish and aquatic vertebrate relocation plan shall be implemented when ecologically appropriate as determined by a qualified biologist to ensure that significant numbers of native fish and aquatic vertebrates are not stranded. Prior to the start of work or during the installation of water diversion structures, native aquatic vertebrates shall be captured in the work area and transferred to another reach as determined by a qualified biologist. Timing of work in streams that supports a significant number of amphibians will be delayed until metamorphosis occurs to minimize impacts to the resource. Capture and relocation of aquatic native vertebrates is not required at individual project sites when site conditions preclude reasonably effective operation of capture gear and equipment, or when the safety of biologist conducting the capture may be compromised. Relocation of native fish or aquatic vertebrates may not always be ecologically appropriate. Prior to capturing native fish and/or vertebrates, the qualified biologist will use a number of factors, including site conditions, system carrying capacity for potential relocated fish, and flow regimes (e.g., if flows are managed) to determine whether a relocation effort is ecologically appropriate. If so, the following factors will be considered when selecting release site(s): 1. similar water temperature as capture location; 2. ample habitat availability prior to release of captured individuals; 3. presence of other same species so that relocation of new individuals will not upset the existing prey/predation function; 4. carrying capacity of the relocation location; 5. potential for relocated individual to transport disease; and 6. low likelihood of fish reentering work site or becoming impinged on exclusion net or screen. Proposals to translocate any covered species will be reviewed and approved by the Wildlife Agencies.
16	When work in a flowing stream is unavoidable, the entire streamflow shall be diverted around the work area by a barrier, except where it has been determined by a qualified biologist that the least environmentally disruptive approach is to work in a flowing stream. Where feasible, water diversion techniques shall allow stream flows to gravity flow around or through the work site.
17	Coffer dams shall be installed both upstream and downstream not more than 100 feet from the extent of the work areas. Coffer dam construction shall be adequate to prevent seepage into or from the work area. Stream flow will be pumped around the work site using pumps and screened intake hoses. All water shall be discharged in a non-erosive manner (e.g., gravel or vegetated bars, on hay bales, on plastic, on concrete, or in storm drains when equipped with filtering devices, etc.).
18	Small in-channel berms that deflect water to one side of the channel during project implementation may be constructed of channel material in channels with low flows.
19	Sumps or basins may also be used to collect water, where appropriate (e.g., in channels with low flows).
20	Diversions shall maintain ambient stream flows below the diversion, and waters discharged below the project site shall not be diminished or degraded by the diversion. All materials placed in the channel to dewater the channel shall be removed when the work is completed. Normal flows shall be restored to the affected stream as soon as is feasible and safe after completion of work at that location.
21	To the extent that stream bed design changes are not part of the project, the stream bed will be returned to as close to pre-project condition as appropriate.
22	To the extent feasible, all temporary diversion structures and the supportive material shall be removed no more than 48 hours after work is completed.
23	Temporary fills, such as for access ramps, diversion structures, or cofferdams, shall be completely removed upon finishing the work.
24	To prevent increases in temperature and decreases in dissolved oxygen (DO), if bypass pipes are used, they shall be properly sized (i.e., larger diameter pipes to better pass the flows). Use of bypass pipes may be avoided by creating a low-flow channel or using other methods to isolate the work area.

Table 6-2. Continued

ID	Avoidance and Minimization Measure
25	Diversions shall maintain fish passage when the project meets the following conditions: 1) the length of the area dewatered exceeds 500 feet, and/or 2) the length of time the stream is dewatered exceeds two weeks in length. Conditions for fish passage shall be met as long as the diversion 1) maintains contiguous flows through a low flow channel in the channel bed or an artificial open channel, 2) presents no vertical drops exceeding six (6) inches and follows the natural grade of the site, 3) maintains water velocities that shall not exceed eight feet per second (8 ft/sec), and 4) maintains adequate water depths consistent with normal conditions in the project reach. An artificial channel used for fish passage shall be lined with cobble/gravel. A closed conduit pipe shall not be used for fish passage. The inlets of diversions shall be checked daily to prevent accumulation of debris.
26	Any sediment removed from a project site shall be stored and transported in a manner that minimizes water quality impacts.
27	Sediment from the San Francisco Bay Watershed, including that for reuse, will not be removed to areas any farther south than Metcalf Road in south San Jose.
28	Where practical, the removed sediments and gravels will be re-used.
29	Existing native vegetation shall be retained by removing only as much vegetation as necessary to accommodate the trail clearing width. Maintenance roads should be used to avoid effects on riparian corridors.
30	Vegetation control and removal in channels, on stream banks, and along levees and maintenance roads shall be limited to removal necessary for facility inspection purposes, or to meet regulatory requirements or guidelines.
31	When conducting vegetation management, retain as much understory brush and as many trees as feasible, emphasizing shade producing and bank stabilizing vegetation. If riparian vegetation is to be removed with chainsaws, consider using saws currently available that operate with vegetable-based bar oil.
32	In-channel vegetation removal may result in increased local erosion due to increased flow velocity. To minimize the effect, the top of the bank shall be protected by leaving vegetation in place to the maximum extent possible.
33	Regional Board objectives for temperature change in receiving waters (measured 100 feet downstream of discharge point) shall not be exceeded. Receiving water and discharge water may be monitored for temperature changes after a comparison of ambient temperature to pipeline water temperature suggests the potential for change.
	Project Design
34	Use the minimum amount of impermeable surface (building footprint, paved driveway, etc.) as practicable.
35	Use pervious materials, such as gravel or turf pavers, in place of asphalt or concrete to the extent practicable.
36	Use flow control structures such as swales, retention/detention areas, and/or cisterns to maintain the existing (pre-project) peak runoff.
37	Direct downspouts to swales or gardens instead of storm drain inlets.
38	Use flow dissipaters at runoff inlets (e.g., culvert drop-inlets) to reduce the possibility of channel scour at the point of flow entry.
39	Minimize alterations to existing contours and slopes, including grading the minimum area necessary.
40	Maintain native shrubs, trees and groundcover whenever possible and revegetate disturbed areas with local native or non-invasive plants.
41	Combine flow-control with flood control and/or treatment facilities in the form of detention/retention basins, ponds, and/or constructed wetlands.
42	Use flow control structures, permeable pavement, cisterns, and other runoff management methods to ensure no change in post-construction peak runoff volume from pre-project conditions for all covered activities with more than 5,000 square feet of impervious surface.
43	Site characteristics will be evaluated in advance of project design to determine if non-traditional designs, such as bioengineered bank treatments that incorporate live vegetation, can be successfully utilized while meeting the requirements of the project.
44	Maintenance of natural stream characteristics, such as riffle-pool sequences, riparian canopy, sinuosity, floodplain, and a natural channel bed, will be incorporated into the project design.

Table 6-2. Continued

ID	Avoidance and Minimization Measure
45	Stream crossings shall incorporate a free-span bridge unless infeasible due to engineering or cost constraints or unsuitable based on minimal size of stream (swale without bed and banks or a very small channel). If a bridge design cannot free-span a stream, bridge piers and footings will be designed to have minimum impact on the stream. A hydraulics analysis must be prepared and reviewed by the jurisdictional partner, including SCVWD as appropriate, demonstrating that piers or footings will not cause significant scour or channel erosion. Whenever possible, the span of bridges will also allow for upland habitat beneath the bridge to provide undercrossing areas for wildlife species that will not enter the creek. Native plantings, natural debris, or scattered rocks will be installed under bridges to provide wildlife cover and encourage the use of crossings.
46	Whenever possible, the span of bridges will also allow for upland habitat beneath the bridge to provide undercrossing areas for wildlife species that will not enter the creek.
47	If a culvert is used, up- and downstream ends of the culvert must be appropriately designed so that the stream cannot flow beneath the culvert or create a plunge pool at the downstream end. Preference will be given to designs that allow a natural bottom (arch culvert) and/or which do not alter natural grade.
48	Trails will be sited and designed with the smallest footprint necessary to cross through the in-stream area. Trails will be aligned perpendicular to the channel and be designed to avoid any potential for future erosion. New trails that follow stream courses will be sited outside the riparian corridor.
49	The project or activity must be designed to avoid the removal of riparian vegetation, if feasible. If the removal of riparian vegetation is necessary, the amount shall be minimized to the amount necessary to accomplish the required activity and comply with public health and safety directives.
50	If levee reconstruction requires the removal of vegetation that provides habitat value to the adjacent stream (e.g., shading, bank stabilization, food sources, etc.), then the project will include replacement of the vegetation/habitat that was removed during reconstruction unless it is determined to be inappropriate to do so by the relevant resource agencies (e.g., CDFG and USFWS).
51	All projects will be conducted in conformance with applicable County and/or city drainage policies.
52	Adhere to the siting criteria described for the borrow site covered activity (see Chapter 2 for details).
53	When possible, maintain a vegetated buffer strip between staging/excavation areas and receiving waters.
54	When not within the construction footprint, deep pools within stream reaches shall be maintained as refuge for fish and wildlife by constructing temporary fencing and/or barrier so as to avoid pool destruction and prevent access from the project site.
55	For stream maintenance projects that result in alteration of the stream bed during project implementation, its low flow channel shall be returned to its approximate prior location with appropriate depth for fish passage without creating a potential future bank erosion problem.
56	Increased water velocity at bank protection sites may increase erosion downstream. Therefore, bank stabilization site design shall consider hydraulic effects immediately upstream and downstream of the work area. Bank stabilization projects will be designed and implemented to provide similar roughness and characteristics that may affect flows as the surrounding areas just upstream and downstream of the project site.
57	When parallel to a stream or riparian zone and not located on top of a levee, new trails shall be located behind the top of bank or at the outside edge of the riparian zone except where topographic, resource management, or other constraints or management objectives make this not feasible or undesirable.
58	Existing access routes and levee roads shall be used if available to minimize impacts of new construction in special status species habitats and riparian zones.
59	Trails in areas of moderate or difficult terrain and adjacent to a riparian zone shall be composed of natural materials or shall be designed (e.g., a bridge or boardwalk) to minimize disturbance and need for drainage structures, and to protect water quality.
60	Trail crossings of freshwater stream zones and drainages shall be designed to minimize disturbance, through the use of bridges or culverts, whichever is least environmentally damaging. Structures over water courses shall be carefully placed to minimize disturbance. Erosion control measures shall be taken to prevent erosion at the outfalls of drainage structures.

Table 6-2. Continued

ID	Avoidance and Minimization Measure
	Construction
61	Minimize ground disturbance to the smallest area feasible.
62	Use existing roads for access and disturbed area for staging as site constraints allow. Off-road travel will avoid sensitive communities such as wetlands and known occurrences of covered plants.
63	Prepare and implement sediment erosion control plans.
64	No winter grading unless approved by City Engineer and specific erosion control measures are incorporated.
65	Control exposed soil by stabilizing slopes (e.g., with erosion control blankets) and protecting channels (e.g., using silt fences or straw wattles).
66	Control sediment runoff using sandbag barriers or straw wattles.
67	No stockpiling or placement of erodible materials in waterways or along areas of natural stormwater flow where materials could be washed into waterways.
68	Stabilize stockpiled soil with geotextile or plastic covers.
69	Maintain construction activities within a defined project area to reduce the amount of disturbed area.
70	Only clear/prepare land which will be actively under construction in the near term.
71	Preserve existing vegetation to the extent possible.
72	Equipment storage, fueling and staging areas will be sited on disturbed areas or non-sensitive habitat outside of a stream channel.
73	Avoid wet season construction.
74	Stabilize site ingress/egress locations.
75	Dispose of all construction waste in designated areas and prevent stormwater from flowing onto or off of these areas.
76	Prevent spills and clean up spilled materials.
77	Sweep nearby streets at least once a day.
78	In-stream projects occurring while the stream is flowing must use appropriate measures to protect water quality, native fish and covered wildlife species at the project site and downstream of the project site.
79	If mercury contamination may be present, the channel must be dewatered prior to commencement of the activity.
80	All personnel working within or adjacent to the stream setback (i.e., those people operating ground-disturbing equipment) will be trained by a qualified biologist in these avoidance and minimization measures and the permit obligations of project proponents working under this Plan.
81	Temporary disturbance or removal of aquatic and riparian vegetation will not exceed the minimum necessary to complete the work.
82	Channel bed temporarily disturbed during construction activities will be returned to pre-project or ecologically improved conditions at the end of construction.
83	Sediments will be stored and transported in a manner that minimizes water quality impacts. If soil is stockpiled, no runoff will be allowed to flow back to the channel.
84	Appropriate erosion control measures (e.g., fiber rolls, filter fences, vegetative buffer strips) will be used on site to reduce siltation and runoff of contaminants into wetlands, ponds, streams, or riparian vegetation. Fiber rolls used for erosion control will be certified as free of noxious weed seed. Filter fences and mesh will be of material that will not entrap reptiles and amphibians. Erosion control measures will be placed between the outer edge of the buffer and the project site.
85	Seed mixtures applied for erosion control will not contain invasive nonnative species and will be composed of native species or sterile nonnative species. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives.
86	Topsoil removed during soil excavation will be preserved and used as topsoil during revegetation when it is necessary to conserve the natural seed bank and aid in revegetation of the site.
87	Vehicles operated within and adjacent to streams will be checked and maintained daily to prevent leaks of materials that, if introduced to the water, could be deleterious to aquatic life.

Table 6-2. Continued

ID	Avoidance and Minimization Measure
88	Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas.
89	The potential for traffic impacts on terrestrial animal species will be minimized by adopting traffic speed limits.
90	All trash will be removed from the site daily to avoid attracting potential predators to the site. Personnel will clean the work site before leaving each day by removing all litter and construction-related materials.
91	To prevent the spread of exotic species and reduce the loss of native species, aquatic species will be netted at the drain outlet when draining reservoirs or ponds to surface waters. Captured native fish, native amphibians, and western pond turtles will be relocated if ecologically appropriate. Exotic species will be dispatched.
92	To minimize the spread of pathogens all staff working in aquatic systems (i.e., streams, ponds, and wetlands)—including site monitors, construction crews, and surveyors—will adhere to the most current guidance for equipment decontamination provided by the Wildlife Agencies at the time of activity implementation. Guidance may require that all materials that come in contact with water or potentially contaminated sediments, including boot and tire treads, be cleaned of all organic matter and scrubbed with an appropriate cleansing solution, and that disposable gloves be worn and changed between handling equipment or animals. Care should be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat.
93	When accessing upland areas adjacent to riparian areas or streams, access routes on slopes of greater than 20% should generally be avoided. Subsequent to access, any sloped area should be examined for evidence of instability and either revegetated or filled as necessary to prevent future landslide or erosion.
94	Personnel shall use existing access ramps and roads if available. If temporary access points are necessary, they shall be constructed in a manner that minimizes impacts to streams.
95	To prevent inadvertent entrapment of animals during excavation, all excavated, steep-walled holes or trenches more than 2-feet deep will be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks.
96	Isolate the construction area from flowing water until project materials are installed and erosion protection is in place.
97	Erosion control measures shall be in place at all times during construction. Do not start construction until all temporary control devices (straw bales, silt fences, etc.) are in place downstream of project site.
98	When needed, utilize in-stream grade control structures to control channel scour, sediment routing, and headwall cutting.
	Post-Construction
99	Conduct street cleaning on a regular basis
100	Potential contaminating materials must be stored in covered storage areas or secondary containment that is impervious to leaks and spills
101	Runoff pathways shall be free of trash containers or trash storage areas. Trash storage areas shall be screened or walled
102	Immediately after project completion and before close of seasonal work window, stabilize all exposed soil with mulch, seeding, and/or placement of erosion control blankets .
103	All disturbed soils will be revegetated with native plants and/or grasses or sterile nonnative species suitable for the altered soil conditions upon completion of construction. Local watershed native plants will be used if available. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives. All disturbed areas that have been compacted shall be de-compacted prior to planting or seeding. Cut-and-fill slopes will be planted with local native or non-invasive plants suitable for the altered soil conditions.
104	Measures will be utilized on site to prevent erosion along streams (e.g., from road cuts or other grading), including in streams that cross or are adjacent to the project proponent's property. Erosion control measures will utilize natural methods such as erosion control mats or fabric, contour wattling, brush mattresses, or brush layers. For more approaches and detail, please see the *Bank Protection/ Erosion Repair Design Guide* in the Santa Clara Valley Water Resources Protection Collaborative's *User Manual: Guidelines & Standards for Land Use Near Streams* (Santa Clara Valley Water Resources Protection Collaborative 2006).

Table 6-2. Continued

ID	Avoidance and Minimization Measure
105	Vegetation and debris must be managed in and near culverts and under and near bridges to ensure that entryways remain open and visible to wildlife and that passage through the culvert or bridge remains clear.
106	Prior to undertaking stream maintenance activities, reach conditions will be assessed to identify tasks that are necessary to maintain the channel for the purpose for which it was designed and/or intended (e.g., flood control, groundwater recharge). Only in-stream work that is necessary to maintain the channel will be conducted.
107	On streams managed for flood control purposes, when stream reaches require extensive vegetation thinning or removal (e.g., when the channel has been fully occluded by willows or other vegetation), removal will be phased so that some riparian land cover remains and provides some habitat value. In addition, vegetation removal will be targeted and focused on removing the least amount of riparian vegetation as possible while still meeting the desired flood control needs. For example, vegetation removal should be focused on shrubby undergrowth at the toe-of-slope that is most likely to increase roughness and create a flooding hazard. Vegetation on the upper banks, particularly mature tree canopy, should be maintained to the extent possible to provide habitat for birds and small mammals and shading for the active channel.
108	When reaches require sediment removal, approaches will be considered that may reduce the impacts of the activity. Examples of potential approaches include phasing of removal activities or only removing sediment along one half of the channel bed, allowing the other half to remain relatively undisturbed.
109	In streams not managed for flood control purposes, woody material (including live leaning trees, dead trees, tree trunks, large limbs, and stumps) will be retained unless it is threatening a structure, impedes reasonable access, or is causing bank failure and sediment loading to the stream.
110	If debris blockages threaten bank stability and may increase sedimentation of downstream reaches, debris will be removed. When clearing natural debris blockages (e.g., branches, fallen trees, soil from landslides) from the channel, only remove the minimum amount of debris necessary to maintain flow conveyance (i.e., prevent significant backwatering or pooling). Non-natural debris (e.g., trash, shopping carts, etc.) will be fully removed from the channel.
111	If bank failure occurs due to debris blockages, bank repairs will only use compacted soil, and will be re-seeded with native grasses or sterile nonnative hybrids and stabilized with natural erosion control fabric. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives. If compacted soil is not sufficient to stabilize the slope, bioengineering techniques must be used. No hardscape (e.g., concrete or any sort of bare riprap) or rock gabions may be utilized in streams not managed for flood control except in cases where infrastructure or human safety is threatened (e.g., undercutting of existing roads). Rock riprap may only be used to stabilize channels experiencing extreme erosion, and boulders must be backfilled with soil and planted with willows or other native riparian species suitable for planning in such a manner. If available, local native species will be utilized as appropriate.
112	Pumps and generators shall be maintained and operated in a manner that minimizes impacts to water quality and aquatic species.
113	The channel bottom shall be re-graded at the end of the work project to as close to original conditions as possible.
114	Erosion control methods shall be used as appropriate during all phases of routine maintenance projects to control sediment and minimize water quality impacts.
115	All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods will be thoroughly inspected for wildlife by properly trained construction personnel before the pipe is subsequently buried, capped, or otherwise used or moved in anyway.

Appendix E.4

Non-Protocol California Tiger Salamander Aquatic Larval Survey Results Report

ESA

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

NON-PROTOCOL CALIFORNIA TIGER SALAMANDER AQUATIC LARVAL SURVEY RESULTS REPORT SARGENT RANCH PROPERTY (USFWS REFERENCE NUMBER 2017-TA-2100) SANTA CLARA COUNTY, CALIFORNIA

Prepared for

UNITED STATES FISH AND WILDLIFE SERVICE

Sarah Markegard
Recovery Branch
US Fish and Wildlife Service
2800 Cottage Way
Sacramento, CA 95825

Prepared by

LIVE OAK ASSOCIATES, INC.

Geoffrey D. Cline, M.S., Senior Project Manager and Ecologist
USFWS Permit #TE50510A-3
CDFW Scientific Collecting Permit #5981

July 12, 2017 PN 662-09

EXECUTIVE SUMMARY

Live Oak Associates, Inc. conducted a non-protocol California tiger salamander (CTS) (*Ambystoma californiense*) survey on May 21 and 29, 2017 within a portion of the Sargent Ranch Property (USFWS Ref. No. 2017-TA-2100) located in Santa Clara County, California. Authorization to complete the survey was granted by the U.S. Fish and Wildlife Service on May 19, 2017. The survey was conducted by Geoffrey D. Cline (U.S. Fish and Wildlife Service Recovery Permit #50510A-3 and California Department of Fish and Wildlife Scientific Collecting Permit #5981) in accordance with the authorization request and generally followed the requirements of Mr. Cline's permits and CDFW memorandum of understanding, and the *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander (CDFW and USFWS 2003).*

The approximately 5,300-acre Sargent Ranch Property consists mostly of non-native grassland and oak woodland habitat, drainages, and cattle ponds.

Nine inundated hydrologic features were sampled and an additional 11 hydrologic features were surveyed, but were dry or did not appear to be suitable for CTS. No pure California tiger salamanders were captured during this survey effort. However, Eastern tiger salamander or California/Eastern tiger salamanders were observed in one pond, near the northeast corner of the site. In addition, California red-legged frog and other aquatic vertebrate species were observed throughout the site.

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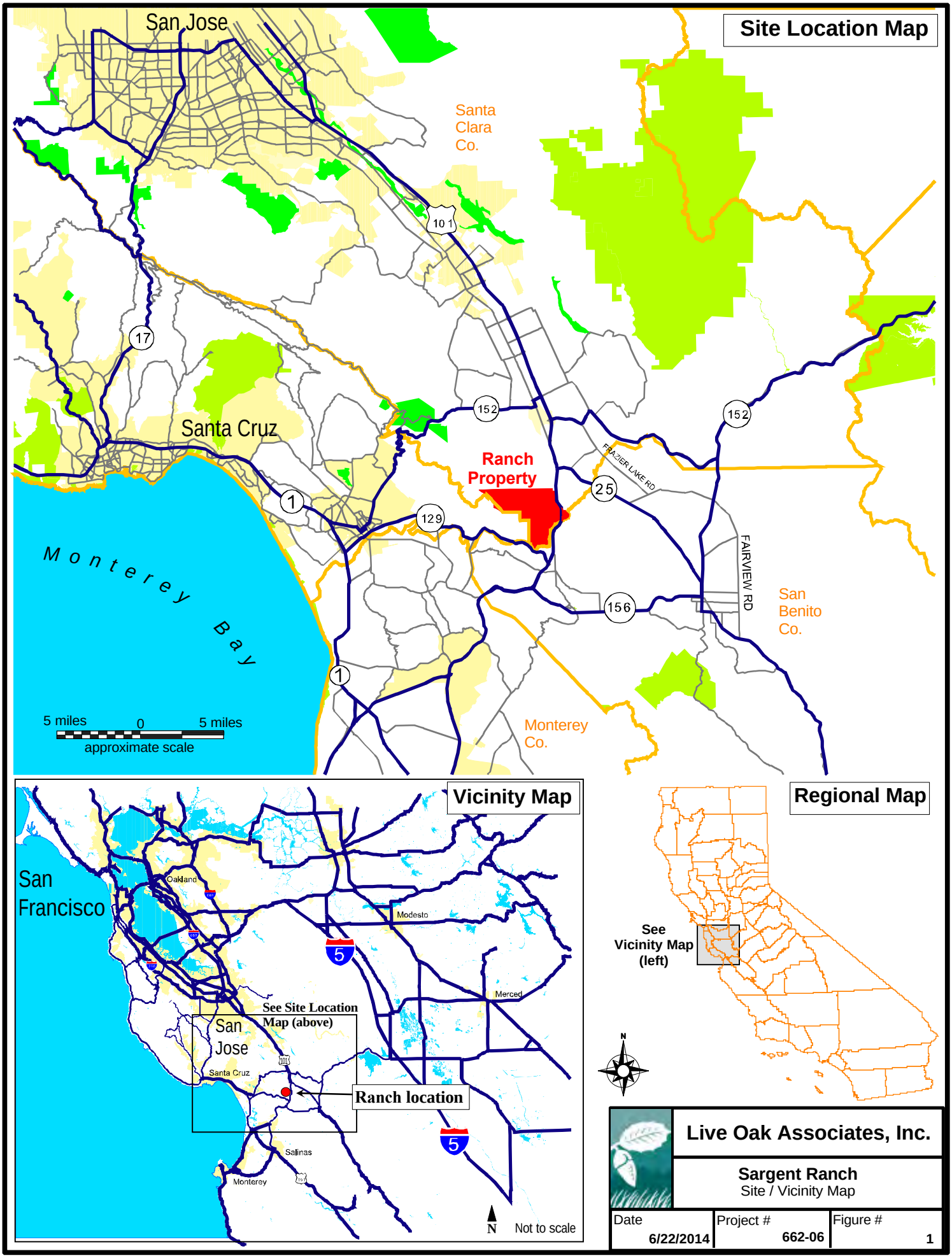
1.0 INTRODUCTION

The survey report that follows describes the methods and results of the non-protocol California tiger salamander (*Ambystoma californiense*) aquatic larval surveys conducted by Live Oak Associates, Inc. (LOA) for the Sargent Ranch Property (hereafter referred to as "ranch") (USFWS Reference Number 2017-TA-2100).

The approximately 3,700-acre survey area of the 5,300-acre ranch is located immediately west of Highway 101, approximately one mile south of its interchange with Highway 25, to the south of the City of Gilroy, in unincorporated Santa Clara County, California (Figure 1). The ranch is bound to the east by Highway 101; to the south by the Pajaro River; and to the west and north by privately-owned rangeland. The remainder of the ranch occurs immediately east of Highway 101. This latter portion of the ranch is bound to the west by Highway 101; to the south by the Pajaro River; and to the east and north by agricultural crop lands.

The ranch may be found on the *Chittenden* USGS 7.5 minute topographic quadrangle, at the intersection of Townships 11 and 12 South, and Ranges 3 and 4 East (Figure 2) on gently to steeply rolling foothills on the east side and at the southernmost extreme of the Santa Cruz Range. Elevations of the ranch range from a low of approximately 135 feet NGVD (National Geodetic Vertical Datum) at its southwest corner to a high of just over 1,000 feet NGVD on the highest hills in the western central portion of the site. Three main watersheds occur on the ranch and include Sargent Creek, Tar Creek and Pescadero Creek, all of which are tributaries of the Pajaro River. The Pajaro River eventually drains into Monterey Bay southwest of the ranch. The ranch is currently used primarily for cattle grazing although active oil wells also occur on the ranch near Tar Creek and portions of the ranch are used for oat hay production

The most prevalent habitat on the ranch and within the survey area is California annual grassland habitat used as rangeland (Figure 3). Other habitats present include oak woodlands, riparian woodlands, chaparral, agricultural areas, and hydrologic features, including ephemeral, intermittent and perennial drainages.


Site Location Map
San Jose
Santa Clara Co.
101
17
Santa Cruz
152
Ranch Property
FRAZIER LAKE RD
25
129
1
FAIRVIEW RD
156
San Benito Co.
Monterey Bay
5 miles
0
5 miles
approximate scale
Monterey Co.
Vicinity Map
San Francisco
Oakland
Modesto
5
Merced
See Site Location Map (above)
San Jose
Santa Cruz
Ranch location
Salinas
Monterey
N
Not to scale
Regional Map
See Vicinity Map (left)
N
Live Oak Associates, Inc.
Sargent Ranch
Site / Vicinity Map
Date
6/22/2014
Project #
662-06
Figure #
1

Ranch Boundary

Ranch Boundary

Ranch Boundary

1 mile 0 1 mile

Approximate Scale

USGS Chittenden and Watsonville East 7-1/2 minute quadrangles

Live Oak Associates, Inc.		
Sargent Ranch U.S.G.S. Quadrangles		
Date 6/22/2014	Project # 662-06	Figure # 2

Sargen Ranc Boundary

Tick Creek

Highway 101

Sycamore Creek

Tar Creek

Sargen Ranc Boundary

Permanent Overburden tockpile

Access Rd

oposed Sa gent Ranch Qua y

Proposed Mitigation ite

Sargent Creek

101

oposed Sa gent Ranch Qua y

LEGEND

Ha itats

- California Annual Grassland
- Coast Live Oak Forest and Woodland
- Coastal and Valley Freshwater Marsh
- Grain, Row-crop, Hay and Pasture, Disked / Short-term Fallowed
- Mixed Oak Woodland and Forest
- Mixed Riparian Forest and Woodland
- Northern Coastal Scrub / Diablan Sage Scrub
- Northern Mixed Chaparral / Chamise Chaparral
- Pond
- Redwood Forest
- Rural Residential
- Seasonal Wetland
- Serpentine Grassland
- Serpentine Seep
- Urban - Suburban
- Valley Oak Woodland
- Willow Riparian Forest and Scrub

Hydrology

- Drainages with defined bed and bank
- U. .G. . Blueline Drainages

5,000' 0 5,000 f t

Approximat Scal

ources:
Santa Cla a County HC Land Cove
Santa Cla a County LIDAR Topog aphic Su vey

Liv Oak Associat s, Inc.

Sarg nt Ranch
Habitats

D e	Projec #	Figure #
7/12/2017	662-09	3

1.1 Proposed Project

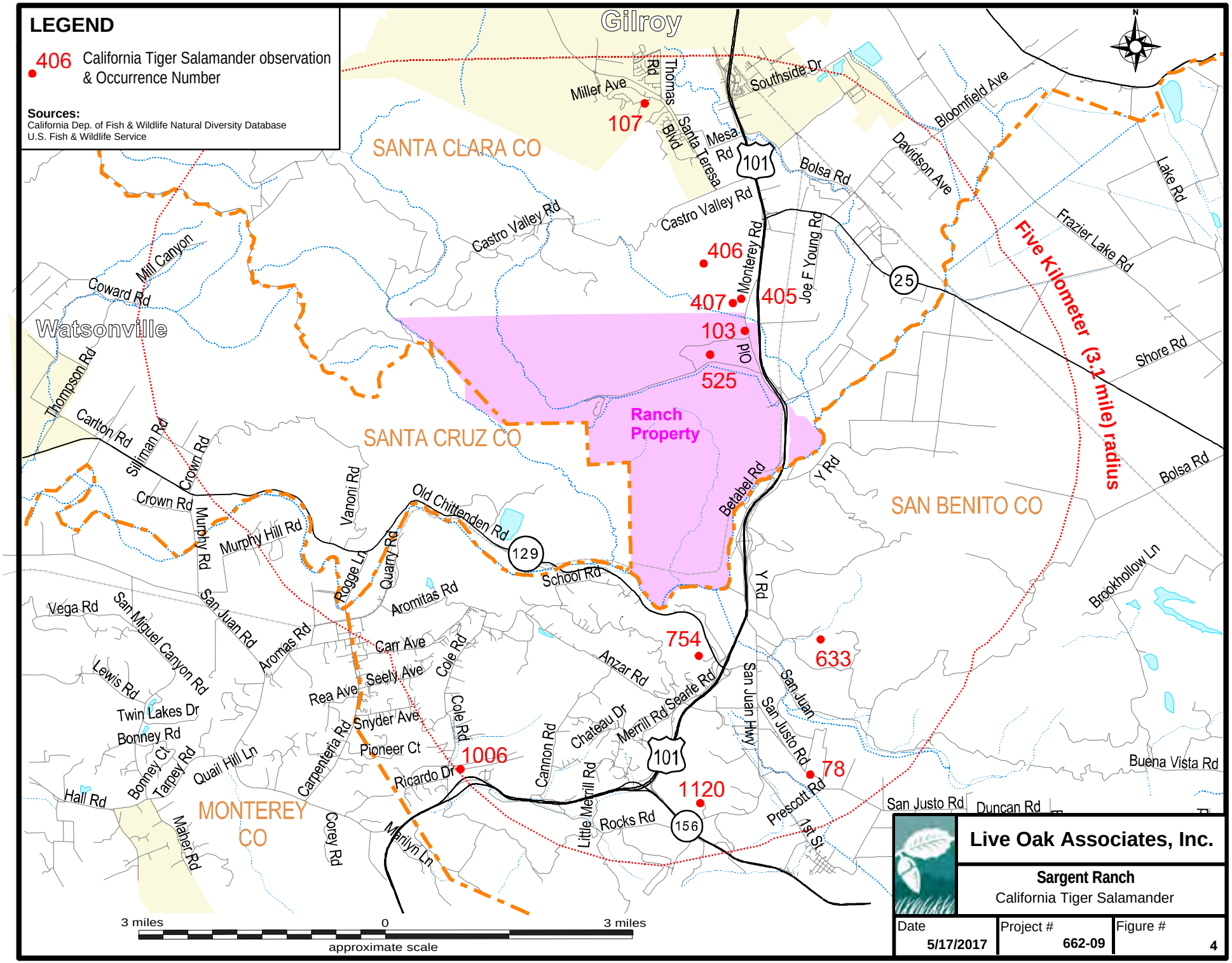
The project proponent proposes to construct a quarry and mitigation area within the approximately 3,700-acre study area.

1.2 Background and Purpose

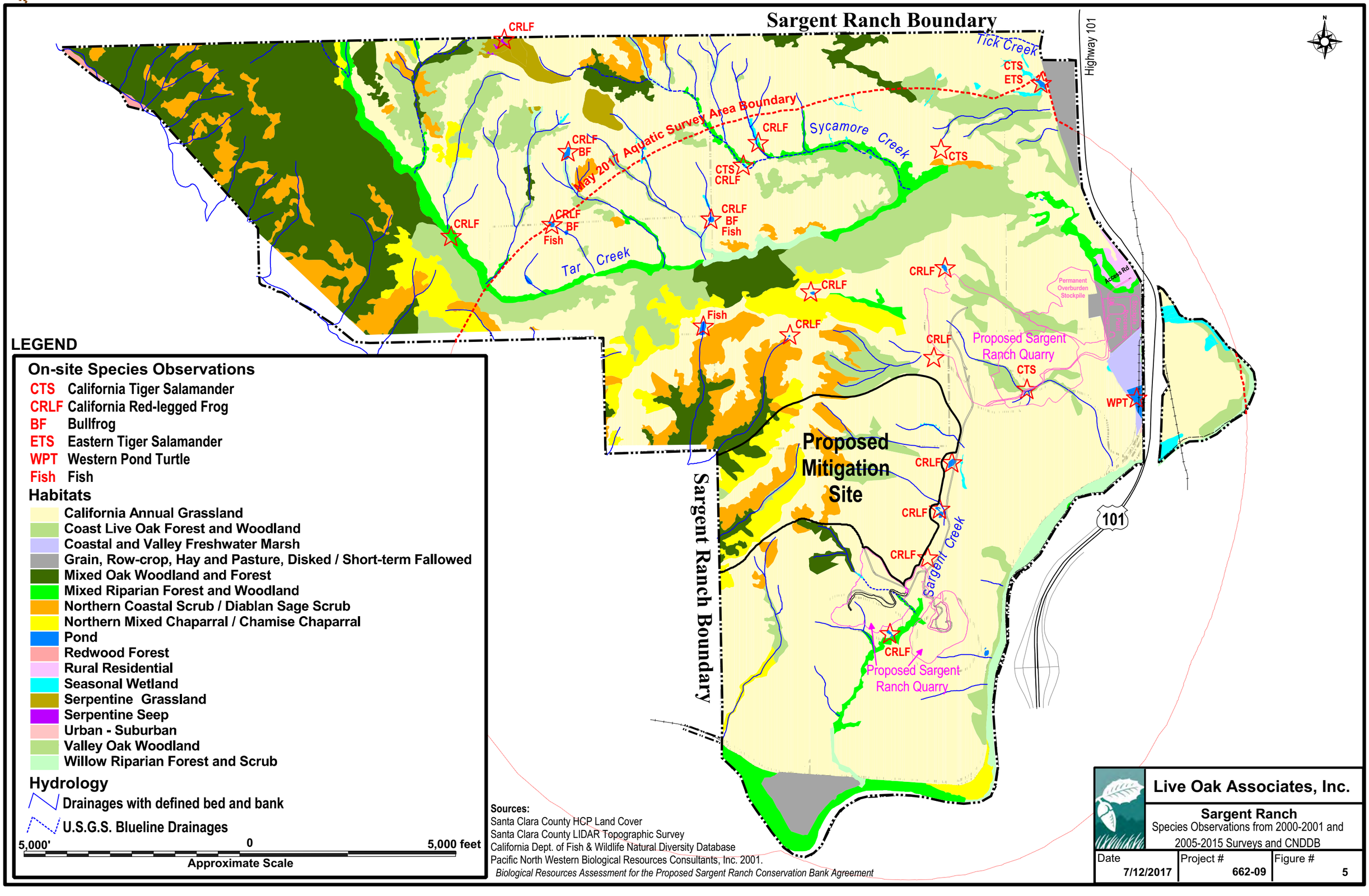
Eleven (11) CTS California Natural Diversity Database (CNDDB) observations (CDFW 2017) occur within five kilometers of the ranch (Figure 4). Two of these observations are located in a pond/seasonal wetland complex in the very northeastern corner of the ranch, near Tick Creek, and within a pond adjacent to Sycamore Creek, which were reported by Pacific North Western Biologists from surveys conducted in 2000-2001 (CDFW 2017). Hydrologic feature number 37 is located within this pond/seasonal wetland complex. This location was confirmed to support introduced eastern tiger salamanders (*Ambystoma tigrinum*) and hybrids of the two species (confirmed via genetic analysis by UC Davis).

In addition to these two CNDDB observations on the ranch, Pacific North Western Biological (PNWB) biologists also confirmed a third observation of larva in a seasonal wetland within a drainage channel south of Tar Creek, which occurs within the proposed quarry project site. However, this hydrologic feature was observed by PNWB to have dried up before the CTS larva could metamorphose. During several surveys conducted by LOA on the ranch from 2005 to the present, this wetland was only observed to hold water this past winter and was observed to be almost completely dry by the end of April 2017. Figure 5, below, depicts CNDDB observations on the ranch; results of the 2000-2001 PNWB surveys; results of three CTS and CRLF habitat assessment surveys and a non-protocol CTS larval survey (conducted by LOA associate biologists Molly Goble and Mark Jennings during the period 2005 through 2015); and the habitats of the ranch.

The purpose of these surveys was to investigate CTS presence within the study area of the ranch to help support planning and CEQA analysis.


LEGEND
406 California Tiger Salamander observation & Occurrence Number
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service
Gilroy
SANTA CLARA CO
SANTA CRUZ CO
SAN BENITO CO
MONTEREY CO
Watsonville
Ranch Property
Five Kilometer (3.1 mile) radius
107
406
407
405
103
525
754
633
1006
78
1120
Miller Ave
Thomas Rd
Santa Teresa Blvd
Mesa Rd
Southside Dr
Bloomfield Ave
Davidson Ave
Bolsa Rd
Castro Valley Rd
Monterey Rd
Joe F Young Rd
Frazier Lake Rd
Lake Rd
Shore Rd
Old
Y Rd
Betabel Rd
Mill Canyon
Coward Rd
Thompson Rd
Carlton Rd
Silliman Rd
Crown Rd
Murphy Rd
Murphy Hill Rd
Vanoni Rd
Old Chittenden Rd
Rogge Ln
Quarry Rd
School Rd
Aromitas Rd
Vega Rd
San Miguel Canyon Rd
San Juan Rd
Aromas Rd
Carr Ave
Cole Rd
Anzar Rd
Merrill Rd
Searle Rd
San Juan Hwy
San Juan
San Justo Rd
Brookhollow Ln
Buena Vista Rd
Lewis Rd
Twin Lakes Dr
Bonney Rd
Bonney Ct
Tarpey Rd
Quail Hill Ln
Rea Ave
Seely Ave
Snyder Ave
Pioneer Ct
Ricardo Dr
Carpenteria Rd
Cannon Rd
Chateau Dr
Little Merrill Rd
Rocks Rd
Prescott Rd
4th St
Duncan Rd
Hall Rd
Maher Rd
Corey Rd
Marilyn Ln
101
25
129
156
3 miles
0
3 miles
approximate scale
N
Live Oak Associates, Inc.
Sargent Ranch
California Tiger Salamander
Date 5/17/2017
Project # 662-09
Figure # 4

Sargent Ranch Boundary



LEGEND

On-site Species Observations

- CTS California Tiger Salamander
- CRLF California Red-legged Frog
- BF Bullfrog
- ETS Eastern Tiger Salamander
- WPT Western Pond Turtle
- Fish Fish

Habitats

- California Annual Grassland
- Coast Live Oak Forest and Woodland
- Coastal and Valley Freshwater Marsh
- Grain, Row-crop, Hay and Pasture, Disked / Short-term Fallowed
- Mixed Oak Woodland and Forest
- Mixed Riparian Forest and Woodland
- Northern Coastal Scrub / Diablan Sage Scrub
- Northern Mixed Chaparral / Chamise Chaparral
- Pond
- Redwood Forest
- Rural Residential
- Seasonal Wetland
- Serpentine Grassland
- Serpentine Seep
- Urban - Suburban
- Valley Oak Woodland
- Willow Riparian Forest and Scrub

Hydrology

- Drainages with defined bed and bank
- U.S.G.S. Blueline Drainages

5,000' 0 5,000 feet

Approximate Scale

Sources:
Santa Clara County HCP Land Cover
Santa Clara County LIDAR Topographic Survey
California Dept. of Fish & Wildlife Natural Diversity Database
Pacific North Western Biological Resources Consultants, Inc. 2001.
Biological Resources Assessment for the Proposed Sargent Ranch Conservation Bank Agreement

Live Oak Associates, Inc.

Sargent Ranch
Species Observations from 2000-2001 and 2005-2015 Surveys and CNDDB

Date	Project #	Figure #
7/12/2017	662-09	5

2.0 METHODS

On May 17, 2017 a USFWS site assessment and authorization request was submitted to Ms. Sarah Markegard (Sacramento Fish and Wildlife Office Recovery Permit Coordinator). On May 19, 2017, LOA received authorization from Ms. Markegard to complete the surveys (see Attachment A for the authorization request and email response).

On May 21 and 27, 2017 LOA biologist Geoffrey Cline (USFWS Permit #50510A-3; CDFW Scientific Collecting Permit #5981) conducted aquatic larval sampling in representative hydrologic features of the survey area, with the help of assistants. LOA biologist Emily Moffitt assisted on May 21 and LOA biologist Dr. Mark Jennings assisted on May 27, 2017. These surveys were completed in accordance with the authorization request prepared for the USFWS and because these surveys were "non-protocol" they generally followed the CDFW's and USFWS's *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* (2003) and Mr. Cline's permits and CDFW interim memorandum of understanding.

To survey the area Mr. Cline and one assistant drove along roads throughout the survey area of the ranch and surveyed hydrologic features that were likely to hold water and/or have had CTS or California red-legged frog (*Rana draytonii*) observations during previous surveys. Hydrologic features that were inundated and were expected to be of good quality for CTS were then sampled. Not all hydrologic features within the survey area were visually surveyed, so it is likely that other features in the survey area were inundated and of good habitat quality for CTS.

Prior to completing aquatic larval sampling, all sampling and field gear was disinfected with a 70% ethanol solution. Sampling and field gear included waders, dipnets, and a 4' X 10' seine. All nets used had 1/8" openings. Either or both types of nets were used to sample representative hydrologic features, which depended on the depth and size of the area to be sampled. Of the areas sampled, up to 100-percent of the hydrologic feature was sampled with dipnets and/or the seine. Hydrologic features that were deeper than 4.5' or highly vegetated were not completely sampled.

All vertebrate species captured were identified to species and representative pictures of most species were taken. Many of the invertebrate species captured and the aquatic vegetation observed within the hydrologic features were identified to species.

In addition to species-specific data, data on each hydrologic feature that was sampled was collected. The date and hydrologic feature number, type, size (width, length, and depth), and turbidity were collected, and one picture of each hydrologic feature sampled was taken.

3.0 RESULTS

Mr. Cline and the LOA assistants sampled nine hydrologic features of the Sargent Ranch Property and did not capture any California tiger salamander; however, approximately 50 eastern tiger salamanders or California/Eastern tiger salamander hybrids (*A. tigrinum* X *A. californiense*), 100 California red-legged frogs; hundreds to thousands of Pacific newts (*Taricha sp.*), hundreds to thousands of Sierran treefrogs (*Pseudacris sierra*), hundreds of California toads (*Anaxyrus boreas halophilus*), and a few three-spined sticklebacks (*Gasterosteus aculeatus*) were captured (see Table 1 and Figure 6 below). A variety of invertebrate species were captured as well and included species such as water boatman (*Corixidae sp.*), backswimmers (*Notonectidae sp.*), snails, clams, dragonfly (*Anisoptera sp.*), midge (*Culicoides impunctatus*), and giant water bugs (*Belostomatidae sp.*), among others. Vegetation present within or immediately adjacent to the hydrologic features sampled included species such as curly dock (*Rumex crispus*), cocklebur (*Zanthium sp.*), sedge (*Carex sp.*), milk thistle (*Silybum marianum*), brass buttons (*Cotula sp.*), algae, cattails (*Typha sp.*), and other wetland and upland vegetation. Representative photographs of most vertebrate species captured are presented in Attachment B and photographs of each hydrologic feature surveyed are presented in Attachment C.

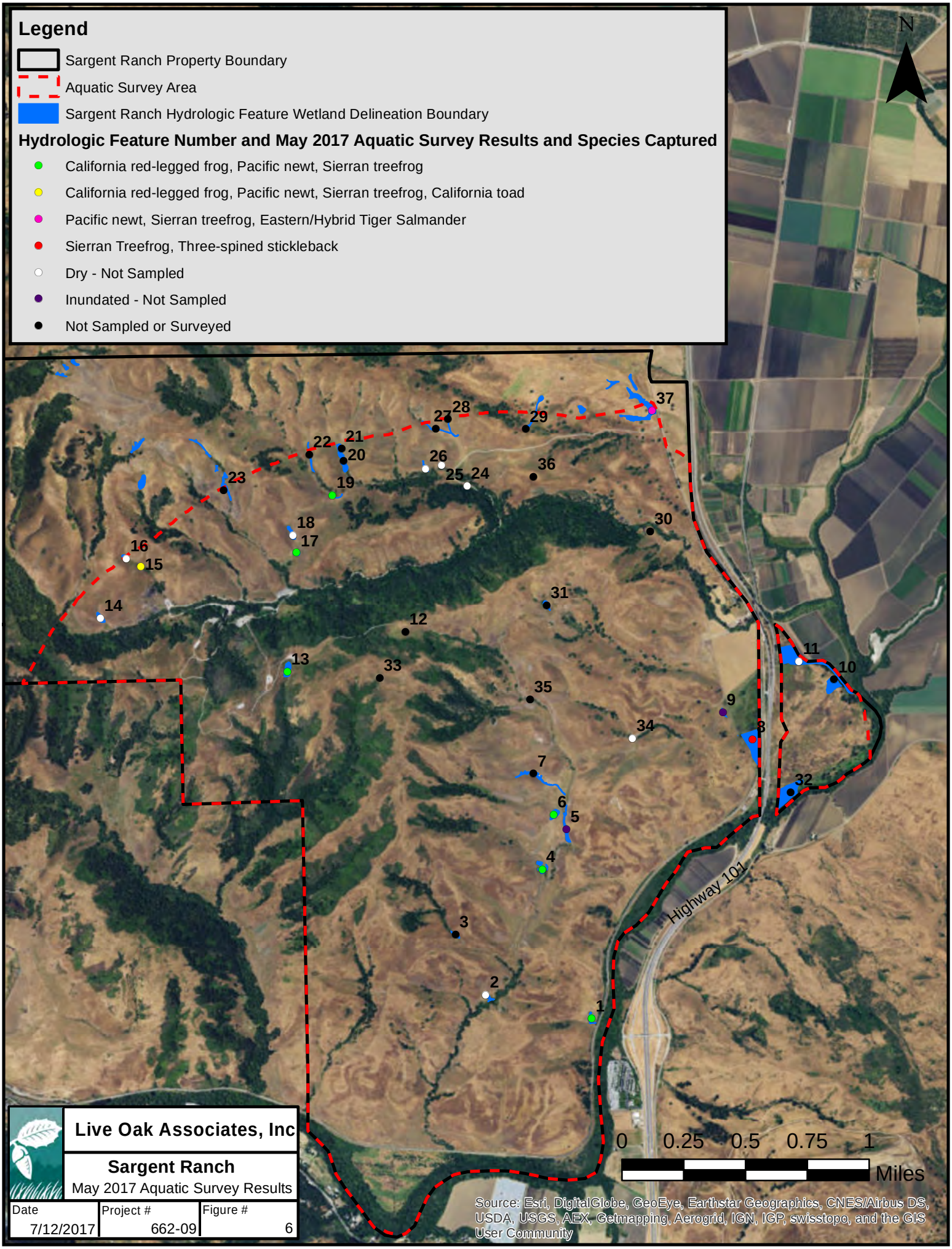
Eleven other hydrologic features were surveyed but not sampled. Nine of these did not hold any or enough water. One of the eleven features was along a creek that had been flowing approximately two weeks prior to the May 2017 surveys and was recently dammed, so it was determined that it was unlikely to hold CTS. The last of the eleven features was an inundated cattle trough and no vertebrate species were observed from above the surface, so it was also not sampled.

Table 1: May 2017 Aquatic Survey Results of Hydrologic Features Surveyed at the Sargent Ranch Property																
Hydrologic Feature Data								Vertebrate Species Captured						Other Information Collected	
Num.	Date Surveyed	Type	Width (Feet)	Length (Feet)	Depth (Feet)	Turbidity Notes	Aquatic Veg Notes	California red-legged frog	Pacific newt	Sierran treefrog	California tiger salamander	California Toad	Bullfrogs or Fish?	Invertebrate Species Captured	Other Survey Notes
1	05/21/17	Cattle pond	50	90	3	100 % turbid, ~1" of visibility	20% vegetated, surface & subsurface.	1 tadpole	Hundreds of metamorphs	Tadpoles, adults	None	None	None	Water boatmen, backswimmers, clams, leeches.	Method: Seine & Dipnet. Very cold temperatures under heavily vegetated areas.
2	05/21/17	"Hoof/ Hock" Pond	0.25	0.25	1	100 % turbid	Algae	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Did not survey. Water only pooled in cattle hoof prints.
4	05/21/17	Cattle pond	60	120	3-4	Turbid, can only see a few inches	Surface & subsurface, cattails, grasses, very heavily vegetated.	~20-30 tadpoles, 1 metamorph	4 adults, hundreds of larvae	Hundreds of tadpoles and metamorphs	None	None	None	Water boatmen, backswimmers, dragonfly larva, clams, snails, giant water bug (Toe-biter).	Method: Dipnet; too vegetated to seine.
5	05/21/17	Cattle pond - dammed section of Sargent Creek	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Did not survey. Two weeks ago this was a flowing creek and pooling occurred only recently. Unlikely to have CTS.

Table 1: May 2017 Aquatic Survey Results of Hydrologic Features Surveyed at the Sargent Ranch Property																
Hydrologic Feature Data								Vertebrate Species Captured						Other Information Collected	
Num.	Date Surveyed	Type	Width (Feet)	Length (Feet)	Depth (Feet)	Turbidity Notes	Aquatic Veg Notes	California red-legged frog	Pacific newt	Sierran treefrog	California tiger salamander	California Toad	Bullfrogs or Fish?	Invertebrate Species Captured	Other Survey Notes
6	05/21/17	Cattle pond	42	240	4-5	100 % turbid, ~1" of visibility.	Surface & subsurface, cattails.	~10 tadpoles	Adults, larvae, metamorphs	Tadpoles and metamorphs	None	None	None	Water boatmen, backswimmers, dragonfly larva, leeches.	Method: Seine. Cattle recently in pond (increased turbidity).
8	05/27/17	Wetland	400	800	1-1.5	Not very turbid, could see ~18" below surface.	Heavily vegetated with carex sp, scirpus sp, and cocklebur.	None	None	Tadpoles	None	None	Three-spined stickleback	Snails, waterboatman, backswimmers.	Method: Dipnet; too vegetated to Seine.
9	05/27/17	Cattle trough	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Did not survey.
11	05/27/17	No evidence of water.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Did not survey; all dried up.
13	05/27/17	Cattle pond	90	300	>4.5	1-1.5' visability	Portions heavily vegetated with carex, brass buttons, curly dock.	four large tadpoles	1 adult and hundreds of metamorphs	hundreds of tadpoles	None	None	None	Waterboatman, dragonfly larvae, toe biters.	Method: seine.
14	05/27/17	Drainage	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Did not survey; all dried up

Table 1: May 2017 Aquatic Survey Results of Hydrologic Features Surveyed at the Sargent Ranch Property																
Hydrologic Feature Data								Vertebrate Species Captured						Other Information Collected	
Num.	Date Surveyed	Type	Width (Feet)	Length (Feet)	Depth (Feet)	Turbidity Notes	Aquatic Veg Notes	California red-legged frog	Pacific newt	Sierran treefrog	California tiger salamander	California Toad	Bullfrogs or Fish?	Invertebrate Species Captured	Other Survey Notes
15	05/27/17	Cattle pond	100	117	>4.5	1-1.5' visability	Curley dock, cocklebur, sedge, milk thistle, brass buttons, subsurface veg.	adults jumping into pond	1 adult and hundreds of metamorphs	toadlets and tadpoles	None	hundreds of toadlets	None	Toe biters, snails, waterboatman, dragonfly larvae, water beetle.	Method: dipnet, too vegetated to seine.
16	05/27/17	Drainage	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Did not survey; all dried up.
17	05/21/17	Cattle pond	123	114	>4.5	Not very turbid, could see ~18" below surface.	Surface & subsurface.	4 adults, ~40 tadpoles	1 adult, hundreds of larvae	Hundreds of tadpoles	None	None	None	Water boatmen, backswimmers, snails, giant water bug (toe-biter).	Method: Seine. Surveyed ~15% of pond due to depth.
18	05/21/17	Drainage	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Did not survey; all dried up.
19	05/21/17	Cattle pond	50	110	4.5	Not very turbid, could see ~18" below surface.	None	1 adult, 5 tadpoles, 1 metamorph	1 adult, hundreds of larvae	Adults, Tadpoles	None	None	None	Water boatmen, dragonfly larva.	Method: Seine.

Table 1: May 2017 Aquatic Survey Results of Hydrologic Features Surveyed at the Sargent Ranch Property																
Hydrologic Feature Data								Vertebrate Species Captured						Other Information Collected	
Num.	Date Surveyed	Type	Width (Feet)	Length (Feet)	Depth (Feet)	Turbidity Notes	Aquatic Veg Notes	California red-legged frog	Pacific newt	Sierran treefrog	California tiger salamander	California Toad	Bullfrogs or Fish?	Invertebrate Species Captured	Other Survey Notes
24	05/27/17	Drainage	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Did not survey; all dried up.
25	05/27/17	Drainage	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Did not survey; all dried up.
26	05/27/17	Drainage	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Did not survey; all dried up.
34	05/21/17	Cattle pond by culvert	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Did not survey; almost completely dry. Historic CTS sighting.
37	05/27/17	Cattle Pond	100	225	3	100% turbid, ~1" of visability	Vegetated with carex and brass buttons.	None	2 adults and hundreds of metamorphs	hundreds of tadpoles	Hyrbid CTS/Eastern salamander	None	None	Toe biter, clams, backswimmers, midge larvae (chironomids).	Method: seine.



Live Oak Associates, Inc

Sargent Ranch

May 2017 Aquatic Survey Results

Date	Project #	Figure #
7/12/2017	662-09	6

4.0 CONCLUSION

The results of this survey indicate that California tiger salamander was not observed on the Sargent Ranch Property during the end of May 2017. The results of this survey are consistent with LOAs previous surveys conducted on the ranch in 2005-2015, but conflict with the results of 2000-2001 survey completed by PNWB.

Recommendations for recovery of the California tiger salamander include conducting significant studies on the ranch and vicinity to definitively determine if the area is suitable for CTS. The habitats of the site appear to be relatively good for CTS, so it is unclear why CTS were not observed during this or previous LOA surveys. If the site and vicinity are determined to be suitable, California tiger salamander populations should be translocated to the site or vicinity, and their survival monitored. The Eastern tiger salamanders or California/Eastern tiger salamander hybrids located in hydrologic feature #37 should be prevented from accessing areas where CTS are translocated to so additional cross breeding does not occur.

I certify that the information in this survey report and attached exhibits fully and accurately represent my work.

Geoffrey D. Cline
USFWS Permit #50510A-3
CDFW SCP#5901

5.0 REFERENCES

California Department of Fish and Wildlife. 2017. California Natural Diversity Database. *Rarefind 5.0*. The Resources Agency, Sacramento, CA. (July 1, 2017 data)

California Department of Fish and Wildlife and U.S. Fish and Wildlife Service 2003. Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander. October 2003.

ATTACHMENT A: AUTHORIZATION REQUEST AND EMAIL AUTHORIZATION

LIVE OAK ASSOCIATES, INC.
an Ecological Consulting Firm

May 17, 2017

Sarah Markegard
Recovery Branch
US Fish and Wildlife Service
2800 Cottage Way
Sacramento, CA 95825

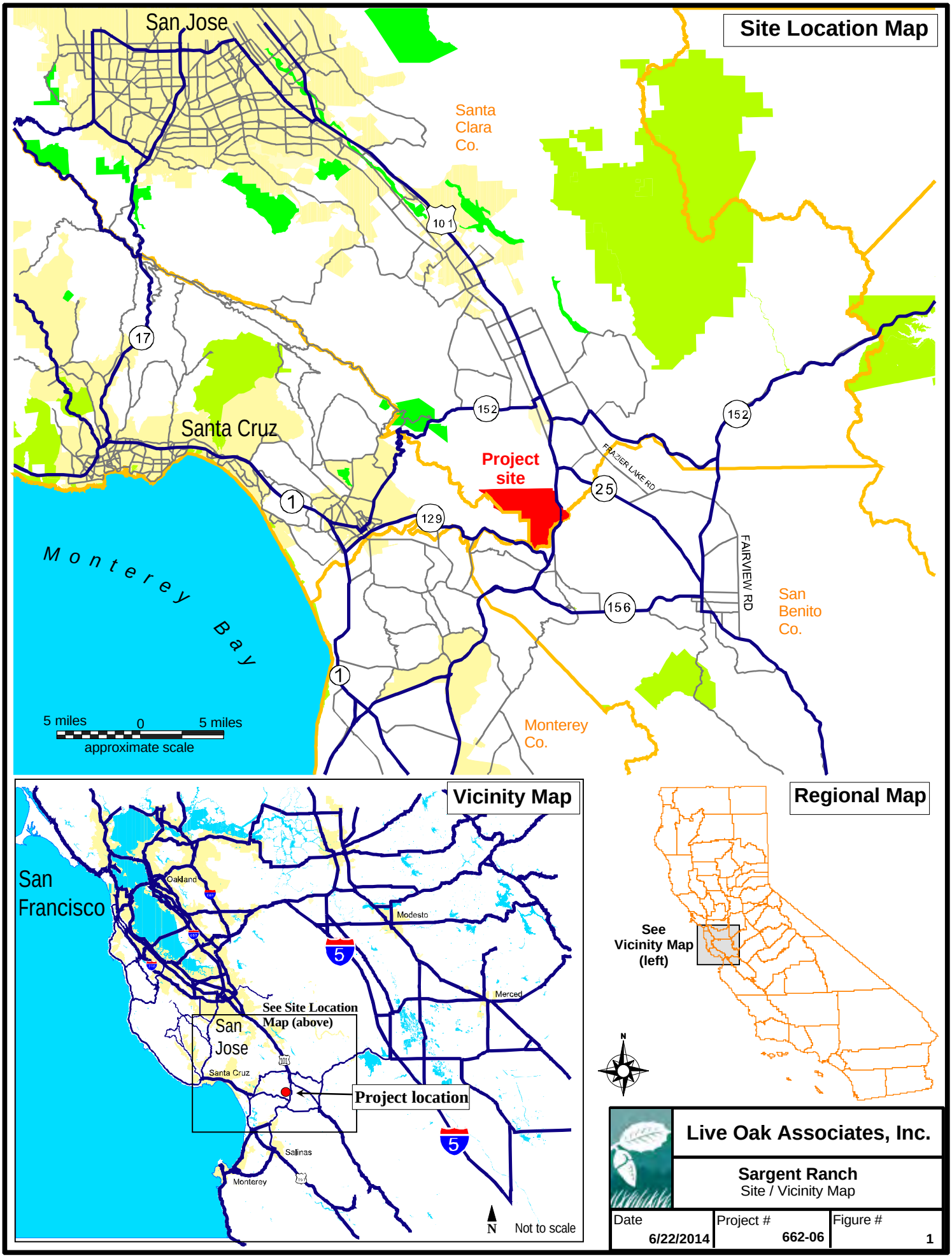
RE: Site Assessment and Authorization Request to Complete Non-protocol Aquatic Larval Sampling for California Tiger Salamander within a portion of the approximately 5,300-acre Sargent Ranch Property, Santa Clara County, California

Dear Ms. Markegard,

Live Oak Associates, Inc. (LOA) has prepared the following site assessment and authorization request to conduct non-protocol-level aquatic larval sampling surveys for California tiger salamander (CTS) (*Ambystoma californiense*), on a portion of the approximately 5,300-acre Sargent Ranch property. The area to be surveyed includes an approximately 400-acre proposed Sargent Quarry Conservation Area, and a 1.24 mile buffer from the Conservation Area, within the Ranch Property. This area also includes the proposed Sargent Ranch Quarry project site. Sargent Ranch is located immediately west of Highway 101, approximately one mile south of its interchange with Highway 25, to the south of the City of Gilroy, in unincorporated Santa Clara County, California (Figure 1). The site is bound to the east by Highway 101; to the south by the Pajaro River; and to the west and north by privately-owned rangeland. The remainder of the site occurs immediately east of Highway 101. This latter portion of the site is bound to the west by Highway 101; to the south by the Pajaro River; and to the east and north by agricultural crop lands.

Sargent Ranch can be found on the Chittenden USGS 7.5 minute topographic quadrangle, at the intersection of Townships 11 and 12 South, and Ranges 3 and 4 East (Figure 2) on gently to steeply rolling foothills on the east side and at the southernmost extreme of the Santa Cruz Range. Elevations of the site range from a low of approximately 135 feet NGVD (National Geodetic Vertical Datum) at its southwest corner to a high of just over 1,000 feet NGVD on the highest hills in the western central portion of the site. Three main watersheds occur on the site and include Sargent Creek, Tar Creek and Pescadero Creek, all of which are tributaries of the Pajaro River. The Pajaro River eventually drains into Monterey Bay southwest of the site. The site is currently used primarily for cattle grazing although oil wells also occur on the site near Tar Creek and portions of the site are used for oat hay production.

LOA biologist Geoffrey Cline (Recovery Permit #TE50510A-3 and SCP-5981) proposes to sample potential CTS breeding habitats on the Ranch occurring within the 400-acre Sargent Quarry Conservation area and within dispersal distance (i.e. within 1.24 miles) of the Conservation Area during May 2017, with the help of an assistant.


Site Location Map
San Jose
Santa Clara Co.
101
17
Santa Cruz
152
Project site
FRAZIER LAKE RD
25
129
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FAIRVIEW RD
156
San Benito Co.
Monterey Bay
5 miles
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5 miles
approximate scale
Monterey Co.
Vicinity Map
San Francisco
Oakland
Modesto
5
Merced
See Site Location Map (above)
San Jose
Santa Cruz
Project location
Salinas
Monterey
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Not to scale
Regional Map
See Vicinity Map (left)
N
Live Oak Associates, Inc.
Sargent Ranch
Site / Vicinity Map
Date
6/22/2014
Project #
662-06
Figure #
1

Project Boundary

Project Boundary

1 mile 0 1 mile

Approximate Scale

USGS Chittenden and Watsonville East 7-1/2 minute quadrangles

Live Oak Associates, Inc.		
Sargent Ranch U.S.G.S. Quadrangles		
Date 6/22/2014	Project # 662-06	Figure # 2

The purpose of the site assessment is to confirm that the proposed 400-acre Sargent Ranch Quarry Conservation Area supports estivation habitat for CTS, based on confirming presence of breeding CTS populations within dispersal distance of the Conservation Area on surrounding areas of the greater Sargent Ranch property. If deemed appropriate, the purpose of the authorization request is to notify you of our intent to complete aquatic surveys in May 2017 and request authorization to proceed with these surveys as soon as possible.

SITE ASSESSMENT

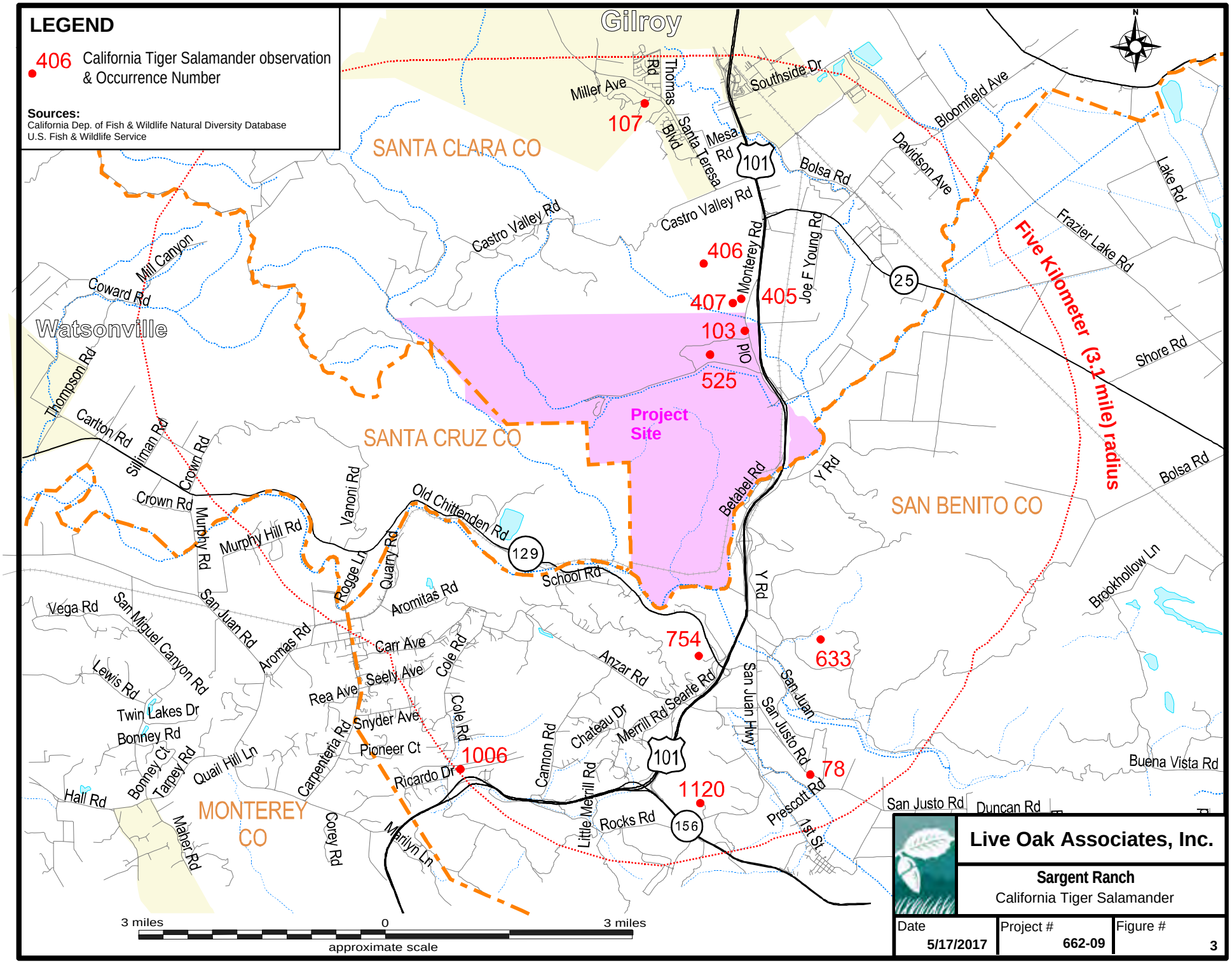
Element 1. Is the project site within the range of CTS? The survey area and Ranch are located within the range of the CTS Central California Distinct Population Segment (DPS). In addition, the survey area and Ranch are within the elevational range of this DPS, which is from near sea level in the Central Valley up to a maximum of 3,940 feet in the Coastal Range (USFWS 2014).

Element 2. What are the known localities of CTS within the project site and within 3.1 miles (5.0 kilometers) of the project boundaries? Eleven (11) California Natural Diversity Database (CNDDB) observations (CDFW 2017) occur within five kilometers of the site (Figure 3 and Attachment 1). Two of these CNDDB occurrences are on the greater Sargent Ranch property, to the north of Tar Creek. Pacific North Western Biological (PNWB) biologists confirmed the presence of breeding populations of CTS in three locations on the ranch during their 2000-2001 surveys. These three observations include the two CNDDB observations north of Tar Creek, as well as a third observation of larva in a seasonal wetland within a drainage channel south of Tar Creek which occurs within the proposed quarry project. This latter feature however was observed by PNWB to have dried up before the CTS larva could metamorphose. During several surveys conducted by LOA on the site during the period 2004 to the present, this wetland was only observed to hold water this past winter and was observed to be almost completely dry by the end of April 2017. The two CNDDB observations on the ranch were in a pond/seasonal wetland complex in the very northeastern corner of the site near Tick Creek and within a pond adjacent to Sycamore Creek. The former location northwest of Tick Creek was also confirmed to support introduced eastern tiger salamanders (*Ambystoma tigrinum*) and hybrids of the two species (confirmed via genetic analysis by UC Davis).

Figure 4 depicts CNDDB observations on the Ranch; results of the 2000-2001 PNWB surveys, three CTS and CRLF habitat assessment surveys, and a non-protocol CTS larval survey (conducted by LOA associate biologists Molly Goble and Mark Jennings during the period 2005 through 2015); and the habitats of the Ranch.

Element 3. What are the habitats within the project site and within 1.24 miles (2 kilometers) of the project boundaries?

The most prevalent habitat on the Ranch and within the survey area is California annual grassland habitat used as rangeland (Figure 4). Other habitats present include oak woodlands, riparian woodlands, chaparral, agricultural areas, and hydrologic features including ephemeral, intermittent and perennial drainages. Most areas within a 1.24 mile radius of the proposed Conservation Area (i.e. survey area) occur on the greater Sargent Ranch property itself. Representative pictures of the Ranch can be found on Attachment 2.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SANTA CRUZ CO
SAN BENITO CO
MONTEREY CO
Watsonville
Project Site
Five Kilometer (3.1 mile) radius
107
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Miller Ave
Thomas Rd
Santa Teresa Blvd
Mesa Rd
Southside Dr
Bloomfield Ave
Davidson Ave
Bolsa Rd
Castro Valley Rd
Monterey Rd
Joe F Young Rd
Lake Rd
Frazier Lake Rd
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San Juan
San Justo Rd
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Buena Vista Rd
Lewis Rd
Twin Lakes Dr
Bonney Rd
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Tarpey Rd
Quail Hill Ln
Rea Ave
Seely Ave
Snyder Ave
Pioneer Ct
Ricardo Dr
Carpenteria Rd
Cannon Rd
Chateau Dr
Little Merrill Rd
Hall Rd
Maher Rd
Corey Rd
Marilyn Ln
Rocks Rd
Prescott Rd
4th St
San Justo Rd
Duncan Rd
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3 miles
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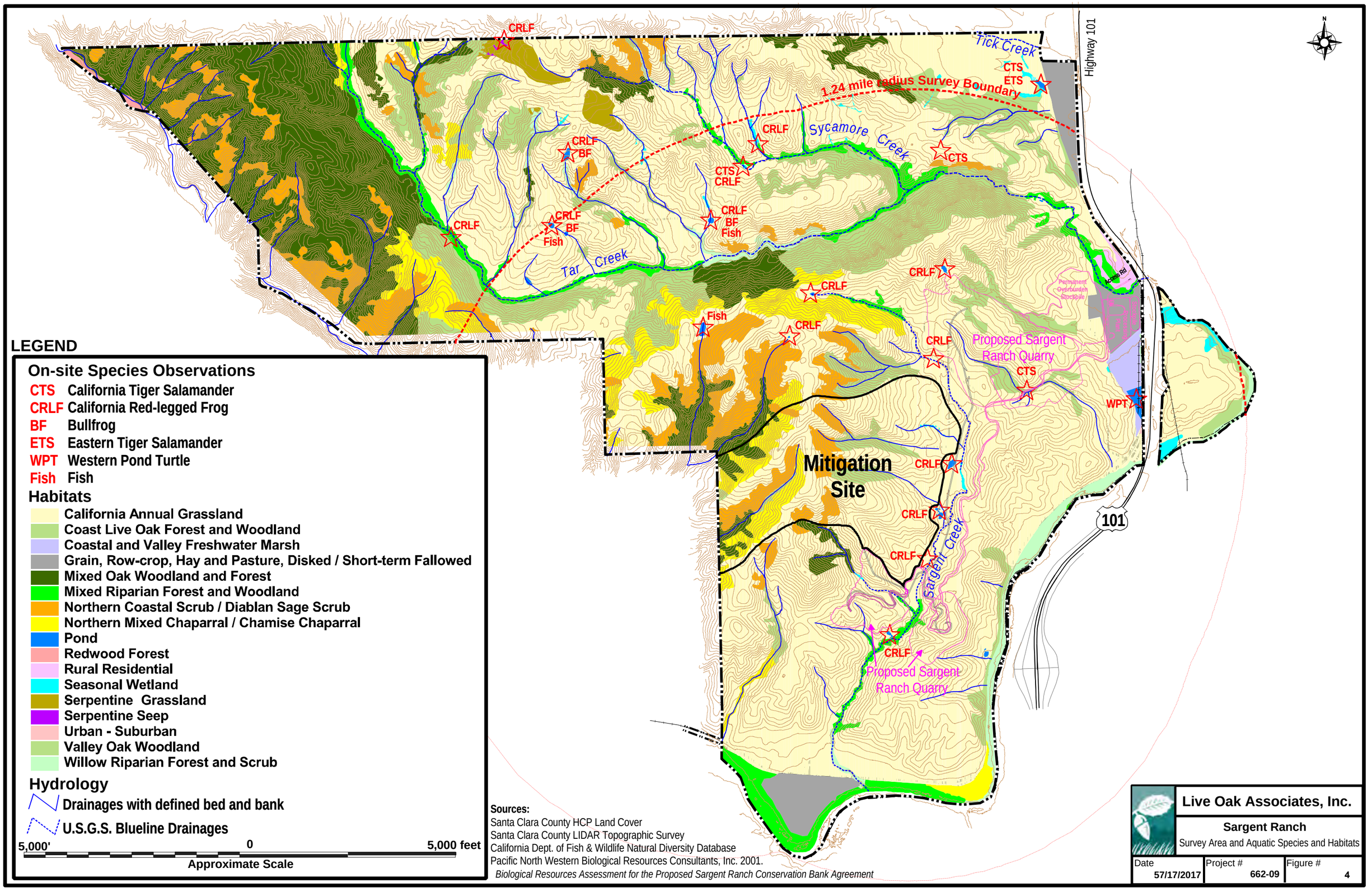
approximate scale
Live Oak Associates, Inc.
Sargent Ranch
California Tiger Salamander
Date 5/17/2017
Project # 662-09
Figure # 3



LEGEND

On-site Species Observations

- CTS California Tiger Salamander
- CRLF California Red-legged Frog
- BF Bullfrog
- ETS Eastern Tiger Salamander
- WPT Western Pond Turtle
- Fish Fish

Habitats

- California Annual Grassland
- Coast Live Oak Forest and Woodland
- Coastal and Valley Freshwater Marsh
- Grain, Row-crop, Hay and Pasture, Disked / Short-term Fallowed
- Mixed Oak Woodland and Forest
- Mixed Riparian Forest and Woodland
- Northern Coastal Scrub / Diablan Sage Scrub
- Northern Mixed Chaparral / Chamise Chaparral
- Pond
- Redwood Forest
- Rural Residential
- Seasonal Wetland
- Serpentine Grassland
- Serpentine Seep
- Urban - Suburban
- Valley Oak Woodland
- Willow Riparian Forest and Scrub

Hydrology

- Drainages with defined bed and bank
- U.S.G.S. Blueline Drainages

5,000' 0 5,000 feet

Approximate Scale

Sources:

Santa Clara County HCP Land Cover
Santa Clara County LIDAR Topographic Survey
California Dept. of Fish & Wildlife Natural Diversity Database
Pacific North Western Biological Resources Consultants, Inc. 2001.
Biological Resources Assessment for the Proposed Sargent Ranch Conservation Bank Agreement

Live Oak Associates, Inc.

Sargent Ranch

Survey Area and Aquatic Species and Habitats

Date	Project #	Figure #
57/17/2017	662-09	4

AUTHORIZATION REQUEST

I am requesting authorization to complete a non-protocol aquatic larval survey in May 2017 in a portion of the 5,300-acre Sargent Ranch property, which includes an approximately 400-acre proposed Sargent Ranch Quarry Conservation Area, and a 1.24 mile buffer area from the Conservation Area, within the Ranch property. Also includes in this survey area is the approximately 300-acre proposed Sargent Ranch Quarry project site,

The purpose of the site assessment is to confirm that the proposed 400-acre Sargent Ranch Quarry Conservation Area supports estivation habitat for CTS, based on confirming presence of breeding CTS populations within dispersal distance (1.24 miles) of the Conservation Area on surrounding areas of the greater Sargent Ranch property. If deemed appropriate, the purpose of the authorization request is to notify you of our intent to complete aquatic surveys in May 2017 and request authorization to proceed with these surveys as soon as possible.

Names and Permit Numbers of Personnel Conducting the Work. LOA biologist, Geoffrey D. Cline (Recovery Permit #50510A-3 and SCP-5981), will be leading the aquatic survey work. He will be assisted by LOA biologist Emily Moffitt (unpermitted biologist). The assistant biologist will conduct this work while within approximately 3 meters (9.8 feet) of Geoffrey Cline.

Aquatic Survey Methods. Prior to and after sampling, all equipment will be cleaned with either a 70% ethanol or bleach (0.5 to 1.0 cup of bleach to 1.0 gallons of water) solution.

Dipnets with 1/8" openings and a 4' X 10' seine with 1/8" openings will be used within the ponds. The two biologists will seine as much of the ponds as possible and will identify all vertebrate species observed. All species observed will be immediately released back into the pond.

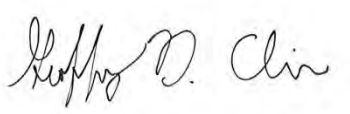
Numbers and Survey Dates. At this time, one survey day is proposed to occur on May 21, 2017. It is possible one additional day of surveying will be required, which would occur within approximately one week of May 21, 2017.

Aquatic Survey Coordinates. The aquatic surveys will occur in ponds located within 1.24 miles of the proposed Conservation Area and within the larger Ranch Property. Surveys will not occur outside of the Ranch Property. Coordinates for each pond surveyed will be recorded.

Conclusion

By authorizing these surveys, the results of these surveys may be utilized to determine presence of CTS. Thank you for expediting this request. Please contact me if you have any questions regarding this site assessment and authorization request. I can be reached via cell phone (530-448-7114) and via email (gcline@loainc.com).

Sincerely,



Geoffrey D. Cline
Senior Project Manager and Conservation Biologist/Ecologist

CC: Patricia Cole (USFWS), Justin Garcia (CDFW), Laura Paterson (CDFW), Craig Bailey (CDFW), Esther Burkett (CDFW), Verne Freeman (Freeman Associates), and Pam Peterson (Live Oak Associates)

References

California Department of Fish and Wildlife 2017. California Natural Diversity Database. *Rarefind 5.0*. The Resources Agency, Sacramento, CA. (accessed online 5/17/2017)

U.S. Fish and Wildlife Service 2014. California Tiger Salamander Central California Distinct Population Segment (*Ambystoma californiense*) 5-Year Review: Summary and Evaluation. October 21, 2014

ATTACHMENT 1: CNDDB OBSERVATIONS WITHIN THE PROJECT SITE AND 3.1 MILES (5 KILOMETERS) OF THE PROJECT BOUNDARY

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	11014	**EO Index:**	28393
Key Quad:	San Juan Bautista (3612175)	**Element Code:**	AAAAA01180
Occurrence Number:	78	**Occurrence Last Updated:**	2009-05-20

Scientific Name: *Ambystoma californiense*

Common Name: California tiger salamander

Listing Status: **Federal:** Threatened

State: Threatened

Rare Plant Rank:

Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed:	1973-02-11	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1973-02-11	**Occurrence Rank:**	None
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Possibly Extirpated		

Location:

SAN JUAN VALLEY. ALONG SAN JUSTO RD, ABOUT 1.0 MI SOUTHEAST OF SAN JUAN HWY JCT, 1 MI NORTH OF SAN JUAN BAUTISTA.

Detailed Location:

Ecological:

2007 AERIAL PHOTO SHOWS THAT THE ENTIRE SAN JUAN VALLEY AREA HAS BEEN CONVERTED TO AGRICULTURE.

Threats:

General:

OBS BY KENT SMITH (DFG) 11 FEB 1973. 18 MAR 1918 CAS RECORD FROM "VICINITY NORTH OF SAN JUAN".

PLSS:	T12S, R04E, Sec. 28, NW (M)	**Accuracy:**	1/5 mile	**Area (acres):**	0
UTM:	Zone-10 N4080724 E629868	**Latitude/Longitude:**	36.86353 / -121.54306	**Elevation (feet):**	170

County Summary:	**Quad Summary:**
San Benito	San Juan Bautista (3612175)

Sources:

BRO80U0001	BRODE, J. (CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE) - GEOGRAPHIC REFERENCE CARD CATALOG OF SPECIMENS AND FIELD NOTE RECORDS COMPILED BY JOHN BRODE (DFG). 1980-XX-XX
JEN94U0001	JENNINGS, M. & M. HAYES - COMPUTER PRINT-OUT OF ALL OF THE POINT DATA FOR TIGER SALAMANDER USED IN THE REPORT "REPTILE AND AMPHIBIAN SPECIES OF SPECIAL CONCERN IN CALIFORNIA" 1994-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	24660	**EO Index:**	6551
Key Quad:	Chittenden (3612185)	**Element Code:**	AAAAA01180
Occurrence Number:	103	**Occurrence Last Updated:**	2014-04-18

Scientific Name: *Ambystoma californiense*

Common Name: California tiger salamander

Listing Status: **Federal:** Threatened

State: Threatened

CNDDB Element Ranks: **Global:** G2G3

State: S2S3

Rare Plant Rank:

Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

General Habitat:

CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed:	1992-XX-XX	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1992-XX-XX	**Occurrence Rank:**	Fair
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

ABOUT 0.2 MILE WEST OF HWY 101, SOUTH OF TICK CREEK, 1.4 MILES SOUTH OF THE HWY 25 JUNCTION, 4 MILES SOUTH OF GILROY.

Detailed Location:

Ecological:

HABITAT CONSISTED OF A CATTLE POND SURROUNDED BY GRASSLAND AND VALLEY OAKS.

Threats:

THREATS INCLUDE GRAZING AND PREDATION BY NON-NATIVE PREDATORS (RED FOX, FERAL CATS).

General:

10 JUVENILES OBSERVED DURING A SURVEY CONDUCTED BETWEEN MAR-JUN 1992.

PLSS:	T11S, R04E, Sec. 29 (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-10 N4089363 E628595	**Latitude/Longitude:**	36.94156 / -121.55587	**Elevation (feet):**	175

County Summary:	**Quad Summary:**
Santa Clara	Chittenden (3612185)

Sources:

BLI92F0010 BLIZARD, R. & R. VONARB (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 1992-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 17098
EO Index: 12083
Key Quad: Chittenden (3612185)
Element Code: AAAAA01180
Occurrence Number: 107
Occurrence Last Updated: 2006-07-10

Scientific Name: *Ambystoma californiense*
Common Name: California tiger salamander

Listing Status: **Federal:** Threatened
State: Threatened
Rare Plant Rank:
Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3
State: S2S3

General Habitat:

CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed: 2006-06-26
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2006-06-26
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

JUST WEST OF THE JUNCTION OF MILLER AVENUE (AKA MESA ROAD) AND THE PRIVATE ROAD INTO FARMAN CANYON, SOUTH OF GILROY.

Detailed Location:

EAGLE RIDGE PROJECT (FORMERLY O'CONNELL RANCH POND "B"/O'CONNELL RANCH PROJECT SITE). THIS POND AND LAND TO THE NORTH AND EAST ARE DESIGNATED OPEN SPACE.

Ecological:

HABITAT CONSISTS OF A STOCK POND (150' X 70'); SPARSE EMERGENT VEGETATION AT NORTH END OF POND, NO SUBMERGENT VEGETATION. BREEDING HAS BEEN DOCUMENTED IN THIS POND. GROUND SQUIRREL BURROWS ARE COMMON IN THE NEARBY SERPENTINE GRASSLAND.

Threats:

THREATENED BY DEVELOPMENT; UPLAND MOVEMENTS FROM THE BREEDING POND WILL BECOME RESTRICTED TO THE SOUTH AND SW.

General:

EGGS/LARVAE OBS IN 1989-1991, 1993, 1995-1996, 1998-2004. 11 LARVAE OBS 17 APR 1989. UNK NUMBER OBS 12 APR 1990. RECENT EGGS (<1 WK-OLD) OBS 17 NOV 2004. 1 JUV IN BURROW 26 JUL 2005. 1 JUV & 1 AD CAP/RELEASED ON ADJ CONSERVATION SITE, 2006.

PLSS: T11S, R04E, Sec. 18, NW (M)
Accuracy: specific area
Area (acres): 18
UTM: Zone-10 N4093791 E626643
Latitude/Longitude: 36.98172 / -121.57703
Elevation (feet): 240

County Summary:	Quad Summary:
Santa Clara	Chittenden (3612185)

Sources:

BET05F0001	BETTELHEIM, M. (SYCAMORE ASSOCIATES LLC) - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2005-07-26
JEN06F0001	JENNINGS, M.R. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2006-06-14
JEN06F0002	JENNINGS, M.R. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2006-06-26
JEN94U0001	JENNINGS, M. & M. HAYES - COMPUTER PRINT-OUT OF ALL OF THE POINT DATA FOR TIGER SALAMANDER USED IN THE REPORT "REPTILE AND AMPHIBIAN SPECIES OF SPECIAL CONCERN IN CALIFORNIA" 1994-XX-XX
LSA89F0001	LARRY SEEMAN & ASSOCIATES, INC. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE (CALIFORNIA TIGER SALAMANDER) 1989-04-17
LSA89R0003	LSA ASSOCIATES, INC. - O'CONNELL RANCH, GILROY, CALIFORNIA TIGER SALAMANDER SURVEY. 1989-XX-XX
SPR04F0001	SPROUL, M.J. (LSA ASSOCIATES, INC.) - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2004-11-17

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	36054	**EO Index:**	31393
Key Quad:	Chittenden (3612185)	**Element Code:**	AAAAA01180
Occurrence Number:	405	**Occurrence Last Updated:**	2004-07-01

Scientific Name: *Ambystoma californiense*

Common Name: California tiger salamander

Listing Status: **Federal:** Threatened

State: Threatened

Rare Plant Rank:

Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed:	1998-02-20	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1998-02-20	**Occurrence Rank:**	Good
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

BLUESTONE QUARRY. JUST WEST OF OLD MONTEREY ROAD, 0.3 MILE SSW OF THE HWY 101 INTERSECTION, 4 MILES SOUTH OF GILROY.

Detailed Location:

Ecological:

QUARRY DEVELOPED BY 2002. HABITAT WAS A STOCK POND, SURROUNDED BY GRAZED GRASSLAND, WITH A FEW SCATTERED COAST LIVE OAKS. MANY CALIFORNIA GROUND SQUIRREL HOLES AROUND POND. CALIF RED-LEGGED FROG ALSO AT THIS SITE. HYBRID CTS POPULATION.

Threats:

1998: THREATS INCLUDE PRESENCE OF BULLFROGS AND RED-SWAMP CRAYFISH. ALSO, A PROPOSAL TO DEVELOP THE SITE INTO A QUARRY.

General:

3 LARVAE OBS 25 MAY 1997; 1 COLLECTED (MRJ #1274 & CAS #203266). 2 ADULTS COLLECTED ON 20 FEB 1998; 1 RELEASED & 1 DEPOSITED AT CAS (#MRJ 1354). 10 LARVAE COLLECTED 28 APR 2002 FOR GENETIC ANALYSIS. CTS FOUND TO BE HYBRIDS WITH A. TIGRINUM.

PLSS:	T11S, R04E, Sec. 29, SW (M)	**Accuracy:**	specific area	**Area (acres):**	3
UTM:	Zone-10 N4089986 E628523	**Latitude/Longitude:**	36.94718 / -121.55657	**Elevation (feet):**	170

County Summary:	**Quad Summary:**
Santa Clara	Chittenden (3612185)

Sources:

JEN97F0008	JENNINGS, M.R. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 1997-05-25
SHA03D0001	SHAFFER, B. (UNIVERSITY OF CALIFORNIA, DAVIS) - SHAPEFILE WITH LOCATION INFORMATION ON HYBRID CTS POPULATIONS. 2003-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 36398
EO Index: 31395
Key Quad: Chittenden (3612185)
Element Code: AAAAA01180
Occurrence Number: 406
Occurrence Last Updated: 2002-09-04

Scientific Name: *Ambystoma californiense*
Common Name: California tiger salamander

Listing Status: **Federal:** Threatened
State: Threatened
Rare Plant Rank:
Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3
State: S2S3

General Habitat:

CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed: 1997-05-25
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1997-05-25
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

1.25 MILES SSW OF THE INTERSECTION OF CASTRO VALLEY ROAD AND HWY 101, 3 MILES SOUTH OF GILROY.

Detailed Location:

Ecological:

HABITAT CONSISTS OF GRAZED GRASSLAND, WITH COAST LIVE OAKS. A FEW CALIFORNIA GROUND SQUIRREL BURROWS FOUND NEAR THE POND. CLAM SHRIMP ABUNDANT IN THE POND.

Threats:

General:

4 LARVAE OBSERVED ON 25 MAY 1997; 1 LARVA COLLECTED (MRJ #1276) AND DEPOSITED AT CAS (CAS #203268).

PLSS: T11S, R04E, Sec. 30, NE (M)
Accuracy: specific area
Area (acres): 2
UTM: Zone-10 N4090672 E627787
Latitude/Longitude: 36.95346 / -121.56472
Elevation (feet): 280

County Summary:	Quad Summary:
Santa Clara	Chittenden (3612185)

Sources:

CAS01S0002	CALIFORNIA ACADEMY OF SCIENCES - 1990-2000 CAS HERPETOLOGY HOLDINGS (INCLUDES STANFORD UNIVERSITY COLLECTIONS) FOR AMBYSTOMA CALIFORNIENSE 2001-02-14
JEN97F0007	JENNINGS, M.R. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 1997-05-25

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 36399
EO Index: 31396
Key Quad: Chittenden (3612185)
Element Code: AAAAA01180
Occurrence Number: 407
Occurrence Last Updated: 2002-09-04

Scientific Name: *Ambystoma californiense*
Common Name: California tiger salamander

Listing Status: **Federal:** Threatened
State: Threatened
Rare Plant Rank:
Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3
State: S2S3

General Habitat:

CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed: 1997-05-25
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1997-05-25
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

0.2 MILE WEST OF OLD MONTEREY RD, 0.4 MILE SSW OF INTERSECTION OF OLD MONTEREY RD & HWY 101, 3.6 MILES SOUTH OF GILROY.

Detailed Location:

Ecological:

HABITAT CONSISTS OF A POND, PARTLY SHADED BY COAST LIVE OAK. SURROUNDING AREA CONSISTS OF AN OLD FIELD (PLOWED IN THE PAST), WHICH IS NOW MAINLY VEGETATED BY GRASSES AND MUSTARD (GRAZED). CLAM SHRIMP ABUNDANT IN POND.

Threats:

THREATS INCLUDE A PROPOSAL TO DEVELOP AN AREA TO THE NORTH INTO A ROCK QUARRY.

General:

1 LARVA COLLECTED (MRJ #1284) ON 25 MAY 1997 AND DEPOSITED AT CAS (CAS #203269).

PLSS: T11S, R04E, Sec. 29 (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-10 N4089893 E628366
Latitude/Longitude: 36.94636 / -121.55834
Elevation (feet): 175

County Summary:	Quad Summary:
Santa Clara	Chittenden (3612185)

Sources:

CAS01S0002	CALIFORNIA ACADEMY OF SCIENCES - 1990-2000 CAS HERPETOLOGY HOLDINGS (INCLUDES STANFORD UNIVERSITY COLLECTIONS) FOR AMBYSTOMA CALIFORNIENSE 2001-02-14
JEN97F0009	JENNINGS, M.R. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 1997-05-25

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 45578
Key Quad: Chittenden (3612185)
Occurrence Number: 525

EO Index: 45578
Element Code: AAAAA01180
Occurrence Last Updated: 2001-08-14

Scientific Name: *Ambystoma californiense*
Common Name: California tiger salamander

Listing Status: **Federal:** Threatened
*** SENSITIVE *** **State:** Threatened
CNDDB Element Ranks: **Global:** G2G3
State: S2S3

Rare Plant Rank:
Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

General Habitat:

CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed: 2000-01-11
Last Survey Date: 2000-01-11
Owner/Manager:
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Fair
Trend: Unknown

Location:

SENSITIVE LOCATION INFORMATION SUPPRESSED.

Detailed Location:

PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

HABITAT CONSISTED OF A LARGE PERENNIAL RESERVOIR WITHIN A SEASONAL DRAINAGE SWALE; SURROUNDED BY GRAZED NON-NATIVE GRASSLAND AND OAK WOODLAND AT THE BASE OF THE FOOTHILLS OF THE SANTA CRUZ MOUNTAINS.

Threats:

THREATENED BY OVER-GRAZING, NON-NATIVE PREDATORS (BASS, BLUEGILLS), AND ENCROACHING URBAN DEVELOPMENT FROM GILROY.

General:

PLSS:
UTM:
Accuracy: 80 meters
Latitude/Longitude:
Area (acres): 0
Elevation (feet): 281

County Summary:	Quad Summary:
Santa Clara	Chittenden (3612185)

Sources:

MOR00F0007 MORI, B. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2000-01-11

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	46635	**EO Index:**	46635
Key Quad:	Chittenden (3612185)	**Element Code:**	AAAAA01180
Occurrence Number:	633	**Occurrence Last Updated:**	2001-11-28

Scientific Name: *Ambystoma californiense*

Common Name: California tiger salamander

Listing Status: **Federal:** Threatened

State: Threatened

CNDDB Element Ranks: **Global:** G2G3

State: S2S3

Rare Plant Rank:

Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

General Habitat:

CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed:	1993-XX-XX	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1993-XX-XX	**Occurrence Rank:**	Unknown
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

ABOUT 1 MILE EAST OF THE JUNCTION OF HWY 101 AND THE SAN BENITO RIVER. EAST OF THE SAN JUAN VALLEY.

Detailed Location:

Ecological:

Threats:

General:

SURVEY DONE BY BIOSEARCH BUT REPORTED BY LSA. UNKNOWN NUMBER OF LARVAE OBSERVED IN 1993.

PLSS:	T12S, R04E, Sec. 16, SW (M)	**Accuracy:**	2/5 mile	**Area (acres):**	0
UTM:	Zone-10 N4083359 E630069	**Latitude/Longitude:**	36.88725 / -121.54035	**Elevation (feet):**	300

County Summary:	**Quad Summary:**
San Benito	Chittenden (3612185)

Sources:

LSA94U0001 LSA ASSOCIATES, INC. - LETTER FROM MALCOLM SPROUL, PRINCIPAL, LSA ASSOCIATES ON RESULTS OF TIGER SALAMANDER SURVEYS IN 1993 & 1994. 1994-12-12

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 53674
EO Index: 53674
Key Quad: Chittenden (3612185)
Element Code: AAAAA01180
Occurrence Number: 754
Occurrence Last Updated: 2003-12-22

Scientific Name: *Ambystoma californiense*
Common Name: California tiger salamander

Listing Status: **Federal:** Threatened
State: Threatened
Rare Plant Rank:
Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3
State: S2S3

General Habitat:

CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed: 2003-05-02
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2003-05-02
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

0.3 MILE NW OF THE INTERSECTION OF SEARLE ROAD AND HIGHWAY 129, WEST OF SAN JUAN VALLEY.

Detailed Location:

Ecological:

HABITAT CONSISTS OF A STOCK POND SURROUNDED BY GRAZED ANNUAL GRASSLAND AND ROW CROPS.

Threats:

THREATENED BY POSSIBLE EXPANSION OF ROW CROPS AND DEVELOPMENT.

General:

21 JUVENILES OBSERVED ON 2 MAY 2003.

PLSS: T12S, R04E, Sec. 18, SE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-10 N4083034 E627700
Latitude/Longitude: 36.88464 / -121.56698
Elevation (feet): 175

County Summary:	Quad Summary:
San Benito	Chittenden (3612185)

Sources:

FIT03F0015 FITZPATRICK, B.M. (UNIVERSITY OF CALIFORNIA, DAVIS) - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2003-05-02

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	70880	**EO Index:**	71856
Key Quad:	San Juan Bautista (3612175)	**Element Code:**	AAAAA01180
Occurrence Number:	1006	**Occurrence Last Updated:**	2008-02-26

Scientific Name: *Ambystoma californiense*

Common Name: California tiger salamander

Listing Status: **Federal:** Threatened

State: Threatened

Rare Plant Rank:

Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed:	2007-04-03	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2007-04-03	**Occurrence Rank:**	Excellent
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

NORTHEAST OF THE JUNCTION OF COLE ROAD AND HIGHWAY 101/SR 156, 4.5 MILES WNW OF SAN JUAN BAUTISTA.

Detailed Location:

0.15 MILE EAST OF COLE ROAD, 0.3 MILE NORTH OF HIGHWAY 101 FROM COLE ROAD.

Ecological:

HABITAT IS A STOCK POND WITHIN ANNUAL GRASSLAND. POND MARGIN BARREN W/AQUATIC VEGETATION CLUMPED ALONG SHORELINE; NO EMERGENTS. WATER MODERATELY TURBID & UP TO 4 FT+ DEEP. SURROUNDING GRASSLANDS GRAZED, GROUND SQUIRRELS LOCALLY UNCOMMON.

Threats:

General:

7 LARVAE RANGING IN SIZE FROM 27-35 MM TL OBSERVED 3 APR 2007. BULLFROG ADULT, SUBADULT, AND 1 LARVA OBS; BUFO LARVAE LOCALLY FAIRLY COMMON. HYLA LARVAE UNCOMMON. CURR/SURROUNDING LAND USE:CATTLE RANCH, RANCHETTE, LIVESTOCK SUPPLY YARD.

PLSS:	T12S, R03E, Sec. 27, NE (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-10 N4080830 E623056	**Latitude/Longitude:**	36.86540 / -121.61944	**Elevation (feet):**	300

County Summary:	**Quad Summary:**
San Benito	San Juan Bautista (3612175)

Sources:

MOR07F0023 MORI, B. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2007-04-03

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	89490	**EO Index:**	90478
Key Quad:	San Juan Bautista (3612175)	**Element Code:**	AAAAA01180
Occurrence Number:	1120	**Occurrence Last Updated:**	2013-06-27

Scientific Name: *Ambystoma californiense*

Common Name: California tiger salamander

Listing Status: **Federal:** Threatened

State: Threatened

Rare Plant Rank:

Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed:	2013-05-07	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2013-05-07	**Occurrence Rank:**	Good
Owner/Manager:	PVT, UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

NE SIDE OF HWY 156, FROM ABOUT 0.7 TO 0.9 MILE SE OF THE HWY 101/HWY 156 JUNCTION; NW OF SAN JUAN BAUTISTA.

Detailed Location:

FEATURE REPRESENTS TWO POND SITES, ON EITHER SIDE OF AN UNNAMED ROAD CROSSING FROM HWY 156 TO SAN JUAN HWY.

Ecological:

NORTH-MOST POND SMALL, EPHEMERAL; ADULT BULLFROGS AND TREE FROG TADPOLES ALSO FOUND. BOTH PONDS WITHIN GRASSLAND GRAZED BY CATTLE. LARVAE CAUGHT IN N POND DISPLAYED MORPHOLOGICAL HYBRID CHARACTERISTICS.

Threats:

POSSIBLE THREATS FROM BULLFROGS, GROUND SQUIRREL EXTERMINATION, HYBRIDIZATION.

General:

ABOUT 100 EGGS WERE OBSERVED IN NORTH POND ON 10 JAN 2013. ABOUT 350 EGGS WERE OBSERVED IN S POND ON 11 JAN 2013. 30 LARVAE CAUGHT IN N POND ON 7 MAY 2013 WERE SUBMITTED FOR DNA & DISEASE TESTING; ESTIMATED POP AT LEAST 150.

PLSS:	T12S, R04E, Sec. 30, SE (M)	**Accuracy:**	specific area	**Area (acres):**	10
UTM:	Zone-10 N4080170 E627727	**Latitude/Longitude:**	36.85883 / -121.56716	**Elevation (feet):**	380

County Summary:	**Quad Summary:**
San Benito	San Juan Bautista (3612175)

Sources:

FIS13F0001	FISHER, N. (INSIGNIA ENVIRONMENTAL) - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2013-05-07
FLO13F0004	FLOHR, G. - FIELD SURVEY FORM FOR AMBYSTOMA CALIFORNIENSE 2013-01-11

ATTACHMENT 2: REPRESENTATIVE PHOTOGRAPHS OF SARGENT RANCH

Picture 1: East-facing hillsides and California annual grassland habitat of the Proposed Sargent Quarry Conservation Area looking west from across Sargent Valley.

Picture 2: One of the ponds in Sargent Valley located east of the Conservation Area that will be surveyed.

Gmail by Google

Geoffrey Cline <gcline@loainc.com>

Sargent Ranch Non-Protocol CTS Aqautic Larval Sampling Site Assessment and Authorization Request

Markegard, Sarah <sarah_markegard@fws.gov> Fri, May 19, 2017 at 2:52 PM
To: Geoff Cline <gcline@loainc.com>
Cc: "Blinn, Brenda@Wildlife" <Brenda.Blinn@wildlife.ca.gov>, "Bailey, Craig@Wildlife" <Craig.Bailey@wildlife.ca.gov>, "Garcia, Justin@Wildlife" <Justin.Garcia@wildlife.ca.gov>, "Patterson, Laura@Wildlife" <Laura.Patterson@wildlife.ca.gov>, "Burkett, Esther@Wildlife" <Esther.Burkett@wildlife.ca.gov>, Verne Freeman <verne.freeman@gmail.com>, Pamela Peterson <ppeterson@loainc.com>, Rick Hopkins <rhopkins@loainc.com>, Ryan Olah <ryan_olah@fws.gov>

Geoff Cline,

By this email message, you are authorized to conduct 2017 non-protocol level aquatic surveys for California tiger salamanders, per the conditions of recovery permit TE-50510A-3 and as specified in your email request dated May 17, 2017.

The surveys will be conducted within a portion of the approximately 5,300-acre Sargent Ranch Property, Santa Clara County, California. Sargent Ranch is located immediately west of Highway 101, approximately one mile south of

its interchange with Highway 25, to the south of the City of Gilroy.

Remember to carry a copy of your permit while doing the work, and to follow the terms and conditions of the permit including the reporting requirements. Also, please be sure all surveys are conducted in accordance with the USFWS October 2003 Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander, with the exceptions outlined in the authorization request.

In your report, please include which surveys were authorized, the names of all persons involved in the surveys, their recovery permit numbers, if applicable, and the date of this authorization, to help ensure that we correctly record the fulfillment of the reporting requirement under this authorization. Please let us know if the surveys are not performed as authorized, or if they are done by a different permittee under a separate authorization. This authorization does not include access to the property which must be arranged with the landowner or manager.

Electronic copies of the report(s) should be sent to Sarah Markegard, of our Listing and Recovery Branch and Ryan Olah, Coast-Bay Division Chief. We ask that you use UTM coordinates for all spatial data and that you use **Service Reference #: 2017-TA-2100** in future correspondence.

To ensure the accuracy and data integrity of your project, it is requested that you provide spatial information (boundaries, study areas, parcels, point locations, etc.) in the form of an ESRI shape file with projection, a GPS file with projection, or locations in an Excel spreadsheet with projection information. The preferred projection is UTM, Zone 10S, NAD83; the Sacramento Fish and Wildlife Office (SFWO) standard. FGDC compliant metadata must accompany each file. Please include any USFWS File Numbers associated with the data in your documentation. For additional information regarding metadata standards refer to: http://www.fgdc.gov. For more information regarding spatial data please contact: Cheryl L. Hickam, GIS Branch Chief, U.S. Fish and Wildlife Service, 2800 Cottage Way, Suite W-2605, Sacramento, Ca 95825-1846, office: 916-414-6708.

[Quoted text hidden]

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Sarah Markegard
Biologist, Listing and Recovery Division
USFWS, Sacramento Fish and Wildlife Office
2800 Cottage Way W-2605
Sacramento, CA 95825-1888
916-414-6492

ATTACHMENT B: REPRESENTATIVE PICTURES OF MOST VERTEBRATE SPECIES CAPTURED

Picture 1: Easter tiger salamander (*Ambystoma tigrinum*) and/or Eastern/California tiger salamander hybrid (*A. tigrinum* X *A. californiense*) from hydrologic feature #37.

Picture 2: California red-legged frog (*Rana draytonii*) tadpole (the larger one), Sierran treefrog (*Pseudacris sierra*) tadpoles (the three smaller ones), and a backswimmer (*Notonectidae*) at hydrologic feature #19.

Picture 3: Pacific newt (*Taricha sp.*) from hydrologic feature #17.

Picture 4: Three-spined stickleback (*Gasterosteus aculeatus*) from hydrologic feature #8.

ATTACHMENT C: PICTURES OF EACH HYDROLOGIC FEATURE SURVEYED

Picture 1: Hydrologic feature number one (1). California red-legged frog, Pacific newt, and Sierran treefrog were captured here in May 2017.

Picture 2: Hydrologic feature number four (4). California red-legged frog, Pacific newt, and Sierran treefrog were captured here in May 2017.

Picture 3: Hydrologic feature number six (6). California red-legged frog, Pacific newt, and Sierran treefrog were captured here in May 2017.

Picture 4: Hydrologic feature number eight (8). Sierran treefrog and three-spined stickleback were captured here in May 2017.

Picture 5: Hydrologic feature number 13. California red-legged frog, Pacific newt, and Sierran treefrog were captured here in May 2017.

Picture 6: Hydrologic feature number 15. California red-legged frog, Pacific newt, Sierran treefrog, and California toad were captured here in May 2017.

Picture 7: Hydrologic feature number 17. California red-legged frog, Pacific newt, and Sierran treefrog were captured here in May 2017.

Picture 8: Hydrologic feature number 19. California red-legged frog, Pacific newt, and Sierran treefrog were captured here in May 2017.

Picture 9: Hydrologic feature number 37. Pacific newt, Sierran treefrog, and Eastern and/or Eastern/California hybrid tiger salamanders were captured here in May 2017.

Appendix E.5

Responses to Peer Review Comments on the Sargent Ranch Quarry Biological Evaluation (2017)

ESA

LIVE OAK ASSOCIATES, INC.
an Ecological Consulting Firm

August 16, 2017

Verne Freeman
Freeman Associates
994 San Antonio Road
Palo Alto, CA 94303

RE: Responses to Peer Review Comments on the Sargent Ranch Quarry Biological Evaluation

Dear Verne:

Live Oak Associates, Inc. (LOA) has prepared this response to the peer review comments provided by H.T. Harvey in their memorandum to David J. Powers & Associates dated April 21, 2017 for the Sargent Ranch Quarry Biotic Evaluation prepared by LOA (LOA 2016).

We have numbered the comments from the peer review for ease of identification and response. A copy of the peer review with comments numbered is attached. Where changes to the BE were deemed necessary in response to peer review comments, we have made the edits in tracked changes.

In addition to addressing peer review comments, we have made other revisions to the BE in tracked changes as a result of new information since the BE was prepared. This new information includes, but is not limited to, observations of woodrat nests in the Tar Creek riparian area, a change in legal status for the foothill yellow-legged frog, the preparation of a formal wetland delineation and subsequent verification site visit with the U.S. Army Corps of Engineers (USACE), a non-protocol level CTS and CRLF larval survey conducted in spring 2017, and the addition of geotechnical setback areas, the latter which resulted in potential new impacts and new mitigation requirements for CRLF breeding habitat and jurisdictional waters. These revisions are discussed further below.

Comment 1.

1a. Edit made.

1b. Edit made and geotechnical setbacks have been added to all figures.

1c. Edit made. Original project description provided to LOA did initially say west side and we have corrected that to east side.

1d. We believe the berm is the stockpile located to the east of the processing plant.

1e. Edit made.

Comment 2.

2a. Our delineation survey was conducted in early October 2016 after five years of drought conditions in the area, and at that time, the delineation accurately depicted existing conditions on the site. For instance, the drainage channel that HTH mentions in their peer review, which we refer to as a ravine, at that time showed no indications of hydrology such as an Ordinary High Water mark. The bottom of this feature supported only sparse upland vegetation, was mainly barren, and was highly degraded by cattle using the feature as a trail. These observations were consistent with observations of this feature in prior survey efforts over the past several years including a prior delineation, various reconnaissance habitat assessments, and rare plants surveys.

A verification site visit was conducted with Greg Brown from the U.S. Army Corps of Engineers (USACE) on April 4, 2017 after an obviously wet winter and spring. The feature in question was visited and Mr. Brown and LOA agreed that based on changes since the delineation field survey was conducted, portions of this feature now exhibited an Ordinary High Water mark. As such, we revised our waters of the U.S. map to include this feature as "Intermittent Drainage 4". The BE figures have also been updated with this feature.

With regard to the "erosional gully" features, they were determined as such during LOA's 2016 wetland delineation survey due to an absence of an Ordinary High Water Mark. Mr. Brown agreed with LOA during the verification site visit that the majority of these features were not jurisdictional and were indeed erosional features. An exception was a very short reach of one such gully that is tributary to Intermittent Channel 3 at the point where these reaches join. Again, due to a wet winter/spring, this small reach of the gully did exhibit an Ordinary High Water mark at the time of the verification site visit. This reach of this feature was added to the waters map as "Intermittent Channel 3c" as well as added to the BE figures.

It should also be noted that while LOA believes that Intermittent Channels 3 and 4 are isolated, in discussion with our client, we have decided to not pursue them as non-jurisdictional isolated features with the USACE due to the added time for the USACE to submit to EPA prior to issuing a Jurisdictional Determination.

Associated updates have been made to the text of the BE report as well as to the BE figures.

2b. The area where the bridge will be constructed is currently an at-grade crossing, and for the most part, this area is barren of all vegetation, although willow riparian does occur on either side of the at-grade crossing and potentially a small amount of this habitat may be impacted by the bridge crossing. It should be noted that detailed bridge plans have not yet been prepared, although we understand through personal communication with our client that the bridge will be constructed as an arch culvert that retains the natural bed of the creek and that footings will be located outside the wetted channel. We have added additional information to the BE to address the crossing and potential impacts to riparian habitat.

2c. As discussed above, a verification site visit was conducted with Greg Brown in April 2017. He agreed with LOA that there were no features in this area meeting the definition of jurisdictional wetlands or tributary waters. Our revised figures accurately depict results of the verification site visit.

2d. We disagree. The habitat is properly defined as coast live oak woodland as it is nearly completely dominated by coast live oaks. This species has no wetland indicator status and occurs in upland habitats and also sometimes in transitional habitats between riparian and upland habitats. The intermittent drainages in question do not support enough hydrology for the development of a true riparian canopy.

2e. We agree and have made this edit.

2f. We have described the Tar Creek riparian corridor. The location of the access road crossing is currently almost devoid of vegetation as it is an "at grade" crossing currently. The bridge, once designed, potentially could impact a small amount of willow riparian habitat and this is discussed in the impact section.

Comment 3. We agree with HTH but believe the discussion of wildlife corridors within the project area and its vicinity include sufficient detail in the BE where the area is already described as an important area for wildlife movement. However, this said, we do agree with HTH that more information about possible constraints that the conveyor belt feature may have on wildlife is necessary. We have updated the BE with an additional description of this feature and discussion on potential impacts on wildlife movements.

Comment 4.

4a. A CNDDB for all special status plants on CRPR Lists 1, 2, 3 and 4 in a nine-quad search was conducted for preparation of the BE as indicated in the BE, and no results were returned for any plant species on CRPR List 2, 3 or 4, only for CRPR List 1A and 1B plant species. A new CNDDB query was conducted in June 2017 with similar results.

4b. As HTH is aware, data contained in maps of the VHP is coarse scale and requires field verification. Table 3 of our report already indicates whether habitat is present on the site for all species having potential to occur in the project region based on field data spanning almost two decades. We agree with HTH that San Joaquin kit fox would not be expected to occur on Sargent Ranch based on the currently known range for this species and the fact that there has not been a single observance of this species in the immediate project vicinity recorded in CNDDB. We have added SJKF to Table 3, but we don't believe this species warrants further discussion in the text of the report.

4c. We have added the grasshopper sparrow to Table 3 but we don't believe the species warrants its own life history section. No CNDDB occurrences of this species come up on the nine-quad query as of June 2017. I hope that HTH intends to submit a record of their observation of this species on the ranch to CNDDB. There are currently only 22 CNDDB occurrences reported in the entire state for this species, with the closest observance being in Alameda County to the north and San Luis Obispo County to the south.

4d. We have added yellow warbler to Table 3 but we don't believe the species warrants a life history section.

4e.We have added the Bryant's savannah sparrow to Table 3, however, we believe it is unlikely to forage or nest on the site as habitat would be marginal for this species, which prefers saltwater wetlands and adjacent moist habitats. We do not believe this species warrants a life history section.

4f. We agree and have added additional information regarding steelhead, as well as additional information on the proposed bridge design details for Tar Creek.

4g. PNWB biologists reported observing bank swallows on the site, however, additional details about the observation, such as time of year and exact location, were not provided.

4h. The least Bell's vireo is considered unlikely to occur on the site due primarily to the fact that it has not been observed in the project region since 1932, and secondarily, because areas on the quarry project site provide no habitat for this species based on almost two decades of field studies on the greater Sargent Ranch site. In the unlikely event that one were to breed on the site, mitigations already included in the BE requiring surveys for nesting birds should detect this species.

4i. Based on the project description evaluated in the BE, no nesting habitat for tri-colored blackbirds occurred within the project boundaries, i.e. no aquatic features supporting dense emergent vegetation, or with the probability of supporting dense emergent vegetation in the future, occurred on the site. However, one stock pond now occurs within the new geotechnical setback area adjacent to Phase 4 and one small seep occurs within the setback area of Phase 3, both of which provide a small amount of potential nesting habitat for this species, although we consider it unlikely to nest in these areas and this species was not detected during the June 2017 delineation survey, nor has it ever been observed during numerous surveys of the ranch property. Our report has been updated to reflect the change. Should tri-colored blackbirds nest within either of these features in the future, there are already mitigations in the BE that require nesting bird surveys that would detect this species.

4j. We have made this edit.

4k.The location occurring on the project site where PNWB observed CTS larva is a small wetland within an intermittent drainage channel where water pools behind a culvert crossing. As discussed in the BE, this feature was confirmed by both PNWB and LOA biologists to not provide a suitable hydrologic regime to support successful breeding of CTS even in wet winters. PNWB determined the wetland had dried up before larva could metamorphose, and LOA confirmed that even despite the past wet winter, this feature was completely dry by the April 4th site visit with USACE.

4l. Based on the project description evaluated in the BE, no suitable breeding habitat, such as stock ponds or in-stream ponds occurred on the site. This determination was based on almost two decades of surveys including wetland delineation surveys, CTS/CRLF habitat assessment surveys and four CTS/CRLF larval surveys. This conclusion is now backed up by the most recent larval surveys conducted by LOA in June 2017. However, one of the new geotechnical setback areas does now support a breeding pond for CRLF. We have revised the BE to include a discussion of potential impacts to CRLF breeding habitat and mitigations.

Comment 5. As already discussed above, a wetland delineation was prepared and submitted to USACE and a subsequent verification site visit was conducted on April 4, 2017 with Greg Brown. Two features which did not support an Ordinary High Water mark during the October delineation surveys, after five years of drought conditions, did at the April 4 site visit after a wet winter. This included lower reaches of Intermittent Drainage 4 (which was defined as a "ravine" in the BE) and a very short reach of a feature defined as an "erosional" feature in the delineation. Although LOA believes that Intermittent Drainages 3 and 4 are isolated features with flows that

dissipate and percolate into the ground within upland swales prior to reaching any water of the U.S., in discussion with our client, we have decided not to pursue isolated status for these features so as not to delay issuance of a JD.

Comment 6. We have updated this section with the SCVHCP Category 2 setbacks.

Comment 7.

7a. The BE already includes mitigations for impacts to streams and riparian habitats, and we have discussed the HCP setbacks. Obviously, the upper reaches of intermittent channels occurring within the footprint of the quarry will be completely lost, but except for crossings of Sargent and Tar Creeks, the project maintains HCP ascribed setbacks for these features.

7b. As already indicated above, based on four CTS and CRLF larval surveys conducted on the site, including a recent one in spring 2017, we now believe that the quarry site is unlikely to support even CTS estivation habitat. Please see the revised BE for additional information.

7c. Same as above 7b response.

7d. Revision made.

7e. Revision made.

7f. As discussed previously, the project site evaluated in the BE did not support breeding habitat for tri-colored blackbirds and we consider it a low likelihood that conditions for this species would change on the site, but in this unlikely event, mitigations already included in the BE requiring breeding bird surveys would detect this species. That said, however, the project boundaries have recently changed to include potential geotechnical setback areas, and a pond and seep that are present on the new setback areas do provide a small amount of potential breeding habitat for this species. The BE has been revised to reflect these changes in the project description/boundary and any new potential impacts.

7g. As already indicated, no CRPR 2, 3, or 4 species came up on CNDDB. Rare plant surveys are required for species having potential to occur on the site. Setting up criteria upfront to determine whether the project would have a significant impact on rare plant populations would be impossible since this would be very specific to the species detected, its legal status at the time, its ecology, and what is known about the extent of the population in the region at the time the species is detected. As such, we believe this should be up to a qualified botanist to determine as indicated, should any special status plant species be detected during the rare plant surveys. We have added language regarding timing of plant surveys, but otherwise we don't see the need to change the mitigation for special status plants.

7h. As indicated above, all report figures and tables, as necessary, have been updated based on the site verification visit with USACE. Mitigation measures are included for impacts to hydrologic features of the site and we believe they are sufficient to reduce these impacts to a less-than-significant level. That said, the resource agencies may impose additional mitigation requirements during the permitting process.

7i. We believe that the preservation of more than 45 acres of similar woodland habitat that provides potential breeding and roosting habitat for the pallid bat would compensate for the potential loss of such habitat as a result of the project.

7j. These species have been added to Table 3. We don't believe they warrant individual discussion in the impact section.

7k. No comment from HTH.

7l. We believe our discussion of wildlife corridors is adequate and we have added additional information with regard to the conveyor belt.

7m. No comment from HTH.

7n. We have already addressed this above.

7o. We have already addressed this above.

Comment 8. We have removed northern goshawk from the list of potentially occurring wildlife species.

Other Revisions to the BE

As a result of new information since we prepared the Biological Evaluation, additional revisions to our report have been made. These revisions are discussed below.

2017 CTS and CRLF Larval Surveys.

A non-protocol level larval survey was conducted on the site in spring 2017. We have updated the report with additional details regarding larval survey findings, including a new table and figure. Based on results from the 2017 survey, combined with findings from three previous surveys, LOA has now concluded that CTS are unlikely to occur on the project site. We have updated the report with these changes.

Foothill Yellow-legged Frog.

This species has been updated to candidate for threatened status under CESA in Table 3.

San Francisco Dusky-footed Woodrats.

Prior to 2017, no woodrats had ever been detected on the site; however, woodrat nests were observed within the riparian habitat of Tar Creek in close proximity to the proposed bridge crossing during surveys conducted by LOA ecologist Pamela Peterson in early 2017. As such, we have updated Table 3 with this new information. We have also added new mitigations for woodrats.

Formal Wetland Delineation and Verification Site Visit with USACE

We have updated the BE, including all figures, with findings from a formal wetland delineation conducted on the site in fall 2016 and a verification site visit with USACE in April 2017.

At the same time the delineation was conducted for waters of the U.S., we also conducted a delineation of jurisdictional waters of the state (CDFW and RWQCB) and have updated applicable sections of the report with this information.

Geotechnical Setback Areas.

In June 2017, LOA was made aware of the potential need to expand project boundaries to include geotechnical setback areas. On June 11 and 29, 2017, LOA ecologists surveyed the setback areas for sensitive resources. Sensitive resources found present on the setback areas included wetlands and other aquatic features that likely would be considered jurisdictional waters of the U.S. and state and a stock pond supporting California red-legged frog and California newt breeding. We have added additional text to the report with regard to the setback areas and have revised BE figures to depict setback boundaries.

This concludes our responses to peer review comments. If you have any questions or wish to discuss these responses, please feel free to contact me at the phone number below or Rick Hopkins at 408-281-5885.

Sincerely,

Pamela E. Peterson
Senior Project Manager
Plant and Wetland Ecologist

Appendix E.6
Biotic Peer Review-Revised (2017)

ESA

H.T. HARVEY & ASSOCIATES
Ecological Consultants

Memorandum

December 8, 2017 **Project #3909-02**

To: **Amie Ashton, David J. Powers & Associates**

From: **Ginger Bolen, H. T. Harvey & Associates**

Subject: **Sargent Ranch Quarry Biotic Evaluation Peer Review – Revised**

As requested, H. T. Harvey & Associates has conducted a peer review of the revised *Biotic Evaluation Sargent Ranch Quarry* prepared by Live Oak Associates, Inc. (LOA) and dated August 15, 2017 to facilitate California Environmental Quality Act (CEQA) assessment of the proposed Sargent Ranch Quarry project. H. T. Harvey & Associates previously conducted a peer review of a September 28, 2016 Biotic Evaluation and provided comments in a memo dated April 21, 2017. Subsequently, the project description was revised to include an additional 120 acres of geotechnical contingency setback areas, as well as an approximately 9-acre off-site wetland mitigation area located east of Highway 101. In addition to revising the Biotic Evaluation to reflect these changes, LOA prepared responses to the comments provided by our initial peer review and updated the Biotic Evaluation accordingly. We sincerely appreciate LOA's efforts to respond to our initial comments and update the Biotic Evaluation. In particular, obtaining U.S. Army Corps of Engineers approval of a wetland delineation for the project site resolves a number of our initial comments and strengthens the Biotic Evaluation.

The current memo provides a revised peer review based on information collected during preparation of the initial peer review; a brief field inspection of portions of the newly added geotechnical contingency setback areas and wetland mitigation area by senior plant/wetlands ecologist Kelly Hardwicke, Ph.D.; an August 16, 2017 letter from LOA providing detailed responses to our initial peer review comments; and the revised Biotic Evaluation.

We understand that the proposed project is not a covered project under the Santa Clara Valley Habitat Plan (VHP; ICF International 2012). However, we further understand that the proposed quarry has been designed to be consistent with VHP goals and conditions and that the County of Santa Clara would like the project's Environmental Impact Report (EIR), which David J. Powers & Associates is preparing, to discuss the comparability of proposed Best Management Practices (BMPs) and mitigation measures with those that would be required for covered projects under the VHP. Therefore, where appropriate, we have included comments addressing the proposed project's compatibility with the VHP. It should be noted, however, that for some species there is a fundamental difference in the way the VHP approaches mitigation compared to more

traditional approaches. For example, the VHP's conservation program for the federally threatened California red-legged frog (*Rana draytonii*) and state and federally threatened California tiger salamander (*Ambystoma californiense*), both of which occur on Sargent Ranch, focuses on habitat conservation. Impact fees paid by covered project applicants are used to acquire, enhance, and manage suitable habitat for these species. Although a number of avoidance and minimization measures for aquatic habitats are required by the VHP, the VHP does not require any species-specific measures, such as preconstruction surveys, construction monitoring, or relocation of individuals out of project areas. As a result, it is our opinion that some differences between the mitigation approach of non-covered projects such as the Sargent Ranch Quarry and VHP-covered projects will exist and are appropriate.

As a result of our review, we offer the following comments, in order of occurrence in the revised Biotic Evaluation. Chapter, section, and page numbers below refer to the numbering in the August 15, 2017 version Biotic Evaluation.

Chapter 1. Introduction

- Pg. 11 – LOA's response to comment 1c (as designated in its August 16, 2017 response to our initial peer review comments) indicates that the Biotic Evaluation has been revised to indicate that the conveyor belt will be constructed along the east side of the Sargent Valley, as depicted in Figure 2. However, paragraph four on page 11 still refers to the conveyor belt being located on the west side of the valley.

Chapter 2. Existing Conditions

Section 2.1 Biotic Habitats

- Pg. 29 and Figure 4 – In our April 21, 2017 peer review memo, we commented that the coast live oak woodland mapped by LOA along intermittent drainage 3 and the stockpile drainage would more appropriately be considered riparian woodland. In response, LOA indicated that "The habitat is properly defined as coast live oak woodland as it is nearly completely dominated by coast live oaks. This species has no wetland indicator status and occurs in upland habitats and also sometimes in transitional habitats between riparian and upland habitats. The intermittent drainages in question do not support enough hydrology for the development of a true riparian canopy." We disagree with LOA's conclusion. In both cases, much of the coast live oak woodland mapped by LOA is associated with the drainages, being rooted in their bed and banks. Therefore, based on our experience, the canopy of such trees would be considered riparian woodland under State Fish and Game Code Section 1600, and it would be considered mixed riparian woodland and forest under VHP conventions, which describe mixed riparian woodland and forest as follows: "They are found in and along the margins of the active channel on intermittent and perennial streams. Generally, no single species dominates the canopy, and composition varies with elevation, aspect, hydrology, and channel type…The major canopy species throughout the study area are California sycamore, valley oak, coast live oak, red willow, and California bay."

Section 2.2 Movement Corridors

- Pg. 34 – In our April 21, 2017 peer review memo, we commented that "The study area is located within an area of important habitat connectivity for wildlife, and it is our opinion that the report does not adequately describe wildlife movement on the project site within a regional context". In response, LOA stated "We agree with HTH but believe the discussion of wildlife corridors within the project area and its vicinity include sufficient detail in the BE where the area is already described as an important area for wildlife movement. However, this said, we do agree with HTH that more information about possible constraints that the conveyor belt feature may have on wildlife is necessary. We have updated the BE with an additional description of this feature and discussion on potential impacts on wildlife movements."

  We disagree with LOA's conclusion that the discussion of wildlife movement within the project area in the revised Biotic Evaluation adequately describes wildlife movement on the project site within a regional context for the purposes of California Environmental Quality Act (CEQA) analysis. Although the revised Biotic Evaluation contains one paragraph on how certain habitat features on the site may be used for wildlife movement, the regional importance of the project site for wildlife movement should be discussed, as Sargent Ranch is located within a very important area for wildlife movement. Therefore, we recommend that the following language be included in the EIR.

  > The Santa Cruz Mountains to the northwest, the Gabilan Range to the south, and the Diablo Range across the Santa Clara Valley to the east provide vast areas of natural habitat that support sizeable populations of common and special-status plant and animal species. Exchange of individuals and genes among the populations in these three ranges is important to the long-term maintenance of populations and genetic diversity in these ranges and in central California as a whole. Undeveloped habitats in southern Santa Clara County, including the project site, provide landscape linkages between the Santa Cruz Mountains and Diablo Range, and between these mountain ranges and the Gabilan Range. In fact, Sargent Ranch represents a very important area for wildlife movement, given the linkages that occur, and meet, on and near this property.
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  > Immediately west of the project site, the Santa Cruz Mountains narrow from north to south, ending at the Pajaro River Valley and State Route (SR) 129. South of SR 129 and the Pajaro River, the Gabilan Range begins. Although the Pajaro River and SR 129 (as well as low density development) both represent impediments to wildlife movement, larger, more mobile species can easily navigate these impediments, and there are ample opportunities for even smaller, less mobile wildlife to move across these impediments. Under existing conditions, larger animals can easily move between the two ranges in this area, and Thorne et al. (2002) considered this linkage very important for the movement of mountain lions. Also, there is sufficient suitable "core" habitat for many of the smaller, less mobile species that genetic exchange can occur over a series of generations. Because the Santa Cruz Mountains are constricted to such a

narrow area in the immediate vicinity of Sargent Ranch, maintaining the ability of animals to move through Sargent Ranch is very important to maintaining regional connectivity.

A second important landscape linkage, which is bisected by U.S. 101, lies between the Santa Cruz Mountains/Gabilan Range and the Diablo Range to the east. Unlike the Santa Cruz and Gabilan ranges, which are contiguous, a gap of approximately 6 miles occurs between the eastern foothills of the Santa Cruz Mountains immediately west of the study area and the western foothills of the Diablo Range. The Pajaro River and relatively natural habitats (e.g., fallow fields and ranchlands) are very important in maintaining this linkage. Aside from Coyote Valley far to the north, the Pajaro River area represents the best opportunity for movement of larger animals, or exchange of genes over generations for smaller, less mobile species, between the Diablo Range and the Santa Cruz Mountains. Highway 101 constrains east-west movement between the Pajaro River east of Highway 101 and areas west of Highway 101, but there are a number of culverts and other undercrossings that allow animals to move beneath the highway, and H. T. Harvey & Associates has documented these undercrossing locations and their use by wildlife (Caltrans 2011). Maintaining the ability of wildlife to easily move to and from these undercrossings is important.

A smaller-scale and more local, but still important area of potential wildlife movement is provided by the proximity of the southern Santa Cruz Mountains and the Lomerias Muertas (the hills east of U.S. 101 between the Pajaro and San Benito Rivers). The foothills of the Santa Cruz Mountains are separated from the Lomerias Muertas by the Pajaro River, a narrow strip of mostly agricultural land, U.S. 101, Betabel Road, and Y Road. From U.S. 101, the Lomerias Muertas stretch to the southeast. These hills provide potentially important secondary linkages between the Santa Cruz Mountains and the Gabilan Range, and between the Gabilan Range and the Diablo Range. As noted in the previous paragraph, maintaining the ability of animals to easily move to and from the Highway 101 undercrossings is important.

All three of the aforementioned landscape linkages are indicated as being important to wildlife movement by the VHP (see Figure 5-6 of the VHP [ICF International 2012]).

Section 2.3 Special-Status Plants and Animals

- Pg. 37 and Table 2 – In our April 21, 2017 peer review memo, we commented that all plants with a California Rare Plant Rank (CRPR) of 1A, 1B, 2, 3, or 4 should be addressed for occurrence within Table 2, not only those with a CRPR of 1A or 1B. In response, LOA stated "A CNDDB for all special status plants on CRPR Lists 1, 2, 3 and 4 in a nine-quad search was conducted for preparation of the BE as indicated in the BE, and no results were returned for any plant species on CRPR List 2, 3 or 4, only for CRPR List 1A and 1B plant species." The California Native Plant Society's (CNPS's) glossary of terms and field descriptions (available at: http://www.rareplants.cnps.org/glossary.html) states "quad data is not available for all List 3 and 4 plants. For those that do contain this data, it has not been quality controlled and is potentially incomplete, inaccurate, and/or out of date." Therefore, it is

our opinion that a nine-quad search should not be relied upon as the sole basis for the determination of whether CRPR 3 or 4 species potentially occur on the project site.

Based on a county-level search, as well as a nine-quadrangle search, of the CNPS's Online Inventory, we identified 40 CRPR 3 and 4 species as potentially occurring on the project site (see Table A below). We determined that 31 of the 40 species identified are absent from the project site for the reasons indicated in Table A. The remaining nine, indicated in boldface in Table A, could potentially be present on the project site.

Table A. Special-Status Plant Species Potentially Occurring on the Project Site

			Species Determined to be Absent?			
Common Name	**Scientific Name**	**CRPR**	**Extirpated from Project Vicinity**	**Outside Elevation Range**	**Suitable habitat Absent**	**Edaphic Requirements Absent**
bay buckwheat	*Eriogonum umbellatum* var. *bahiiforme*	4.2		X		X
Brewer's calandrinia	*Calandrinia breweri*	4.2			X	
Brewer's clarkia	*Clarkia breweri*	4.2		X		X
bristly leptosiphon	***Leptosiphon acicularis***	4.2				
California androsace	***Androsace elongata* ssp. *acuta***	4.2				
clay buckwheat	*Eriogonum argillosum*	4.3			X	X
clustered lady's-slipper	*Cypripedium fasciculatum*	4.2			X	X
coast iris	*Iris longipetala*	4.2			X	
cotula navarretia	***Navarretia cotulifolia***	4.2				
Delta woolly-marbles	*Psilocarphus brevissimus* var. *multiflorus*	4.2	X			
dusky-fruited malacothrix	*Malacothrix phaeocarpa*	4.3			X	
elongate copper moss	*Mielichhoferia elongata*	4.3				X
Gairdner's yampah	***Perideridia gairdneri* ssp. *gairdneri***	4.2				
Hickman's popcornflower	*Plagiobothrys chorisianus* var. *hickmanii*	4.2	X			
Howell's onion	*Allium howellii* var. *howellii*	4.3				X
Jepson's woolly sunflower	*Eriophyllum jepsonii*	4.3		X		X
large-flowered leptosiphon	*Leptosiphon grandiflorus*	4.2				X
Lewis' clarkia	*Clarkia lewisii*	4.3			X	
maple-leaved checkerbloom	*Sidalcea malachroides*	4.2				X

Common Name	Scientific Name	CRPR	Species Determined to be Absent?			
			Extirpated from Project Vicinity	Outside Elevation Range	Suitable habitat Absent	Edaphic Requirements Absent
Mexican mosquito fern	*Azolla microphylla*	4.2			X	
Michael's rein orchid	***Piperia michaelii***	4.2				
Monterey ceanothus	*Ceanothus rigidus*	4.2			X	
Mt. Diablo cottonweed	*Micropus amphibolus*	3.2				X
narrow-petaled rein orchid	*Piperia leptopetala*	4.3		X		
Oakland star-tulip	*Calochortus umbellatus*	4.2				X
phlox-leaf serpentine bedstraw	*Galium andrewsii* ssp. *gatense*	4.2				X
San Antonio Hills monardella	*Monardella antonina* ssp. *antonina*	3		X		
San Francisco wallflower	*Erysimum franciscanum*	4.2				X
Santa Clara red ribbons	***Clarkia concinna* ssp. *automixa***	4.3				
Santa Clara thorn-mint	*Acanthomintha lanceolata*	4.2				X
Satan's goldenbush	***Isocoma menziesii* var. *diabolica***	4.2				
serpentine leptosiphon	*Leptosiphon ambiguus*	4.2				X
small-leaved lomatium	*Lomatium parvifolium*	4.3				X
South Coast Range morning-glory	*Calystegia collina* ssp. *venusta*	4.3		X		X
spring lessingia	*Lessingia tenuis*	4.3		X		
stinkbells	***Fritillaria agrestis***	4.2				
sylvan microseris	*Microseris sylvatica*	4.2				X
Tracy's eriastrum	*Eriastrum tracyi*	3.2		X		
vernal barley	***Hordeum intercedens***	4.2				
woolly-headed lessingia	*Lessingia hololeuca*	3				X

- Pgs. 41-51, Table 3 – In the table header, this table is variably labeled Table 2 and Table 3. Also, it is our understanding that the County of Santa Clara would like the project's EIR to discuss the comparability of proposed project BMPs and mitigation measures with those that would be required for covered projects under the VHP. Therefore, although not required under CEQA, we recommend including statements in Table 3 indicating whether the VHP maps suitable habitat for VHP covered species on the proposed project site. Inclusion of this information would facilitate comparison of the proposed avoidance, minimization, and compensatory mitigation measures with those that would be required under the VHP.

The VHP maps suitable breeding habitat on the project site for the following VHP covered species: California red-legged frog (breeding, refugia, and dispersal), California tiger salamander (non-breeding habitat), western pond turtle (*Actinemys marmorata*) (primary and secondary habitat), foothill yellow-legged frog (*Rana boylii*) (primary habitat), burrowing owl (*Athene cunicularia*) (potential nesting/overwintering), least Bell's vireo (*Vireo bellii pusillus*) (primary habitat), tricolored blackbird (*Agelaius tricolor*) (primary and secondary habitat), and San Joaquin kit fox (*Vulpes macrotis*) (secondary habitat – low use).

- Pg. 45, Table 3 – In response to H. T. Harvey & Associates' comment, LOA revised Table 3 to indicate that steelhead are potentially present within Tar Creek on the project site. However, because the project description was revised to include an approximately 9-acre off-site wetland mitigation area along the Pajaro River, Table 3 should be further revised to include the species' known occurrence in the Pajaro River and the Pajaro's designation as critical habitat for this species (National Marine Fisheries Service 2000).

- Pg. 47, Table 3 – In our April 21, 2017 peer review memo, we recommended including a more detailed discussion of why the riparian habitat along Tar Creek within the project boundaries does not support nesting habitat for the least Bell's vireo. This recommendation was made based on the VHP mapping suitable breeding habitat for the species along Tar Creek within the project boundary, which would require a VHP-covered project to conduct a focused survey for suitable nesting habitat within 250 feet of the project boundaries, and if suitable breeding habitat were identified, implement avoidance and construction monitoring measures.

  In its response, LOA indicated that the least Bell's vireo is considered unlikely to occur on the site due primarily to the fact that it has not been observed in the project region since 1932, and secondarily, because areas on the quarry project site provide no habitat for this species based on almost two decades of field studies on the greater Sargent Ranch site. Although we concur with the conclusion that the least Bell's vireo is unlikely to occur on the project site, the VHP maps portions of the project site as potentially suitable habitat for the species, which indicates that the Habitat Agency considered it possible for the species to occur in the project area despite the lack of recent observations. In addition, a pair of least Bell's vireos attempted nesting less than 4 miles northeast of the site as recently as 1997 (Rottenborn 2007a). Therefore, it is our opinion that additional information regarding why the habitat on the site is not suitable for the species should be included in the EIR.

  We recommend the following information be added to Table 3 under the discussion of the species' potential occurrence in the project area:

  > Although the project site is located within habitat mapped as potentially suitable for the least Bell's vireo by the VHP, the mixed riparian forest and woodland habitat on the project site lacks the density in the lower strata and the vertical complexity of the riparian vegetation that typifies this species' habitat. Thus, the habitat within the project area is inconsistent with habitat in which this species has been recorded in northern California.

Further, the project description has been revised to include an approximately 9-acre off-site wetland mitigation area along the Pajaro River. Thus, the following information should be added to Table 3 under the discussion of the species' potential occurrence in the project area:

> The riparian woodland adjacent to the Pajaro River has the vertical complexity of the riparian vegetation that typifies this species' habitat .and is potentially suitable for the least Bell's vireo. The VHP maps this portions of the river as potentially suitable habitat for the species.

- Pg. 49, Table 3 – In response to H. T. Harvey & Associates' comment, LOA added the grasshopper sparrow (*Ammodramus savannarum*), a California species of special concern, to Table 3 and indicated that it has potential to occur on the project site. However, LOA indicated that the addition of a species account, as suggested by H. T. Harvey & Associates, was not warranted. Although CEQA guidelines do not require a species account for all potentially occurring species on a project site, LOA did provide species accounts for some potentially occurring species of special concern. Therefore, for consistency, we recommend including the following species account for the grasshopper sparrow.

  > *Life History and Ecology*. In California, the distribution of breeding grasshopper sparrows includes the Coast Ranges, the northern Central Valley, and areas west of the southeastern deserts (Lyon 2000, Unitt 2008). The grasshopper sparrow breeds in open, short grasslands with scattered clumps of shrubby vegetation, constructing domed ground nests with grasses in patches of dense vegetation (Vickery 1996, Sutter and Ritchison 2005, Unitt 2008). Prime breeding habitat features very large, unfragmented areas of grassland with patches of bare ground, and clumps of shrubby vegetation surrounded by denser grass cover for singing perches and nest sites (Vickery 1996, Lyon 2000, Sutter and Ritchison 2005). Grasshopper sparrows breed from mid-March to August in California, after which they migrate to wintering grounds that are presumed to be in Mexico and Central America (Vickery 1996, Unitt 2008).
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  > In Santa Clara County, breeding grasshopper sparrows occur in the foothills of the Santa Cruz Mountains, from Calaveras Reservoir southeast to the hills above Pacheco Creek, and in the southeast portion of the County where the hills drop down to the Pajaro River Valley (Heller 2007). The species may occur somewhat more widely during migration, but it is seldom seen in the South Bay outside the breeding season.
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  > *Occurrence on the Site*. The grasslands on the project site provide suitable nesting and foraging habitat for the grasshopper sparrow, and the species has been observed breeding on the greater Sargent Ranch property.

  LOA's response suggested that H. T. Harvey & Associates submit a CNDDB record documenting its observation of grasshopper sparrows at Sargent Ranch. In the late 1990s, H. T. Harvey wildlife ecologist Steve Rottenborn observed multiple pairs of grasshopper sparrows feeding young along the southeastern edge of Sargent Ranch, while he was within the adjacent railroad right-of-way. However, H. T. Harvey does not submit CNDDB records for species observed on private property without the appropriate authorization, and because Rottenborn was not on Sargent Ranch at the time, he did not submit a CNDDB record for this observation.

Finally, the text on "occurrence in the study area" in Table 3 should indicate that H. T. Harvey biologists have observed the species on the larger ranch property from an adjacent property to the **east**, not the north.

- Page 50, Table 3 – In response to H. T. Harvey & Associates' comment, LOA added the yellow warbler (*Setophaga petechia*), a California species of special concern, to Table 3 and indicated that it has potential to occur on the project site. However, LOA indicated that the addition of a species account, as suggested by H. T. Harvey & Associates, was not warranted. Although CEQA guidelines do not require a species account for all potentially occurring species on a project site, LOA did provide species accounts for some potentially occurring species of special concern. Therefore, for consistency, we recommend including the following species account for the yellow warbler.

  Life History and Ecology. In California, the yellow warbler occupies wooded riparian habitats along the coast, on both eastern and western slopes of the Sierra Nevada, and throughout the northern portion of the state (Heath 2008). This species prefers riparian corridors with an overstory of mature cottonwoods and sycamores, a midstory of box elder and willow, and a substantial shrub understory (Bousman 2007), particularly in areas with more open space adjacent to the riparian habitat. Yellow warblers construct open-cup nests in upright forks of shrubs or trees in dense willow thickets or other dense vegetation (Lowther et al. 1999).

  Yellow warblers are uncommon breeders in the County because of loss of riparian habitat, invasion by non-native plants, development along riparian corridors, and the abundance of the brown-headed cowbird (*Molothrus ater*) in the San Jose area. However, small numbers of yellow warblers still breed in remnant riparian areas within Santa Clara County (Bousman 2007). In the South County, the species has been recorded breeding in riparian habitat along Llagas, Uvas/Carnadero, and Pacheco Creeks, as well as the Pajaro River. Yellow warblers are an abundant migrant throughout the Valley during the spring and fall.

  Occurrence on the Site. Riparian habitats within and adjacent to the project site provide potentially suitable nesting and foraging habitat for the yellow warbler.

- Page 50, Table 3 – In response to H. T. Harvey & Associates' comment, LOA added the Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*) a California species of special concern, to Table 3. However, LOA indicated that it is unlikely to occur on the project site and stated that the species "prefers saltwater wetlands and adjacent moist habitats". We disagree with the conclusion that the species is unlikely to occur on the project site. This species breeds both in saline wetlands and in upland grasslands, including grasslands in the Santa Cruz Mountains well removed from coastal or San Francisco Bay marshes. Suitable breeding habitat for the species is present on the project site, and the species account in *The Breeding Bird Atlas of Santa Clara County, California* (Rottenborn 2007b) indicates that the species has been confirmed breeding in similar grassland habitats in an atlas block immediately adjacent to the project site.

  In addition, LOA indicated that the addition of a species account, as suggested by H. T. Harvey & Associates, was not warranted. Although CEQA guidelines do not require a species account for all

potentially occurring species on a project site, LOA did provide species accounts for some potentially occurring species of special concern. Therefore, for consistency, we recommend including the following species account for the Bryant's savannah sparrow.

> *Life History and Ecology*. The Bryant's savannah sparrow is one of four subspecies of savannah sparrow that breed in California. The *alaudinus* subspecies occurs primarily in coastal and bayshore areas, from Humboldt Bay to Morro Bay, and is found year-round in low-elevation, tidally influenced habitat, specifically pickleweed (*Salicornia* spp.) dominated salt marshes, and in grasslands and ruderal areas. Bryant's savannah sparrows breed in the County primarily in short pickleweed-dominated portions of diked/muted tidal salt marsh habitat, and in adjacent ruderal habitat, in the South San Francisco Bay area. Breeding also has been confirmed in expanses of short grassland in inland/upland areas on the west side of the Coyote Valley and in the Santa Cruz Mountain foothills, just north of the Pajaro River Valley (Rottenborn 2007b). During the non-breeding season, *alaudinus* and other savannah sparrow subspecies may forage in open areas throughout the County.
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> *Occurrence on the Site*. Grassland habitats within and adjacent to the project site provide potentially suitable nesting and foraging habitat for the Bryant's savannah sparrow, although this species is expected to breed there only in low numbers.

Chapter 3. Impacts and Mitigation

Section 3.3 Environmental Impact/Mitigation

Pg. 84, Impact Statement 3.3.3, Potential Impacts to California Tiger Salamander Habitat and Individuals – Based on our review, we have concerns regarding the adequacy of this impact analysis. Impact 3.3.3 concludes that the project will have a less-than-significant impact on California tiger salamander individuals and estivation habitat for this species due to a lack of suitable breeding habitat and the distance between the nearest suitable breeding habitat and the project site. We concur with LOA's determination that suitable breeding habitat is absent from the project area. However, we disagree with the conclusion that the project will have a less-than-significant impact on individual California tiger salamanders or on estivation habitat for this species.

The U.S. Fish and Wildlife Service (USFWS) considers 1.3 miles (6,864 feet) to be the maximum distance California tiger salamanders will typically move away from a breeding pond (USFWS 2004), and the VHP considers suitable upland habitat within 1.3 miles of breeding habitat to represent potential upland habitat (ICF International 2012).

Based on work by Trenham and Shaffer (2005), which found that 99% of California tiger salamanders at a research site on the Jepson Prairie Preserve in Solano County estivated within approximately 3,790 feet of their breeding pond, LOA concludes that the project will have a less-than-significant impact on individuals and on estivation habitat for the California tiger salamander because the nearest two

confirmed breeding ponds are located approximately 4,500 feet to the north of the project site. However, LOA notes that California tiger salamander larva have been found in a small wetland within Phase 3 of the project site. Although this feature has been confirmed to dry up by early spring and therefore does not provide suitable breeding habitat, the presence of larva is evidence that California tiger salamanders are moving onto the project site from some source, despite the distance to the nearest known breeding pond. In addition, based on a review of aerial photographs, at least two ponds that potentially provide suitable habitat for the California tiger salamander occur within 1.3 miles of Phase 1 but are located outside of the Sargent Ranch property and, therefore, were not included in the California tiger salamander and California red-legged frog larval surveys conducted on the property in 2001-2001, 2004, 2004, and 2017. Therefore, based on the documented occurrence of California tiger salamanders in Phase 3 of the project site, as well as the occurrence of known and potential breeding ponds within 1.3 miles of the project site, California tiger salamanders could potentially occur virtually anywhere within the project site. We recommend that all impacted natural habitat (i.e., areas that were not already paved or otherwise developed) be considered impacted California tiger salamander habitat for the purpose of the CEQA analysis. However, we do acknowledge that given the negative results of larval surveys conducted on the project site, the site appears to provide low-use habitat, which has implications for appropriate mitigation, as noted below.

Implementation of the proposed project, including the geotechnical setback areas, is expected to result in the disturbance of up to 418 acres of potentially suitable habitat for this species, including approximately 355 acres of annual grassland; 39 acres of coast live oak forest and woodland; 23 acres of grain, row-crop, hay & pasture, disked/short-term fallowed; and 0.8 acre of mixed riparian forest and woodland habitat. Due to the regional rarity of this species and continued threats to its populations, increased injury or mortality of individuals by quarry equipment, vehicle traffic, and worker foot traffic and loss or degradation of dispersal and estivation habitat would be considered a significant impact under CEQA.

The proposed project includes the preservation of approximately 392 acres of land on the Sargent Ranch property (252 acres of grasslands that provide estivation habitat for the California tiger salamander, 46 acres of coast live oak forest and mixed oak forest, 92 acres of scrub and chaparral habitats that, at best, are expected to provide low-quality habitat for the California tiger salamander, and 1.0 acre of seasonal wetland), the equivalent of a mitigation ratio of approximately 0.9:1 (mitigation:impact). It is our opinion that a mitigation ratio of 0.9:1 is not sufficient to reduce impacts on upland estivation habitat for the California tiger salamander to a less-than-significant level and we recommend the following habitat compensation measure be implemented.

<u>Recommended Mitigation Measure – Compensation for Loss of California Tiger Salamander Upland Habitat</u>

- The applicant will provide mitigation to compensate for unavoidable impacts on California tiger salamander upland habitat through the preservation, management, and enhancement

(e.g., through long-term management targeted toward this species) of high-quality habitat that is already occupied by California tiger salamanders at a ratio of at least 1:1 (mitigation:impact). Although this ratio is lower than typically required to compensate for impacts on California tiger salamander habitat, this low ratio reflects the negative results of most larval surveys conducted for the species within the project area, and therefore the low numbers of individuals that rely on the project area and could potentially be impacted by the project.

- The applicant will develop a Habitat Mitigation and Monitoring Plan (HMMP) describing the measures that will be taken to manage the created/enhanced upland habitat and to monitor the effects of management on the California tiger salamander. That plan will include, at a minimum, the following:
    - a summary of impacts on California tiger salamander habitat and populations, and the proposed mitigation;
    - a description of the location and boundaries of the mitigation site and description of existing site conditions;
    - a description of measures to be undertaken if necessary to enhance (e.g., through focused management) the mitigation site for California tiger salamanders;
    - proposed management activities, such as managed grazing, management of invasive plants, measures targeted at sustaining populations of burrowing mammals, or other measures to maintain high-quality habitat for California tiger salamanders;
    - a description of species monitoring measures on the mitigation site, including specific, objective goals and objectives (such as maintaining or increasing abundance of California tiger salamanders or maintaining or improving habitat suitability), performance indicators and success criteria (such as presence or abundance of upland refugia), monitoring methods (such as sampling of upland refugia), data analysis, reporting requirements, and monitoring schedule;
    - a description of the management plan's adaptive component, including potential contingency measures for mitigation elements that do not meet performance criteria; and
    - a description of the funding mechanism for the long-term maintenance and monitoring of the mitigation lands.

- Pg. 86, Impact Statement 3.3.4, Potential Impacts to California Red-Legged Frog Habitat and Individuals – Based on our review, we have concerns regarding the adequacy of mitigation for impacts on upland habitat and breeding habitat for the California red-legged frog. In regards to mitigation for impacts on upland habitat for the California red-legged frog, we disagree with LOA's conclusion that preservation of 392 acres of habitat at the on-site mitigation area is sufficient to reduce impacts on California red-legged frog upland habitat to a less-than-significant level. Given the number of recorded occurrences of California red-legged frogs in or adjacent to the project site (see Figure 4 and Table 5 in the Biotic Evaluation), California red-legged frogs could occur virtually anywhere on the project site. Therefore, all impacted natural habitat should be considered impacted California red-legged frog

habitat, and the project would result in the disturbance of up to 418 acres of suitable habitat for this species, including one suitable breeding pond (approximately 100 feet wide by 117 feet long [LOA 2017]) in the geotechnical setback area for Phase 4.

The proposed project includes the preservation of approximately 392 acres of land on the Sargent Ranch Property (252 acres of grasslands, 46 acres of coast live oak forest and mixed oak forest, 92 acres of scrub and chaparral habitats, and 1.0 acre of seasonal wetland [known California red-legged frog breeding habitat]), the equivalent of a mitigation ratio of approximately 0.9:1 (mitigation:impact) for impacts on upland habitats for the California red-legged frog. It is our opinion that a mitigation ratio of 0.9:1 is not sufficient to reduce impacts on upland habitat for the California tiger salamander to a less-than-significant level. Further, in regards to impacts on breeding habitat for the California red-legged frog, Mitigation Measure 3.3.4 states that "the applicant shall identify and preserve in perpetuity a known California red-legged frog breeding pond on-site with preserved connectivity to the project's mitigation area". However, the measure does not specify the ratio of mitigation acreage required per acre of impact on breeding habitat or require that the mitigation area by managed for the benefit of the California red-legged frog. Therefore, we recommend the following habitat compensation measure be implemented to reduce project impacts due to the loss of California red-legged frog upland and breeding habitat to a less-than-significant level.

<u>Recommended Mitigation Measure – Compensation for Loss of California Red-Legged Frog Upland and Breeding Habitat</u>

- The applicant will provide mitigation to compensate for unavoidable impacts on California red-legged frog upland habitat through the preservation, management, and enhancement (e.g., through long-term management targeted toward this species) of high-quality habitat that is already occupied by the California red-legged frog at a ratio of at least 2:1 (mitigation:impact).
- The applicant will provide mitigation to compensate for unavoidable impacts on California red-legged frog breeding habitat through one or both of the following methods:
    - the creation of aquatic habitat that could support the species at a 2:1 (mitigation:impact) ratio
    - the enhancement of degraded aquatic habitat that is unsuitable for use by California red-legged frogs, but that (a) is in close proximity to areas of known occurrence and (b) can be made more suitable for use via the eradication of aquatic predators (e.g., bullfrogs and predatory fish) at a 3:1 mitigation ratio.
- The applicant will develop an HMMP describing the measures that will be taken to manage the created/enhanced breeding and upland habitat and to monitor the effects of management on the California red-legged frog. That plan will include, at a minimum, the following:
    - a summary of impacts on California red-legged frog habitat and populations, and the proposed mitigation;

- a description of the location and boundaries of the mitigation site and description of existing site conditions;
- a description of measures to be undertaken if necessary to enhance (e.g., through focused management) the mitigation site for California red-legged frogs;
- proposed management activities, such as managed grazing, management of invasive plants, measures targeted at sustaining populations of burrowing mammals, or other measures to maintain high-quality habitat for California red-legged frogs;
- a description of species monitoring measures on the mitigation site, including specific, goals and objectives (such as maintaining or increasing abundance of California red-legged frogs or maintaining or improving habitat suitability), performance indicators and success criteria (such as presence or abundance of upland refugia or hydroperiod of breeding habitat), monitoring methods (such as sampling of upland refugia or monitoring of the hydroperiod of breeding habitat), data analysis, reporting requirements, and monitoring schedule. At a minimum, performance criteria will include occupation by the California red-legged frog of created breeding habitat;
- a description of the management plan's adaptive component, including potential contingency measures for mitigation elements that do not meet performance criteria; and
- a description of the funding mechanism for the long-term maintenance and monitoring of the mitigation lands.

- Pg. 90, Impact Statement 3.3.6, Potential Impacts to Burrowing Owls – We concur with LOA's determination that the project site provides potential foraging, roosting, and nesting habitat for the burrowing owl and that project activities could result in a potentially significant impact on this species and its habitat. However, we recommend that the discussion of impacts be revised as follows to further clarify the potential for impacts on this species:

  Burrowing owls have been observed foraging on the greater Sargent Ranch property, and burrowing owls have also recently (2016) been observed nesting on the northern portion of the greater ranch property. Thus, the project site provides potential foraging, roosting, and nesting habitat for this species. However, while a pair nested on the greater ranch property in 2016, the species is currently so scarce as a breeder in the South County that the majority of the impact area is likely used primarily, or solely, by wintering owls. Burrowing owls seem to occur more widely in the South San Francisco Bay in winter than they do during the nesting season. For example, burrowing owls occur on Coyote Ridge and in Coyote Valley during winter, but they have not been recorded lingering into spring and summer to nest in those areas in recent years. This suggests that wintering habitat for burrowing owls is not limiting the species' South San Francisco Bay populations.

  Nevertheless, project activities could result in a loss of habitat for this species and in impacts on individual owls should they nest or roost on the site and this would be considered a potentially significant impact. Construction activities that adversely affect the nesting success

of burrowing owls or result in mortality of individual owls that are nesting or roosting on the site would constitute a violation of state and federal laws and would be considered a significant impact under CEQA.

- Pg. 93, Impact Statement 3.3.7, Disturbance to Nesting Raptors and Nesting Migratory Birds – Based on our review, we have concerns regarding the adequacy of this impact analysis because mitigation for impacts on occupied tricolored blackbird and least Bell's vireo nesting habitat is not provided. Although there are no recent records of the tricolored blackbird on Sargent Ranch, the species has historically nested there (CNDDB 2017). In addition, the Biotic Evaluation identifies potential nesting habitat for the tricolored blackbird in one stock pond within the geotechnical setback area adjacent to Phase 4 and one small seep that occurs within the setback area of Phase 3. Further, suitability of this species' nesting habitat can change dramatically at a site from one year to the next (e.g., grazing can degrade habitat, and removal of grazing can allow habitat to regenerate from one year to the next). Thus, given the long duration anticipated for full project implementation, it is possible that tricolored blackbirds could occupy the site in the future, and that project activities would result in the loss of breeding habitat, a significant impact under CEQA.

  Similarly, although there are no recent records of the least Bell's vireo along the Pajaro River near the off-site wetland mitigation area, there is a historical record of the species in this area (CNDDB 2017), and a 1997 breeding attempt less than 4 miles to the northeast, and the riparian woodlands within this area provide potentially suitable nesting habitat for the species. Therefore, it is possible, although unlikely, that least Bell's vireo could occupy the site in the future, and that project mitigation activities would result in the loss of breeding habitat. Although we expect any wetland mitigation activities to increase the long-term quality of the riparian habitat at the off-site mitigation area, the loss of an active least Bell's vireo nest would be considered a significant impact under CEQA.

  Mitigation Measure 3.3.7 in the Biotic Evaluation requires nesting bird surveys and avoidance of active nests (e.g., through the implementation of appropriate non-disturbance buffers). However, no mitigation is provided for impacts on nesting habitat for the tricolored blackbird or the least Bell's vireo should either species nest on the site in the future. Therefore, we recommend that the following mitigation measures be included.

  <u>Recommended Mitigation Measure – Compensation for Loss of Tricolored Blackbird Nesting Habitat</u>

  If the project will result in direct impacts on a pond known to have supported nesting tricolored blackbirds within the last five years, compensatory mitigation will be provided in the form of habitat preservation at a ratio of 1:1, on an acreage basis. Habitat to be preserved must contain suitable nesting habitat for the tricolored blackbird, as determined by a qualified biologist. However, due to the itinerant nature of tricolored blackbirds and their nesting habitat, documentation of previous nesting by tricolored blackbirds on the mitigation site is not required, nor is management of the habitat in perpetuity.

  <u>Recommended Mitigation Measure – Compensation for Loss of Least Bell's Vireo Nesting Habitat</u>

If wetland mitigation activities at the off-site wetland mitigation area will result in direct impacts on riparian habitat determined to be occupied by nesting least Bell's vireos, the following measures will be implemented:

- If feasible, wetland mitigation activities will be redesigned to avoid the loss of nesting habitat for the least Bell's vireo.
- If avoidance of the nesting habitat is not feasible, the HMMP for the wetland mitigation area will include proposed enhancement and management activities, such as planting of riparian trees suitable for use as nesting habitat by the least Bell's vireo or other measures, to maintain high-quality habitat for the least Bell's vireo.

- Pg. 95, Impact Statement 3.3.9, Potential Impact to Special-Status Plant Species – In our April 21, 2017 peer review, we stated that we had concerns regarding the adequacy of this impact analysis for the following reasons:
  - lack of discussion of CRPR 2, 3, or 4 species, and whether any such species should be surveyed for;
  - lack of clarity on when special-status plant surveys would need to be conducted (i.e., a minimum of how many years before impacts would occur, especially for phased impacts); and
  - lack of specific discussion of how significant impacts will be defined following survey results.

  LOA's response states that no CRPR 2, 3, or 4 species came up on their CNDDB query. Further, LOA assert that "Setting up criteria upfront to determine whether the project would have a significant impact on rare plant populations would be impossible since this would be very specific to the species detected, its legal status at the time, its ecology, and what is known about the extent of the population in the region at the time the species is detected. As such, we believe this should be up to a qualified botanist to determine as indicated, should any special status plant species be detected during the rare plant surveys."

  As discussed in more detail above, it is our judgment that nine CRPR 3 and 4 species have some potential to be present on the project site. Further, it is our opinion that Mitigation Measure 3.3.9 is not adequate under CEQA because CEQA requires significance determinations and formulation of mitigation measures to occur before a project is approved. Although Mitigation Measure 3.3.9 includes mitigation measures for impacts determined to be significant, it does not specify the minimal criteria to be used in determining whether impacts on a special-status plant species, if determined to be present, would be considered significant and thus improperly defers the determination of significance.

  Therefore, we recommend the rare plant mitigation measures be revised as shown below to provide the criteria that will form the basis for a determination of impact significance and, when necessary, reduce project impacts due to the loss of rare plant individuals and occupied habitat to a less-than-significant level.

  <u>Recommended Mitigation Measure – Compensation for Loss of Rare Plants</u>

- Prior to initial ground disturbance of any Phase or impact site related to the project, a focused survey in the appropriate bloom season for potentially occurring special-status plant species will be conducted in the impact area and a 50-foot survey buffer of ground disturbing impacts. Surveys must take place no more than four years before ground disturbance for that Phase or new impact area commences. Surveys are to be conducted in a year with near-average or above-average precipitation. The purpose of the survey will be to assess the presence or absence of the potentially occurring species. If none of the target species are found in the impact area or surrounding 50-foot buffer, then no further mitigation measures will apply. If any individual special-status plants are found in the impact area or 50-foot buffer, then the following additional mitigation measures will be implemented.
- In consultation with a qualified botanist or plant ecologist, and to the maximum extent feasible, the project will be designed to avoid substantial direct and indirect impacts (e.g. the establishment of an appropriate sized buffer of at least 50 feet or larger, as determined by a qualified botanist based on the avoided species and the type of nearby impacts).
- If avoidance is not feasible and less than 10% of either individuals or occupied area within the population will be impacted, the impact will be considered less than significant, and no further mitigation is necessary.
- If avoidance is not feasible and more than 10% of either individuals or occupied area within the population will be impacted, then the following mitigation measures will be implemented to reduce impacts to a less-than-significant level.
    - The on-site conservation easement area will be surveyed during the appropriate blooming season to determine whether populations of the species being significantly impacted by the project are also present within areas that will be preserved. If populations of the species are present on the conservation easement, mitigation will be provided through preservation and management of these populations. Habitat occupied by the affected species will be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and also at least one occupied acre preserved for each occupied acre affected), for any impact over the 10% significance threshold.
    - If populations of the species are not present in the conservation easement, mitigation will occur through preservation and management of an off-site population. Habitat occupied by the affected species will be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and also at least one occupied acre preserved for each occupied acre affected), for any impact over the 10% significance threshold.

Areas proposed to be preserved as compensatory mitigation for special-status plant impacts must contain verified extant populations of the CRPR-ranked plants that would be impacted.

Mitigation areas will be managed in perpetuity to encourage persistence and even expansion of the preserved target species. Mitigation lands cannot be located on land that is currently held publicly for resource protection unless substantial enhancement of habitat quality will be achieved by the mitigation activities. The mitigation habitat will be of equal or greater habitat quality compared to the impacted areas, as determined by a qualified plant ecologist, in terms of soil features, extent of disturbance, vegetation structure, and dominant species composition, and will contain at least as many individuals of the species as are impacted by project activities. The permanent protection and management of mitigation lands will be ensured through an appropriate mechanism, such as a conservation easement or fee title purchase. An HMMP will be developed and implemented for the mitigation lands. That plan will include, at a minimum, the following information:

- a summary of habitat impacts and the proposed mitigation;
- a description of the location and boundaries of the mitigation site and description of existing site conditions;
- a description of measures to be undertaken to enhance (e.g., through focused management that may include removal of invasive species in adjacent suitable but currently unoccupied habitat) the mitigation site for the focal special-status species;
- a description of measures to transplant individual plants or seeds from the impact area to the mitigation site, if appropriate (which will be determined by a qualified plant or restoration ecologist);
- proposed management activities to maintain high-quality habitat conditions for the focal species;
- a description of habitat and species monitoring measures on the mitigation site, including specific, objective final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc. At a minimum, performance criteria will include demonstration that any plant population fluctuations over the monitoring period do not indicate a downward trajectory in terms of reduction in numbers and/or occupied area for the preserved mitigation population that can be attributed to management (i.e., that are not the result of local weather patterns, as determined by monitoring of a nearby reference population, or other factors unrelated to management); and
- contingency measures for mitigation elements that do not meet performance criteria.

The HMMP will be prepared by a qualified plant or restoration ecologist. Approval of the HMMP by the County will be required before the project impact occurs.

- Pg. 101, Impact Statement 3.3.10, Potential Impacts to Riparian Habitat and Other Sensitive Natural Communities Including Federally Protected Wetlands – Impact Statement 3.3.10 addresses mitigation

for impacts on sensitive natural communities, including riparian habitat. As detailed above, it is our opinion that the coast live oak woodland mapped by LOA along intermittent drainage 3 and the stockpile drainage would more appropriately be considered riparian woodland. Thus, the magnitude of impacts on riparian habitat are expected to be larger than what is indicated by LOA. Further, creation of wetlands at the approximately 9-acre off-site wetland mitigation area located east of Highway 101 has the potential to result in impacts on existing riparian habitat. Nevertheless, we concur with LOA's conclusion that any impacts on riparian habitat would be significant and that mitigation at a ratio of 1:1 would be sufficient.

- Pg. 102, Impact Statement 3.3.11, Potential Impacts to Western Red Bat, Pallid Bat, and Other Special-Status and Non-Special-Status Roosting Bats – In our April 21, 2017 peer review, we included the following comment regarding potential impacts on bats, "Impact statement 3.3.11 indicates that oak trees on the site provide potential roosting habitat for foliage- and cavity-roosting bats including special-status bats such as the western red bat (*Lasiurus blossevillii*) and pallid bat (*Antrozous pallidus*), and concludes that loss of maternal colonies of either special-status or non-special-status bat species due to tree removal would be considered a significant impact of the project. Proposed mitigation involves a preconstruction survey and, if necessary, eviction of the bats outside of the hibernation and maternity season. However, compensation for loss of roosting habitat is not required. We do not think that loss of roosts of any potentially occurring bat other than pallid bat would be considered significant under CEQA on this project. However, loss of an occupied pallid bat maternity roost could result in a substantial impact on the species' population because the number of known maternity roosts (and therefore, the availability of roosts that pallid bats find suitable) are limited locally and regionally."

  In response, LOA stated "We believe that the preservation of more than 45 acres of similar woodland habitat that provides potential breeding and roosting habitat for the pallid bat would compensate for the potential loss of such habitat as a result of the project." However, because there is no evidence indicating that the proposed mitigation area includes roost sites that would be suitable to pallid bats, and because the availability of suitable roost sites is likely a limiting factor for the pallid bat population, we recommend that the following mitigation measure be implemented to reduce impacts on the pallid bat to a less-than-significant level.

  <u>Recommended Mitigation Measure – Provide Alternate Roost</u>

  If a tree or structure containing a pallid bat maternity roost is to be removed, a qualified biologist will design and determine an appropriate location for an alternative roost structure, based on the location of the original roost and habitat conditions in the vicinity. The roost structure will be built to specifications as determined by a qualified biologist, or it may be purchased from an appropriate vendor. The structure will be placed as close to the impacted roost site as feasible. The applicant will monitor the roost for up to three years (or until occupancy is determined, whichever occurs first) to determine use by bats and after Year 3, submit a report verifying monitoring results to the County.

- Pg. 107, Impact Statement 3.3.14, Interference with the Movement of Native Wildlife – In our April 21, 2017 peer review, we included the following comment regarding potential impacts on wildlife movement, "As noted above, the project site is located within an area of important habitat connectivity for wildlife, and it is our opinion that a much more thorough analysis of the potential impacts of the project on wildlife movement is needed. The analysis should take into account all the major movement pathways (Gabilans – Santa Cruz, Gabilans/Santa Cruz – Diablo Range via Pajaro River). For example, additional information (e.g., height above ground) regarding the design of the proposed conveyor belt is needed to determine whether it would have the potential to block animals attempting to access Sargent Creek from the east or animals moving east to west through the site. In addition, an analysis of the potential for the project to cut off or substantially impede the ability of wildlife to access some of the important Highway 101 crossings should be included."

  In response to our comment, LOA stated "We believe our discussion of wildlife corridors is adequate and we have added additional information with regard to the conveyor belt."

  We concur with LOA's conclusion that the project is unlikely to result in a significant impact on the movements of native wildlife. However, due to the regional importance of the landscape linkages that occur on the Sargent Ranch property, we recommend that the discussion of potential project impacts on wildlife movement be augmented to include additional details, as follows.

  > As described above, the project site is located within an area of important habitat connectivity for wildlife, providing landscape linkages between the Santa Cruz Mountains and Diablo Range, and between these mountain ranges and the Gabilan Range. Further, exchange of individuals and genes among the populations in these three ranges is important to the long-term maintenance of populations and genetic diversity in these ranges and in central California as a whole. The proposed project would result in the construction of an approximately 1.6-mile-long, elevated conveyor belt between the processing plant in the north and the Phase 1 and 2 areas in the south. In addition, access and maintenance roads would extend from the quarry entrance across Tar Creek to the proposed processing plant and to all four proposed mining areas, including a 15-foot-wide dirt road alongside the conveyor belt structure. The proposed development and associated increase in vehicle traffic on the site could potentially reduce the ability of some animals to move through the site along the major movement pathways described above.
  >
  > The proposed conveyor belt and access road are oriented in a north to south direction. Thus, these features are not expected to create a substantial impediment to movement of wildlife between the Santa Cruz Range to the northwest of the project site and the Gabilan Range to the south. In addition, the proposed project mitigation site will protect in perpetuity an approximately 392-acre portion of Sargent Ranch located to the west of Sargent Creek, helping to maintain a broad, high-quality, north to south linkage.
  >
  > For wildlife moving between the Santa Cruz Mountains/Gabilan Range to the west and the Diablo Range to the east, the proposed conveyor belt and access road would be located

perpendicular to the path of movement. Because excavated materials would be transported from the mining areas to the processing plant via the conveyor belt, use of the access road is expected to be limited primarily to the passage of quarry employees (anticipated to include a maximum of 15 individuals) to and from the active mining area each day. This level of daily traffic is not expected to substantially impede wildlife movement across the unpaved access road. In addition, the conveyor belt has been designed as an elevated structure, 4-5 feet high, that would allow even larger mammals (e.g., coyotes [*Canis latrans*] and mountain lions [*Puma concolor*]) to readily pass underneath the structure. Therefore, neither the access road nor the conveyor belt are anticipated to substantially impede wildlife movement in an east-west direction through the site or access to the culverts and other undercrossings that facilitate wildlife movement beneath Highway 101.

In addition to increased traffic between the processing plant and mining areas, the project would also result in an increase in traffic along the private access road extending from the proposed processing plant northeast to the quarry entrance, including traffic associated with transportation of excavated materials off site and delivery of supplies to the processing plant. Maximum daily one-way trips during a peak production day are expected to be 910, while average daily one-way trips during a peak production day would be 341. Thus, the project would result in a substantial increase of traffic in the vicinity of the Tar Creek undercrossing of Highway 101, which has been found to receive heavy wildlife use (Caltrans 2011). However, wildlife moving along the Tar Creek riparian corridor to and from the Tar Creek undercrossing, would not be impeded by the additional project-related traffic crossing Tar Creek because the proposed project includes the replacement of the access road's current crossing of Tar Creek (a ford) with a new bridge. The bridge would span the banks of the creek and extend to a height of approximately 5 feet above the banks of Tar Creek. Thus, wildlife moving along the Tar Creek riparian corridor to and from the Tar Creek undercrossing of Highway 101 would not be impeded by the additional project-related traffic crossing Tar Creek. Further, with the exception of the bridge over Tar Creek, the project would be set back by 100-150 feet or more from the Tar Creek corridor, facilitating continued wildlife movement through the project site along this east-west oriented riparian corridor.

Therefore, due to the design of the conveyor belt, the low volume of traffic along the portion of the access road extending from the processing plant to the mining areas, and the replacement of the existing Tar Creek crossing with a bridge spanning the creek banks, impacts on wildlife movements as a result of the proposed project are considered less-than-significant under CEQA.

- Pg. 105, Impact Statement 3.3.12, Potential Impacts to Special-Status Animal Species – In the revised Biotic Evaluation, LOA added a discussion of potential impacts on, and mitigation for, the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), a California species of special concern. We concur with LOA's assessment of the potential for the project to result in significant impacts on this species and with the general method of mitigating such impacts. However, it is our opinion that the

inclusion of additional details regarding the implementation of mitigation is warranted to ensure that impacts are adequately compensated. Therefore, we recommend that Mitigation Measure 3.3.12 be revised as follows.

Recommended Mitigation Measure – Preconstruction Survey and Relocation of Nests that Cannot be Avoided

- No more than one week prior to initial ground disturbance within suitable habitat for the San Francisco dusky-footed woodrat, a preconstruction survey for woodrat nests will be conducted by a qualified biologist. The survey will consist of walking through all areas of suitable habitat within the project work area looking for woodrat nests.
- Dusky-footed woodrats are year-round residents. Therefore, avoidance mitigation is limited to designing the project to avoid direct impacts on woodrat nests to the extent feasible. Ideally, a minimum 10-foot buffer should be maintained between project construction activities and each nest to avoid disturbance. In some situations, a smaller buffer may be allowed if in the opinion of a qualified biologist removing the nest would be a greater impact than that anticipated due to project activities.
- If avoidance of active woodrat nests is not feasible, the woodrats will be evicted from their nests prior to the removal of the nests and onset of ground-disturbing activities to avoid injury or mortality of the woodrats. The eviction of woodrats and dismantling of woodrat nests will begin no earlier than one hour before sunset to allow woodrats to escape under cover of dusk and avoid predators. A qualified biologist will disturb the woodrat nest to the degree that all woodrats leave the nest and seek refuge outside of the project activity area. Subsequently, the nest sticks will be relocated; these materials will be piled at the base of a nearby tree or shrub outside of the activity area. The spacing between relocated nests will not be less than 20 feet, unless a qualified biologist has determined that the habitat can support higher densities of nests.

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Appendix E.7
Biotic Peer Review Addendum (2019)

ESA

H.T. HARVEY & ASSOCIATES
Ecological Consultants

Memorandum

August 19, 2019 **Project #3909-02**

To: **Amie Ashton, David J. Powers & Associates**

From: **Steve Rottenborn, H. T. Harvey & Associates**

Subject: **Sargent Ranch Quarry Biotic Evaluation Peer Review Addendum**

H. T. Harvey & Associates has been assisting David J. Powers & Associates and Santa Clara County with environmental review of the proposed Sargent Ranch Quarry project by conducting peer reviews of two drafts of the *Biotic Evaluation Sargent Ranch Quarry* prepared by Live Oak Associates, Inc. (LOA) and providing comments on that report and on issues necessary to perform California Environmental Quality Act (CEQA) assessment of the proposed project's impacts on biological resources. Our previous comments were provided in memoranda dated April 21 and December 8, 2017.

The current memorandum addresses two issues that were not addressed (or fully addressed) in our previous memos – potential impacts of a proposed rail spur and potential impacts on wildlife movement of activities in and around the proposed main processing plant area.

Proposed Rail Spur

Proposed activities. Based on materials provided by David J. Powers & Associates, as well as information provided by the applicant (through Verne Freeman of Freeman Associates), we understand that the project proposes to include a rail spur that would be constructed on the east side of the main plant and that would connect to the existing Union Pacific Railroad tracks. Construction of this spur, which was not part of the originally proposed project and was therefore not addressed in LOA's Biotic Evaluation, would allow the project to ship mined materials by rail, thus reducing the need for customers in San Jose and on the Peninsula to send trucks to the quarry to pick up loads. The project will take advantage of the proximity to the main rail line and will build two rail spurs on the south end of the plant area. Each rail spur will allow eight 100-ton freight cars to be loaded with an overhead conveyor system, enabling the quarry to ship 1600 tons of sand per day to destinations from San Jose to San Francisco. Most freight service will likely run at night. This rail shipment will replace the need for approximately 70 trucks a day to drive to the quarry. The quarry will contract with Union Pacific Railroad or one of its subcontractors to provide freight cars and to haul the trains to their final destination. According to information provided by Mr. Freeman during an August 9, 2019 conference call,

the freight cars would be loaded during the day; the eight cars that could be loaded at a time would all fit on the proposed rail spurs without blocking the main tracks; and no more than one group of eight cars would depart the site on a given night.

Existing biological conditions. The majority of the area in which the rail spur would be constructed is within the Sargent Ranch property, and existing conditions in those on-site areas were therefore addressed by LOA's biotic evaluation and H. T. Harvey's peer review memos. I briefly viewed the rail spur area (including the area within the existing Union Pacific Railroad right-of-way, east of the Sargent Ranch boundary fence) from the U.S. 101 frontage road and the railroad tracks on August 9 and 18, 2019, and I walked the on-site portion of the rail spur area during a site visit with Mr. Freeman on August 12, 2019.

The majority of the rail spur location is occupied by a grassy field used as a cattle pasture (Photo 1); this habitat type is considered "grain, row-crop, hay, and pasture" as indicated in LOA's biotic evaluation for the adjacent area that would be occupied by the main processing plant. Vegetation in this area is dominated by several species of grasses and forbs. Although it had been recently mown when I visited the site on August 12, extensive bristly ox-tongue (*Helminthotheca echioides*) was apparent in the area where the rail spur would be located, along an existing fenceline. Immediately south of the fenceline (i.e., on the other side of the fence from where the rail spur would be constructed), similar upland pasture habitat is present for approximately 75 feet or more before potential wetlands appear farther to the south.

Photo 1. Existing conditions in the grain, row-crop, hay, and pasture habitat occupying the area where the on-site portion of the rail spur would be located.

The area where the rail spur would pass through the railroad right-of-way and connect to the existing railroad is dominated by unmown bristly ox-tongue and poison hemlock (*Conium maculatum*), with some coyote brush (*Baccharis pilularis*), blue elderberry (*Sambucus cerulea*), and willows (*Salix* sp.) (Photo 2). The two clumps of willows, which are often associated with areas having high groundwater, are slightly higher on the railside embankment than the lowest topographic area; in contrast, areas immediately adjacent to the railroad tracks just south of the proposed rail spur location supported more obviously hydrophytic vegetation (and more extensive hydrophytes), suggesting the presence of wetlands, as well as obvious riparian vegetation. Based on our field observations, it is our opinion that wetlands are absent from the rail spur footprint. However, these two clumps of willows represent a small occurrence of "mixed riparian woodland and forest" habitat.

Photo 2. Existing conditions in the area where the proposed rail spur would connect to the existing railroad tracks, within the railroad right-of-way.

Potential impacts on biological resources. Construction of the rail spur will result in the loss of existing habitat within the area that would be occupied by the rail spur and the rock bedding on which the spur would be placed. Based on our habitat evaluation and our estimate of the dimensions of the rail spur, we estimate that construction of the rail spur will result in impacts to approximately 0.69 acre of habitat considered "grain, row-crop, hay, and pasture" and less than 0.01 acre of mixed riparian woodland and forest. Construction of the rail spur could potentially result in mobilization of sediments from the rail spur location into adjacent areas. During rail operations, mined materials on the cars being loaded could potentially spill into adjacent areas, and fluids

or chemicals associated with the freight cars could leak onto the rail spur and potentially be washed into adjacent areas.

Potential impacts of construction and operation of the rail spur on individual biological resources are summarized below:

- Impacts on Central California Coast steelhead, wetlands, and aquatic habitats – construction and operation of the rail spur will not result in direct impacts on Tar Creek, which provides habitat for the Central California Coast steelhead (*Oncorhynchus mykiss*) and other fish, or on any other aquatic habitats or wetlands. There is some potential for sediments mobilized during construction, or for chemicals or fluids associated with the freight cars, to be washed into wetlands (e.g., in the area south of the rail spur). However, implementation of Mitigation Measure (MM) BIO-1a.1 for the overall project, to minimize impacts of the project on water quality and aquatic species, will reduce any indirect impacts on wetlands, aquatic habitats, and aquatic species to less-than-significant levels.
- Impacts on California tiger salamander, California red-legged frog, and western pond turtle habitat and individuals – construction of the rail spur will not result in impacts to aquatic breeding habitat of the California tiger salamander (*Ambystoma californiense*) or California red-legged frog (*Rana draytonii*), or to aquatic habitat used by western pond turtles (*Actinemys marmorata*), but it will result in impacts on approximately 0.70 acre of habitat that could potentially be used by these species for dispersal or upland refuge. There is some potential for individuals to be injured or killed during construction or operation of the rail spur. MM BIO-1b.1 and 1b.2 for the overall project will be implemented to minimize impacts on these species and their habitats. MM BIO-1c.1 will be implemented to compensate for impacts to California tiger salamander habitat, and BIO-1e.1 will be implemented to compensate for impacts to California red-legged frog habitat (i.e., the 0.70 acre of suitable habitat that would be impacted by the rail spur will be compensated in the same manner as impacts to these species' habitats from other project activities). Implementation of these mitigation measures will reduce impacts on California tiger salamanders, California red-legged frogs, and western pond turtles to less-than-significant levels.
- Impacts on burrowing owls – no burrowing owls (*Athene cunicularia*) or their burrows were observed during our site reconnaissance surveys, and the potential for burrowing owls to nest in the rail spur area is low, for the reasons discussed in our December 8, 2017 peer review memo for the project site as a whole. Nevertheless, burrowing owls have been recorded on Sargent Ranch, and the on-site portion of the proposed rail spur is occupied by habitat with short vegetation that provides ostensibly suitable nesting, roosting, and foraging habitat for this species. If the species uses the area where the rail spur will be constructed, construction would result in the loss of approximately 0.69 acre of potential habitat for the species. If burrowing owls are occupying burrows within or very close to the rail spur area, construction could damage occupied burrows, potentially causing injury or mortality of owls, or disturb owls to the point of burrow abandonment (possibly including abandonment of eggs or young, in the unlikely event that owls are nesting there). Implementation of MM BIO-1g.1 would minimize impacts to individual owls, including active nests, and implementation of MM BIO-1c.1 and 1e.1 for the California tiger salamander and California red-legged frog, respectively, would compensate

for any impacts of the rail spur on burrowing owl habitat. Collectively, implementation of these mitigation measures would reduce impacts of the rail spur on burrowing owls to less-than-significant levels.

- Impacts on American badgers – no American badgers (*Taxidea taxus*) or their dens were observed during our site reconnaissance surveys, but this species has been recorded on Sargent Ranch and could potentially use the rail spur area for foraging and dispersal; there is some potential (albeit low) for the species to den there. Construction of the rail spur would result in the loss of approximately 0.70 acre of potential habitat for the species (badgers typically use open habitats but could use the willow riparian habitat for cover). If badgers are occupying a den within or very close to the rail spur area, construction could damage a den, potentially causing injury or mortality of individual badgers, or disturb badgers to the point of den abandonment (possibly including abandonment of young). Implementation of MM BIO-1h.1 would minimize impacts to individual badgers, including their dens, and implementation of MM BIO-1c.1 and 1e.1 for the California tiger salamander and California red-legged frog, respectively, would compensate for any impacts of the rail spur on American badger habitat. Collectively, implementation of these mitigation measures would reduce impacts of the rail spur on American badger individuals, dens, and habitat to less-than-significant levels (but see *Impacts of Main Plant Activities on Wildlife Movement* below).
- Impacts on nesting raptors and other migratory birds – a number of bird species could nest in or very close to the area where the rail spur would be constructed. The only special-status bird species (aside from burrowing owl, discussed above) that could potentially nest within the footprint of the rail spur construction area is the loggerhead shrike (*Lanius ludovicianus*); this species was not observed in the rail spur area during site reconnaissance surveys, but coyote brush, elderberry, and willow trees/shrubs within the railroad right-of-way where the rail spur would connect to the existing rail line provide potential nesting habitat for up to one pair of shrikes. Construction of the rail spur would result in the loss of 0.70 acre of habitat that could provide nesting and/or foraging habitat for the loggerhead shrike and a variety of other bird species, although habitat loss would be a less-than-significant impact due to the regional abundance of similar habitats. However, construction during the nesting season (February 1 through August 31) could also result in destruction of active nests or abandonment of eggs or young due to disturbance. Implementation of MM BIO-1i.1 to avoid the destruction or abandonment of active nests of protected birds would reduce this impact to a less-than-significant level.
- Impacts on tricolored blackbirds and least Bell's vireos – no suitable nesting habitat for the tricolored blackbird (*Agelaius tricolor*) or least Bell's vireo (*Vireo bellii pusillus*) is present within the footprint of the proposed rail spur, or close enough for construction of the rail spur to result in the loss of these species' nesting habitat or disturbance of an active nest. The two clumps of willows within the railroad right-of-way are too small to provide suitable nesting sites for least Bell's vireos, and any wetland habitat (for tricolored blackbirds) or riparian habitat (for vireos) suitable for nesting in areas to the south of the rail spur are located far enough from construction areas that construction would not result in disturbance of active nests. Although the pasture habitat that dominates the rail spur location provides suitable foraging habitat for tricolored blackbirds, such habitat is regionally abundant, and the loss of 0.69 acre of such habitat from rail spur construction would not result in a substantial impact on this species'

foraging habitat. Therefore, impacts of rail spur construction and operation on these two species would be less than significant.

- Impacts on western red bat, pallid bat, and San Francisco dusky-footed woodrat – no suitable roosting habitat for the western red bat (*Lasiurus blossevillii*) or pallid bat (*Antrozous pallidus*) is present within or near the rail spur area, and no nests of the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) were observed within the rail spur area during site reconnaissance surveys. Therefore, construction and operation of the rail spur will not result in impacts to these species' roosting or breeding sites. Although all three species could potentially forage on or over the rail spur area, the loss of 0.70 acre of potential foraging habitat would not result in a substantial impact on these species' foraging habitat, which is regionally abundant. Therefore, impacts of rail spur construction and operation on these three species would be less than significant.
- Indirect impacts on Bay checkerspot butterflies – the project as a whole was determined to have a significant impact on Bay checkerspot butterflies (*Euphydryas editha bayensis*) due to emissions of nitrogen compounds from vehicles that would regularly access the project site, as those nitrogen compounds have the potential to degrade serpentine grasslands on which Bay checkerspots depend by fertilizing the soil and counteracting the competitive advantage that native plants have over nonnative grasses on serpentine habitats. Construction of the rail spur would allow some of the mined materials from the Sargent Ranch Quarry to be transported via rail rather than by truck, reducing the need for up to 70 truck trips per day. Transporting materials by rail would result in lower nitrogen emissions than those 70 trucks trips, thereby reducing nitrogen emissions. As a result, no additional mitigation related to construction or operation of the rail spur would be needed for impacts on Bay checkerspots.
- Impacts on special-status plants – owing to disturbance from pasture use and cattle ranching operations, there is a low potential for the rail spur area to support special-status plants. However, some of the special-status plant species that were determined to potentially occur on the larger project area, such as Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), occasionally occur in disturbed areas similar to the rail spur area, and therefore there is at least a low potential for special-status plants to occur in or very close to this area. If they are present, construction of the rail spur would result in the loss of individual plants and their habitats within the rail spur footprint, and if special-status plants are present close by, they could potentially be impacted by mobilization of dust, sediment, or chemicals. Implementation of MM BIO-1o.1 would reduce and/or compensate for impacts on special-status plants, reducing such impacts to less-than-significant levels.
- Impacts on riparian habitat – construction of the rail spur will result in the loss of almost 0.01 acre of riparian habitat in the form of two clumps of willows within the existing railroad right-of-way. Implementation of MM BIO-2a.2 to provide compensatory mitigation for loss of riparian habitat will reduce impacts of rail spur construction on riparian habitat to less-than-significant levels.
- Impacts on oak woodlands – no oak woodlands are present within or very close to the proposed location of the rail spur, and therefore this project component will not result in impacts on oak woodlands.

- Impacts on wildlife movement – the rail spur will be located immediately adjacent to the project's main processing plant. Construction and operation of the rail spur will contribute to the impacts that activities in and around the main plant will have on wildlife movement, as described in *Impacts of Main Plant Activities on Wildlife Movement* below.
- Impacts from conflicts with local policies or ordinances – construction of the rail spur will result in the removal of very few trees, possibly limited to two clumps of willows and one elderberry tree along the existing railroad right-of-way. To the extent that these trees are protected by Santa Clara County's Tree Preservation and Removal Ordinance, the project's compliance with that ordinance will avoid impacts related to conflicts with this ordinance to less-than-significant levels. The rail spur would not require construction within 150 feet of Tar Creek or any other creek, so this project component would not conflict with County policies regarding riparian setbacks. No other significant impacts would result from conflicts with local policies or ordinances, related to construction or the operation of the rail spur.
- Conflicts with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan – although the Sargent Ranch Quarry Project is not a covered activity under the Santa Clara Valley Habitat Plan and is not subject to the fees and conditions of the plan, aspects of the project have been designed to be consistent with the goals and objectives of the Plan. Construction and operation of the rail spur would not conflict with the Plan.

As described above, construction and operation of the rail spur would increase overall project impacts on some biological resources by a relatively small amount. With implementation of the mitigation measures specified above, incorporation of the rail spur into the project would not result in a significant cumulative impact on biological resources.

Impacts of Main Plant Activities on Wildlife Movement

In our previous peer review memos, we discussed the importance of the Sargent Ranch vicinity to regional wildlife movements and the potential impacts on wildlife movement of several project components, such as the proposed mining areas and the conveyor belt that would carry mined materials from mining areas 1 and 2 to the main plant. We determined that, despite the importance of this property to regional wildlife movement, project impacts on wildlife movement would be less than significant.

Since our preparation of those memos, we have reconsidered the activities proposed in and around the main processing plant in more detail and have determined that impacts of those activities on wildlife movement are potentially significant due to the proximity of the main plant to an important feature that allows wildlife to move across U.S. 101 – the Tar Creek/railroad undercrossing. In this section, we describe the wildlife movement issues pertaining to that crossing, and the potential effects of project activities on wildlife use of that crossing, in detail.

Importance of the Tar Creek/railroad undercrossing to wildlife movement. From 2007 to 2011, H. T. Harvey & Associates assisted David J. Powers & Associates and the Santa Clara Valley Transportation Authority (VTA) with environmental planning for the 7.5-mile U.S. Highway 101 Improvement Project between Monterey Street in Gilroy, Santa Clara County and State Route 129 in San Benito County – a study area that included the entire segment of U.S. 101 adjacent to the Sargent Ranch Quarry project site. The U.S. 101 Improvement Project proposes widening of U.S. 101, reconstruction of the U.S. 101/State Route 25 interchange, construction or improvement of frontage roads, and other improvements. Because some of the project's components were thought to have potential to impact wildlife movement, we conducted a focused assessment of wildlife movement through the U.S. 101 study area, assessing existing conditions related to wildlife movement, evaluating potential impacts of project activities on wildlife movement, and engaging in considerable discussion of wildlife movement issues with David J. Powers & Associates, VTA, and biologists from Caltrans, the California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service. The results of our assessment were described in a Natural Environment Study[1] and summarized in the project's Environmental Impact Report[2].

During our assessment of wildlife movement conditions along this reach of U.S. 101, we described the importance of connectivity between the general Sargent Ranch area, where the Santa Cruz and Gabilan mountain ranges meet west of U.S. 101, and areas east of U.S. 101, where undeveloped agricultural lands and the Pajaro River provide connectivity eastward toward the Diablo Range[3]. Although the Diablo Range is separated from the foothills of the Santa Cruz Mountains and Gabilan Range by a considerable distance (e.g., approximately 6 miles in a straight line from Tar Creek at U.S. 101 to the nearest foothills of the Diablo Range to the northeast), the limited nature of development along the Pajaro River valley, coupled with vegetative cover along the Pajaro River and its tributaries (such as Tar, Carnadero, and Llagas Creeks), provide some opportunity for more mobile mammals such as the mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), and mountain lion (*Puma concolor*), and possibly the American badger, to disperse across the valley between the Diablo Range and the Santa Cruz/Gabilan Ranges. For smaller, less mobile mammals such as the gray fox (*Urocyon cinereoargenteus*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*), dispersal of single individuals from one side of the valley to the other may be infeasible, but riparian habitat on the valley floor may provide suitable habitat for resident individuals, so that over time, genetic exchange between populations on either side of the valley floor can occur. Exchange of individuals and/or genes between populations in the Santa Cruz Mountains, the Gabilan Range, and the Diablo Range is important to prevent isolation of populations in any one area, yet alteration of the valleys between ranges by urban development and agricultural land conversion has reduced connectivity, emphasizing the importance of areas that still provide some connectivity. The general wildlife movement pathways that we considered during that study are shown on "Figure 6" below, which is

[1] California Department of Transportation. 2011. Natural Environment Study. U.S. Highway 101 Improvement Project between Monterey Street and State Route 129 from PM 5.0 in Santa Clara County to PM 4.9 in San Benito County.
[2] Santa Clara Valley Transportation Authority. 2013. U.S. 101 Improvement Project between Monterey Street and State Route 129. Draft Environmental Impact Report.
[3] The importance of the north-south landscape linkage between the Santa Cruz Mountains and the Gabilan Range, as well as the potential for project impacts on that linkage, were addressed adequately in our previous peer review memos.

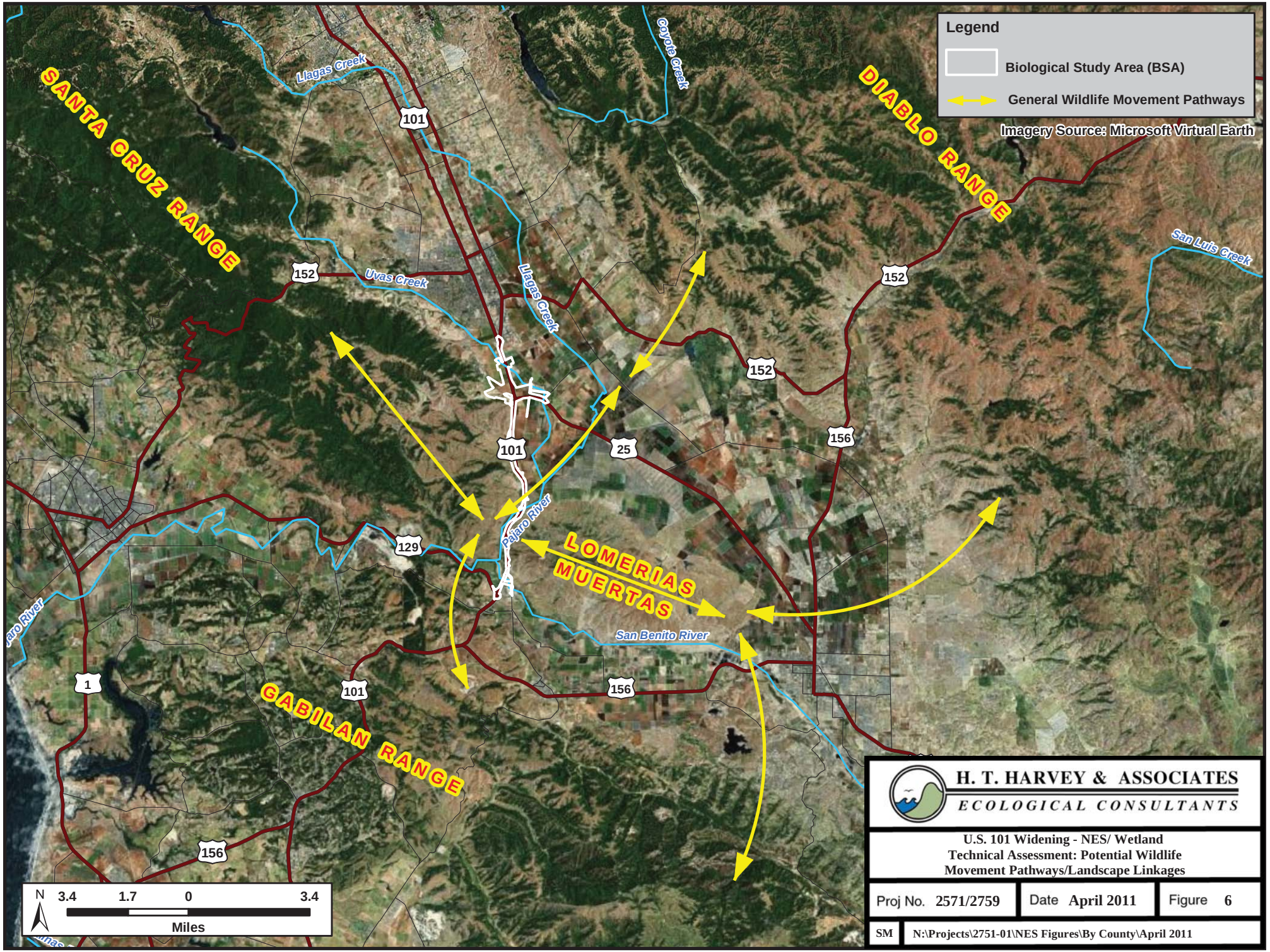
from the U.S. 101 Improvement Project Natural Environment Study; the movement pathway shown by yellow arrows along the Pajaro River is the one most relevant to the current discussion.

Our assessment of the U.S. 101 Improvement Project identified U.S. 101 itself as an important impediment to wildlife movement along the pathway between the Diablo Range and the Santa Cruz and Gabilan Ranges, but it also identified areas where wildlife could cross the highway. These features are shown on "Figure 5" below, which is from the U.S. 101 Improvement Project Natural Environment Study. In some places, the highway is a complete barrier for most mammals due to the presence of a concrete median barrier, while in other locations, such as between the State Route 25 interchange and the 101 overcrossing of the railroad tracks adjacent to the proposed main processing plant of the Sargent Ranch Quarry Project, a thrie-beam median feature would allow wildlife passage across the highway's surface if animals are able to navigate the traffic. However, traffic in the segment with a thrie-beam barrier likely impedes wildlife movement both by discouraging wildlife from attempting to cross the highway and through vehicular collisions with wildlife. A number of culverts, bridges, and overpasses along this segment of U.S. 101 provide safer means by which wildlife could potentially cross the highway to the extent animals are willing to use such crossings.

To obtain information on the degree to which animals cross under or over U.S. 101 using culverts and bridges, we deployed motion-sensor cameras at potential wildlife crossings from 13 February to 10 June 2008, in the areas indicated on Figure 5 below. Among those potential crossing locations was the Tar Creek/railroad undercrossing beneath U.S. 101, which is directly adjacent to (and just northeast of) the proposed main processing plant site of the Sargent Ranch Quarry Project. At this location, two cameras were placed on each side of the creek directly below the two highway spans, and over the course of the study, the cameras recorded 25 mammal detections at this crossing – 14 bobcats, six coyotes, two mule deer, one raccoon, one striped skunk, and one Audubon's cottontail (*Sylvilagus audubonii*). For comparison, cameras recorded 82 mammal detections under the bridge over the San Benito River, 43 at a 48-inch reinforced concrete pipe (RCP) culvert south of the Betabel/Y Road interchange, 23 under the bridge over the Pajaro River, 21 at a 55-inch RCP culvert north of the Betabel/Y Road interchange, 18 at the Tick Creek box culvert, 14 at a 90-inch corrugated metal pipe culvert south of the Pajaro River, and 10 at a set of four 28-inch RCP culverts along Y Road (not including domestic cat detections). Although the camera study did not confirm whether each of the mammals detected actually crossed under the highway at these locations, many images were of mammals clearly crossing through these undercrossings or entering/existing these features, indicating that these undercrossings were being used by mammals to cross U.S. 101.

Our assessment of wildlife movement along the 7.5-mile segment of U.S. 101 studied for the highway improvements project concluded the following, with respect to the importance of various areas along U.S. 101 to wildlife movement and the areas where wildlife are best able to cross the highway:

> Although larger mammals may be capable of traversing the median barrier and undercrossings are available and used by mammals and fish, the highway does restrict surface movements of many species, particularly where continuous concrete median barriers are present. Therefore, U.S.



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ECOLOGICAL CONSULTANTS

U.S. 101 Widening - NES/ Wetland
Technical Assessment: Potential Wildlife
Movement Pathways/Landscape Linkages

Proj No. 2571/2759	Date April 2011	Figure 6
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Miles

Imagery Source: Microsoft Virtual Earth

LEGEND

- Biological Study Area (BSA)
- 1 Camera Stations
- Overpasses
- Bridges/ Culverts
- Existing Concrete Median Barrier
- Creeks

Sargent Ranch

Castro Valley Ranch

Bluestone Quarry

Pescadero Creek

Tick Creek

Pajaro River

San Benito River

Carnadero Creek

Llagas Creek

ANZAR RD

SAN JUAN HWY

US HIGHWAY 101

STATE HIGHWAY 25

COUNTY HWY G7

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

U.S. 101 Widening - NES/ Wetland Technical Assessment: Potential Wildlife Crossings and Camera Stations

Proj No. 2751/2759	Date April 2011	Figure 5

SM N:\Projects\2751-01\NES Figures\By County\April 2011

101 is likely a substantial impediment to the movement of wildlife. Due to development, cultivation, a fairly high chain-link fence along the highway north of Carnadero Creek, and a concrete median barrier between Carnadero Creek and SR 25, the area north of SR 25 is likely not very permeable for regional wildlife movements. Despite the presence of high-quality habitat west of U.S. 101, the area from SR 25 south to Tar Creek is likewise not as critical a wildlife crossing area given the inhospitable character of the heavily cultivated fields to the east, but should not be discounted altogether. Overall, the most successful and ecologically significant movement by wildlife across U.S. 101 occurs from Tar Creek south to the San Benito River. However, because most of this segment contains a median barrier, successful movement by most species in this segment likely relies on the use of undercrossings.

Of the undercrossings available for use by wildlife, the Tar Creek/railroad undercrossing was considered one of the highest-quality crossing locations due to its dimensions. Undercrossings for wildlife are thought to be of higher quality if they are more "open", having more natural light and requiring animals to move through a limited area so that they do not feel as though they are in a tunnel. This has been characterized as the "openness ratio", which the ratio of height to width[4], or an index of (width x height/length)[5]. The Tar Creek/railroad undercrossing is a very broad crossing, in terms of the length of U.S. 101 under which animals can move, being approximately 500 feet wide as measured between the abutments on the narrower (northbound) span. It is also tall, with the spans high above the ground, and short (from one side to the other) so that it is well lit rather than being a darker, more tunnel-like undercrossing as the U.S. 101 bridges over the Pajaro River and San Benito River are. This openness makes the U.S. 101 overcrossing over Tar Creek and the railroad tracks near the proposed main processing plant a high-quality crossing (Photo 3). This undercrossing is also valuable for wildlife movement because high-quality cover for dispersing mammals is present on both sides of the crossing. To the east, mammals can use vegetative cover associated with Tar Creek itself, or with Tick Creek to the north, scrub on the east side of the hill immediately east of U.S. 101 south of Tar Creek, and the Pajaro River farther south and east. To the west, Tar Creek provides cover for mammals dispersing from the west or northwest, and riparian vegetation along the west side of the rail line south of the proposed main plant location provides cover for dispersing animals. For all these reasons, the U.S. 101 overcrossing over Tar Creek and the railroad tracks near the proposed main processing plant provides one of the highest-quality undercrossings of U.S. 101 in the region.

[4] Defenders of Wildlife. 2007. Getting up to speed: a conservationist's guide to wildlife and highways. Washington, D.C.
[5] Forman, R. T. T., D. Sperling, J. A. Bissonette, A. P. Clevenger, C. D. Cutshall, V. H. Dale, L. Fahrig, R. France, C. R. Goldman, K. Heanue, J. A. Jones, F. J. Swanson, T. Turrentine, and T. C. Winter. 2003. Road ecology: science and solutions. Island Press: Washington, D.C.

Photo 3. View of the Tar Creek/railroad undercrossing beneath U.S. 101, looking north. The southbound 101 span is in the foreground, and the northbound span is in the background.

Potential project impacts on use of the Tar Creek/railroad undercrossing. Based on project description materials and other information provided by the applicant, several aspects of the Sargent Ranch Quarry project are expected to constrain wildlife use of this undercrossing:

- Phases 3 and 4 of the mining area, and the permanent overburden stockpile area, are located in areas where some wildlife likely move when approaching the undercrossing from the west, or when moving east to west after crossing under U.S. 101. Physical modifications of the ground from mining and stockpiling, such as making grades steeper, and the disturbance associated with the movement of heavy equipment and project personnel, will impede wildlife movement in those areas. However, wildlife will still move around those areas, and they are located far enough from the actual undercrossing that there will still be ample opportunity for animals to move around those areas.
- Owing to the physical location of the main plant, coupled with its close proximity to the undercrossing, the main plant would occupy a large proportion of the area immediately west/southwest of the undercrossing. Animals that currently move through the fields in which the main plant (including the proposed stockpile area between the main plant and the railroad tracks, and the proposed rail spur) is located would need to move around the main plant. There would still be space north, east, and south of the main plant through which animals could move, but the plant would occupy a large area of open space immediately adjacent to the undercrossing.

- Noise and movement of equipment and project personnel within and around the main plant would disturb animals, potentially discouraging them from moving along their intended pathways.
- Some of the animals for which the undercrossing is important are active at night, so disturbance from nighttime activity at the plant (noise, movement of equipment and project personnel, and lighting) will likely discourage some animals from moving along their intended pathways. Based on information provided by the project applicant, we understand that nighttime activities will include the following:
    - Activities at the main plant may begin as early as 4:30 a.m. each day, continuing until 5:00 p.m.
    - Between 5:00 p.m. and 4:30 a.m., rail personnel will arrive at the site and pull the loaded freight cars out of the rail spur, taking the cars north to San Jose and the Peninsula. It is expected that time spent on the site itself would be very brief as an engine arrives, links to the freight cars, and drives away.
    - Some permanent nighttime lighting will remain on at the plant throughout the night, though this lighting will be the minimum necessary for site security.
- The new bridge over Tar Creek will inhibit wildlife movement along the creek to some extent. Currently, the at-grade crossing poses no impediment to wildlife movement parallel to the creek, and even provides a shallow-water crossing, lacking dense riparian vegetation, that wildlife could use to cross through the creek and riparian corridor. The proposed bridge would span the channel, and its abutments/approaches are expected to provide a physical impediment that wildlife will need to circumvent by moving under the bridge or around the abutments (i.e., crossing this access road where it then comes back down to the existing grade).
- Increased traffic, especially by trucks carrying mined materials, on the access road over Tar Creek, along Old Monterey Road (when entering the site), and along the exit from the site heading northbound onto U.S. 101 (which will necessitate having vehicles cross from west to east under U.S. 101 to access northbound 101), will result in increased disturbance of wildlife and an increased potential for collisions between project-related vehicles and wildlife.

Other factors considered in the assessment. In addition to the project components described in the previous section that will constrain wildlife movement, we considered several other factors that reduce, or at least qualify, the project's potential impacts on wildlife movement:

- Existing fencing around the proposed main plant area currently provides some impediment to wildlife movement. Five-strand barbed wire for the existing cattle ranching operation is present along the Old Monterey Road access road to the site; the outer edge of the Tar Creek riparian corridor; the eastern site boundary (along the edge of the railroad tracks); and the southern boundary of the main plant area. Immediately west of the northwestern portion of the proposed main plant area, cattle herding/separation pens provide a number of fences that animals would need to navigate when moving east-west or west-east through the vicinity of the main plant. In some areas, such as along the boundary between the site and the railroad tracks, new five-strand barbed wire fencing has been added to older barbed wire fencing so that gaps between strands are particularly narrow. Although animals such as mature mule deer, mountain lions, bobcats, and gray foxes can likely jump or climb over the fencing,

and smaller animals can find areas to cross under the fencing, the site does not provide easy, impediment-free movement even in its current condition.

- An existing residence and small ranching area, including pens for ranching dogs, is present immediately north of Tar Creek and west of U.S. 101, at the south end of Old Monterey Road. This residence is occupied by the rancher. The occupancy of this residence and the presence of dogs likely discourages wildlife movement to some extent along the north side of Tar Creek, where there is a narrow, fenced/gated opening between Tar Creek and the northern abutment for the southbound 101 span. This residence will continue to be occupied following project implementation.
- The area that will be occupied by the main plant is currently an open field (see Photo 1 above). Some mammals are expected to cross such open areas, especially at night, but many animals will remain closer to vegetative cover, such as the riparian woodland along Tar Creek north of the main plant or along the railroad tracks south of the main plant, when moving through the area.
- Even with all the proposed features of the main plant discussed above, there will be sufficient physical space for animals to move around the main plant. The 150-foot setback between the main plant and the riparian corridor along Tar Creek will include some small flood protection berms, but these berms will be no higher than 3-5 feet, will be vegetated, and will not be too steep for animals to navigate. Animals would therefore be able to move through this 150-foot setback area, or through the Tar Creek riparian vegetation. Although animals moving along the west/south side of Tar Creek past the project site would need to navigate around or under the new bridge over Tar Creek, they will be physically able to do so as long as no new fencing is constructed along that road. Animals attempting to move to or from the overcrossing from points to the south could move through ample open space that will not be impacted by the project on the south side of the main plant and then along the frontage road and railroad tracks east of the main plant. The area east of the main plant includes the rail line, frontage road, and ruderal vegetation that collectively is 140 feet wide or more (Photo 4); during our site reconnaissance surveys, we observed quite a bit of large mammal scat (most likely coyote and bobcat) on the frontage road. Although animals may move through these areas less frequently after project implementation, due to disturbance associated with the main plant and project-related traffic, and although the main plant will occupy a large area close to the undercrossing, animals will still be able to move around the main plant.

Photo 4. The area between the main plant and U.S. 101, containing the frontage road, rail line, and ruderal vegetation on either side of the rail line, provides a minimum 140-foot wide area through which animals could continue to move.

- As described under "*Importance of the Tar Creek/railroad undercrossing to wildlife movement*" above, animals moving along the regionally important pathway between the Diablo Range and the Santa Cruz and Gabilan Ranges can also use other undercrossings, including the U.S. 101 bridge over the Pajaro River and San Benito River, in addition to smaller culverts that apparently support substantial wildlife movement based on our 2008 study. With implementation of mitigation measures, the U.S. 101 Improvement Project would not result in substantial reduction in wildlife crossing of the highway, so those other undercrossings would continue to provide connectivity for wildlife, in areas that would be affected little (if at all) by the Sargent Ranch Quarry Project.
- The project has a life span of 30 years, after which a reclamation plan will be implemented to restore natural habitat throughout the majority of the project site. Therefore, project impacts on wildlife movement will not occur in perpetuity as would be the case if the project involved permanent development.
- The project applicant (through Verne Freeman) has provided information on a number of aspects of the site's operation that we have relied upon in assessing potential impacts to wildlife movement, and that will reduce impacts on wildlife movement to some extent. These include the following:

- Between 4:30 a.m. and 5:00 p.m., the only activity that will occur on the project site is the departure of freight cars from the rail spur. Otherwise, wildlife movement can occur without disturbance from mining-related activities for the 11.5-hour period between 5:00 p.m. and 4:30 a.m.
- Night lighting will be minimized to that necessary for site security.
- The rail spur will be long enough that the freight cars will not sit on the existing tracks, and therefore will not block the ability of animals to cross over the tracks.
- During site operations, the gate in the fencing along the railroad tracks immediately north of Tar Creek would be left open (whereas it is currently closed), thus facilitating movement of animals through that gate (albeit subject to increased traffic).

Significance determination and mitigation measures. We consider the impact of construction and operation of the main processing plant and associated features (such as the Tar Creek crossing), coupled with the project-related increase in traffic around and north of the main plant, on wildlife movement to be significant because of (1) the impact such activities will have on wildlife use of the Tar Creek/railroad undercrossing of U.S. 101, (2) the importance of this particular undercrossing to wildlife moving in an east-west or west-east direction across U.S. 101, and (3) the importance of the landscape linkage along the Pajaro River Valley to regional habitat connectivity. Implementation of the following mitigation measures will reduce this impact to less-than-significant levels by minimizing adverse impacts and facilitating movement in areas where fencing currently provides at least some impediment to wildlife movement.

Mitigation Measure A – Reduce Impact on Wildlife Movement

- The applicant will hire a qualified biologist to prepare, and will implement, a Wildlife-Compatible Fencing Plan that describes modifications that will be made to barbed wire fencing that is currently present in areas immediately surrounding the proposed main plant location. The purpose of the Wildlife-Compatible Fencing Plan will be to facilitate wildlife crossing over, under, or through the fencing, particularly in areas where broader corridors for movement around the main plant are present. Fencing that will be modified in this way includes (but is not limited to) fencing along the outer edge of the Tar Creek riparian corridor (on both sides of the creek); the eastern site boundary (along the edge of the railroad tracks), including the area north of Tar Creek adjacent to the existing residence; the southern boundary of the main plant area; and areas immediately west and northwest of the proposed main plant area that will not be occupied by mining activity. Fencing modifications may include a combination of features, depending on the location of the fencing, the types of wildlife expected to use a particular area, and whether or not a particular section of fencing is necessary to control cattle movement or human access to a particular area. Examples of modifications include removing any section of fencing that is not necessary; lowering the height of the top fencing strand; raising the height of the bottom fencing strand; using smooth (instead of barbed) wire for the top and/or bottom strands; and providing occasional segments of fencing with wooden poles instead of a top strand of wire. The Wildlife-Compatible Fencing Plan must achieve the objective of making it easier for medium and large mammals to cross through the areas around the main plant where

wildlife movement will still be able to occur following project implementation – including the area along Tar Creek and between the main plant and Tar Creek, and in areas east and south of the main plant. The Wildlife-Compatible Fencing Plan must be approved by the County and implemented prior to, or simultaneously with, the initiation of project activities on the site.

- Freight cars must be loaded during the main plant's normal operating hours (4:30 a.m. to 5:00 p.m.), and movement of the freight cars out of the plant must occur within 30 minutes or less, from the arrival of the engine and railroad personnel to the departure of the freight cars. Freight cars will not be permitted to stand on the tracks over Tar Creek; once the cars leave the on-site rail spur, they need to leave the area immediately.
- All lighting on the site, including security lighting that will remain on throughout the night and lighting that will be used during the plant's hours of operation, will be minimized in terms of intensity, height of lights, extent (i.e., dispersion around the main plant), and spillover into adjacent areas.
- Fencing at least 8 feet in height will be installed around as much of the main plant as possible (and definitely on the north side adjacent to Tar Creek and as much of the east side as is feasible with construction of the rail spur), and screening will be installed on that fencing to reduce light spillover and block physical activity (movement of people and equipment) from view of wildlife outside the main plant.
- The bridge over Tar Creek will be designed to maximize open space where wildlife can cross under the bridge (e.g., spaces between the abutments and top of bank should be left as open as possible). No new fencing will be added along the entrance road or around the bridge.

Although these mitigation measures are not expected to fully offset adverse project effects on wildlife movement (we still expect a reduction in wildlife movement through this undercrossing), we would expect enough wildlife movement through this undercrossing (with implementation of these measures) that the project-specific impact would be less than significant. If the mitigation measures described above cannot be implemented, the project-specific impact on wildlife movement would be significant and unavoidable.

Cumulative impact assessment. When viewed in combination, the Sargent Ranch Quarry Project, U.S. 101 Improvement Project, and California High-Speed Rail Project could result in cumulatively significant impacts on wildlife movement by reducing the potential for cross-valley dispersal of wildlife individuals and genes. However, these projects have potential to reduce their impacts on wildlife movement through implementation of mitigation measures. Cumulative impacts on wildlife movement from these projects will be less than significant as long as all projects are able to implement measures that reduce their project-specific impacts to less-than-significant levels. If any of these three projects cannot be designed or mitigated so that project-specific impacts are reduced to less-than-significant levels, then cumulative impacts on wildlife movement would be significant and unavoidable, and the Sargent Ranch Quarry Project would therefore contribute to that significant and unavoidable impact.

Appendix E.8

Supplement to the 2017 Sargent Ranch Quarry Biological Evaluation

ESA

LIVE OAK ASSOCIATES, INC.
an Ecological Consulting Firm

November 9, 2021

Verne Freeman
Freeman Associates
994 San Antonio Road
Palo Alto, CA 94303

Subject: Supplement to the 2017 Sargent Ranch Quarry Biological Evaluation technical report prepared by Live Oak Associates for the Sargent Ranch Quarry Project, Santa Clara County, CA (PN 662-08).

Dear Verne:

At the request of David Rader from Santa Clara County and the County's environmental consultants, Steve Rottenborn and Adrienne Graham during our phone conference of March 15, 2021, Live Oak Associates, Inc. (LOA) has prepared this supplement to the Sargent Ranch Quarry Biological Evaluation (LOA 2017).

Primarily, the purpose of this supplement is to provide habitat impact acreages not included in our 2017 biological report, related to proposed roadway improvements (Old Monterey Highway and the Highway 101 northbound access road), and the construction of a new railroad spur, and to also prepare an updated Figure 4 and Table 2 reflecting these additional impacts.

Secondarily, the County and their consultants also requested that we: 1. Prepare an updated California Natural Diversity Database figure (Figure 5); 2. Revise Coast Live Oak Forest and Woodland habitat along two of the drainage channels in the northern portion of the project site to Mixed Riparian Woodland and Forest; 3. Remove 0.15 acres of Mixed Oak Woodland from the habitat impact table; and 4. Revise the habitat figures to reflect updated project phasing, i.e. the phases have now been reversed from the time of the preparation of our original 2017 report, with Phases 1 and 2 now occurring in the northern portion of the site, and Phases 3 and 4 occurring in the southern portion of the site.

Lastly, in response to comments from David Rader in his email of October 13, 2021, it was requested that we remove the mitigation area outline from Figure 4a, as this is no longer considered a part of the project.

These revisions are discussed in greater detail below.

Roadway Improvements, Railroad Spur and Reduction of the Phase 3 Quarry Site and the Phase 3 and Phase 4 Geotechnical Setback Areas

On October 25, 2021, we received a CAD file from the project civil engineer, THA Inc., that included the roadway and railroad spur improvements, as well as revisions (i.e. reductions in size) to the Phase 3 Quarry Site and the Phase 3 and Phase 4 Geotechnical Setback areas (THA 2021). Proposed roadway improvements include improvements to Old Monterey Highway and the Highway 101 northbound access roadway, as well as a proposed northbound accelerator lane; while the proposed railroad spur will run between the processing facility and the existing railroad tracks that occur off-site to the southeast. The combined impacts of these features is 3.51 acres.

Additional habitat impacts resulting from proposed roadway improvements and a proposed railroad spur, as well as the revised impacts related to the Phase 3 Quarry Site and Phase 3 and Phase 4 Geotechnical Setback areas are reflected in the revised Table 2, below, and depicted in Figure 4a and Figure 4b included in this report. All acreage additions/revisions in the revised Table 2 are indicated in bold. *Note: The additional impacts for the roadway and railroad spur improvements have been more than offset by the reduction in acreages for the Phase 3 Quarry Site and the Phase 3 and Phase 4 Geotechnical Setback areas, which is why the revised Table 2 actually has a total of acreage impacts that is less than that in the original 2017 biological evaluation.*

The habitat impacts of the above improvements were assessed based on a field visit conducted by LOA ecologists Pamela Peterson and Davinna Ohlson on April 12, 2021. The roadway improvements will primarily impact California annual grassland (0.85 acres) and already developed areas (paved and dirt roadways, existing railroad bed, and rural residential development) (1.17 acres). However, these project elements will also result in the loss of a portion of a drainage channel along the west side of the northbound access road and a small reach of Tick Creek and an unnamed channel along Old Monterey Highway (315 linear feet of channel in total). The drainage channel along the northbound access appears to be a manmade feature and traverses through coyote brush scrub habitat. This channel is connected via a culvert under the roadway to a channel with associated willow riparian vegetation and a large wetland occurring off-site and to the east of the roadway.

One new habitat was identified within the roadway and railroad spur impact areas, i.e., coyote brush scrub, as described below.

Coyote Brush Scrub. This habitat type occurs along portions of Old Monterey Highway, on the west side of the northbound access road, and within the proposed railroad spur alignment near the existing railroad tracks. This habitat is almost exclusively dominated by coyote brush (*Baccharis pilularis*) with either a barren or California annual grassland understory, although poison oak (*Toxicodendron diversilobum*) is also associated with this habitat along the northbound access road.

Other Revisions and Updates Reflected in this Supplement BE

California Natural Diversity Database (CNDDB) Figure 5. At the County's request, we have prepared an updated Figure 5 CNDDB map since the one in the original biological report is now several years old and may not reflect all current observations, and, additionally, the format in

Table 2 (Revised May 2021): Habitats and Land Uses of the Project Site by Project Phase including Roads, Stockpile Areas, Plant Site, Roadway Improvements and Railroad Spur (in acres). Acreages that have been revised from the 2017 Biological Evaluation Table 2 are shown in bold.

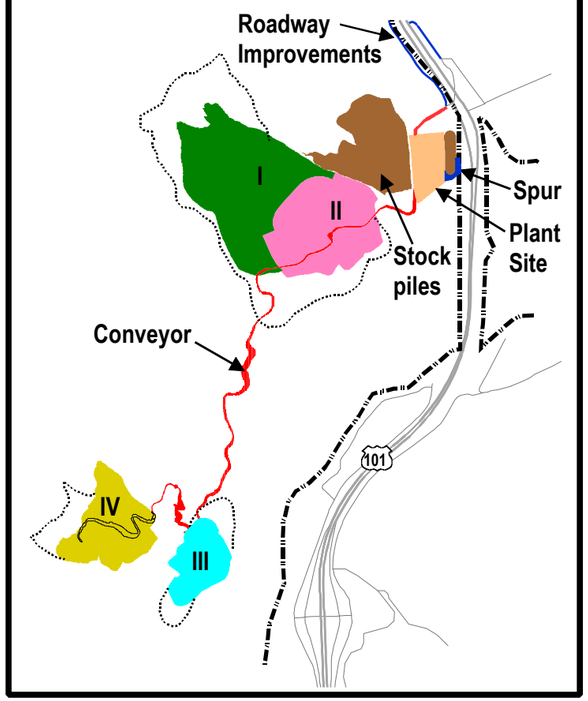
Habitats/Land Uses	Plant Site, Stockpiles, Access Roads, and Conveyor Belt	Phase 1 Acreages	Phase 2 Acreages	Phase 3 Acreages	Phase 4 Acreages	Phase 1 and Phase 2 Setback Acreages	Phase 3 Setback Acreages	Phase 4 Setback Acreages	Roadway Improvements and Railroad Spur Acreages	Total
California Annual Grassland	44.86	75.82	50.40	**25.36**	41.33	75.23	**11.95**	**11.51**	**0.85**	**337.31**
Coast Live Oak Forest and Woodland	2.88	13.30	6.48	0.00	0.00	5.78	0.00	0.00	**0.56**	**29.00**
Coyote Brush Scrub	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.25**	**0.25**
Mixed Riparian Woodland and Forest	4.32	1.45	4.89	**0.03**	0.51	0.21	0.00	0.00	**0.00**	**11.41**
Grain, Row Crop, Hay and Pasture	22.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.68**	**23.5**
Developed (dirt and paved roads, rural residential and railroad)	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**1.17**	**1.40**
Stock Pond	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	**0.00**	**0.34**
Seasonal Wetland	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	**0.00**	**0.05**
Wetland Seep	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	**0.00**	**0.03**
Total	75.11	90.57	61.77	**25.39**	41.84	81.64	**11.95**	**11.51**	**3.51**	**403.29**
Creeks, Streams and Drainages	**Linear Feet of Channel**	**Linear Feet of Channel**	**Linear Feet of Channel**	**Linear Feet of Channel**	**Linear Feet of Channel**	**Linear Feet of Channel**	**Linear Feet of Channel**	**Linear Feet of Channel**	**Linear Feet of Channel**	**Total**
Seasonal Drainages with Defined Bed and Bank (primarily HCP Category 2 streams)	1,922	1,739	2,010	0	899	115	0	0	**315**	**7,000**

Table 2: Habitats and Land Uses of the Project Site by Project Phase and Element

Habitats / Land Uses	Plant Site	Access Road	Conveyor	Stockpiles	Quarry Sites				Geotechnical Setback Areas			Roadway Improvements & Railroad Spur	Total
					Phase 1	Phase 2	Phase 3	Phase 4	Phase 1 & 2	Phase 3	Phase 4		
California Annual Grassland	0.04	0.00	13.69	31.13	75.82	50.40	25.36	41.33	75.23	11.95	11.51	0.85	337.31
Coast Live Oak Forest and Woodland	0.00	0.00	0.20	2.68	13.30	6.48	0.00	0.00	5.78	0.00	0.00	0.56	29.00
Coyote Brush Scrub	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25
Mixed Riparian Woodland and Forest	0.00	0.07	0.38	3.87	1.45	4.89	0.03	0.51	0.21	0.00	0.00	0.00	11.41
Grain, Row Crop, Hay & Pasture	14.24	0.12	0.01	8.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	23.50
Developed	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17	1.40
Stock Pond (Existing Paved & Dirt Roads, Rural Residential & Railroad)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.34
Seasonal Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.05
Wetland Seep	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.03
Total	14.28	0.42	14.29	46.13	90.57	61.77	25.39	41.84	81.64	11.95	11.51	3.51	403.29
Creeks, Streams, and Drainages	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Total**
Seasonal Drainages with Defined Bed & Bank (primarily HCP Category 2 Streams)	0.0	25	66	1,831	1,739	2,010	0.00	899	115	0.0	0.0	315	7,000

Sources:
Triad Holmes Assoc.
Santa Clara County HCP Land Cover
Santa Clara County LIDAR Topographic Survey
Pacific North Western Biological Resources Consultants, Inc. 2001.
Biological Resources Assessment for the Proposed Sargent Ranch Conservation Bank Agreement

Areas Grouped in Table Above



For Detail of Monterey Road Improvements and Hwy 101 NB Improvements See Map 4b

Phase 1
Phase 2
Phase 3
Phase 4
Permanent Overburden Stockpile
Access Rd
Processing Plant
Stockpile
Rail Spur
S Valley Fwy
Sargent Creek
Property Boundary
Betabel Rd
Y Rd
101
El Camino Real

LEGEND
- Geotechnical Setback Area Boundaries
- California Annual Grassland
- Coast Live Oak Forest and Woodland
- Coyote Brush Scrub
- Grain, Row-crop, Hay & Pasture,
- Mixed Oak Woodland & Forest
- Mixed Riparian Woodland & Forest
- Northern coastal Scrub / Diablan Sage Scrub
- Northern Mixed Chaparral / Chamise Chaparral
- Wetland Seep
- Seasonal Wetland
- Stock Pond
- Drainages with Defined Bed and Bank

2,000' 0 1,000' 2,000 feet
Approximate Scale

Live Oak Associates, Inc.

Sargent Ranch Quarry
Proposed Mining Sites & Roads
Biotic Habitats

Date	Project #	Figure #
11/09/2021	662-08	4a

Sources:
Triad Holmes Assoc.
Santa Clara County HCP Land Cover
Santa Clara County LIDAR Topographic Survey
Pacific North Western Biological Resources Consultants, Inc. 2001.
Biological Resources Assessment for the Proposed Sargent Ranch Conservation Bank Agreement

2,000' 0 1,000' 2,000 feet
Approximate Scale

N

Hwy 101

Property Boundary

Property Boundary

Phase 1 Setback

Overburden Stockpile

Processing Plant

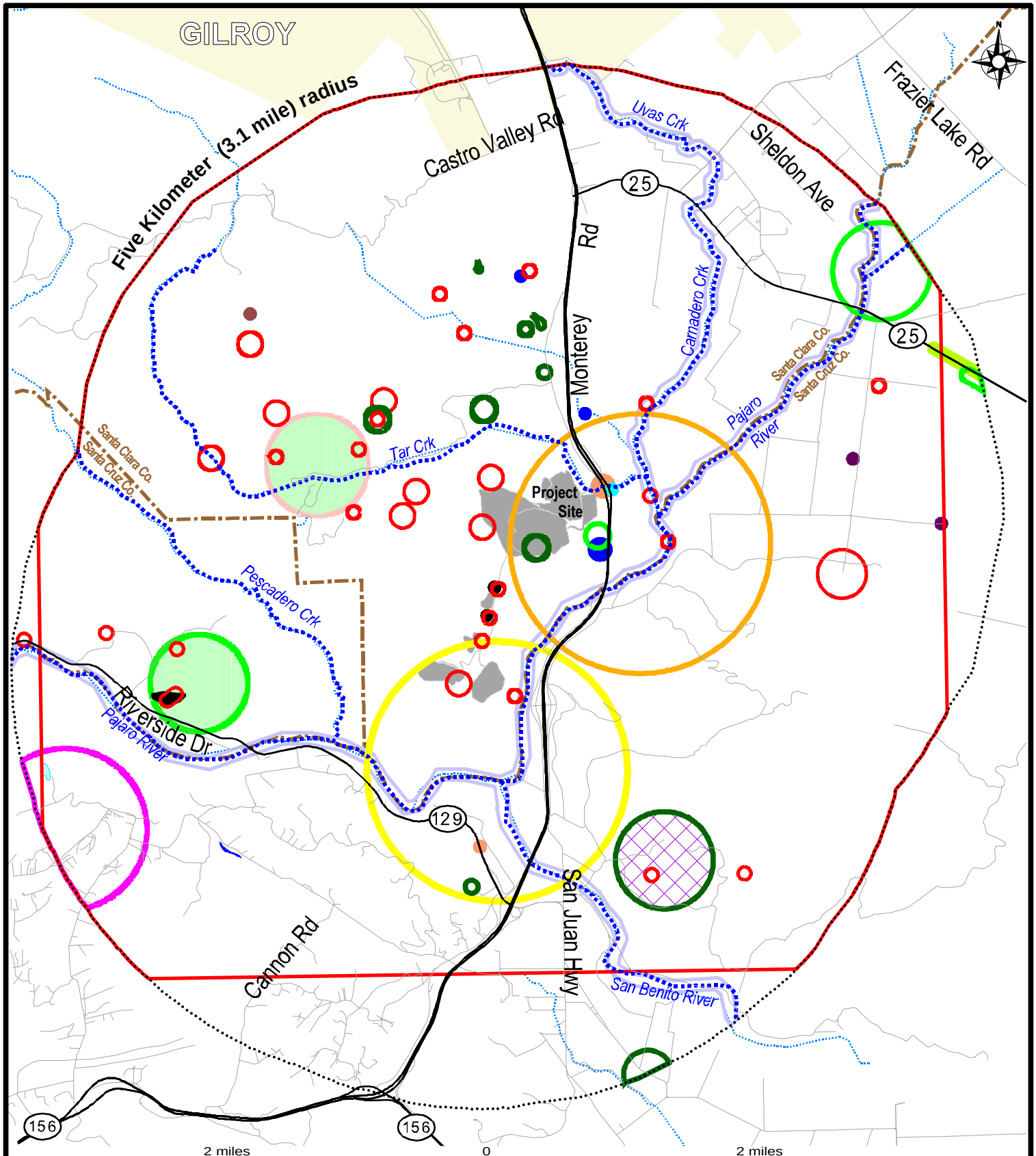
LEGEND

- Approximate Area of Potential Effects
- California Annual Grassland
- Coyote Brush Scrub
- Developed (existing paved & dirt roads, rural residential, & railroad)
- Grain, Row-crop, Hay & Pasture, Disked/Short-term Fallowed
- Drainages with Defined Bed and Bank

Live Oak Associates, Inc.

Sargent Ranch Quarry
Roadway Improvements
Biotic Habitats

Date	Project #	Figure #
11/04/2021	662-08	4b



LEGEND

Special-status Species Observations
(Polygon extents can reflect location uncertainty)

- Pink creamsacs
- American badger
- California Alkali grass
- California red-legged frog
- California tiger salamander
- Hoover's button-celery
- Monterey hitch
- Bank swallow
- Burrowing owl
- Fragrant fritillary
- Least Bell's vireo
- Most beautiful jewelflower
- Saline clover
- Steelhead
- Tricolored blackbird
- Western pond turtle

U.S.F.W.S. Critical Habitat

- Steelhead

Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service

Live Oak Associates, Inc.

Sargent Ranch Quarry
Special-status Species

Date	Project #	Figure #
3/18/2021	662-08	5

which CNDDB information is mapped has also changed since 2017, with the use of polygons to reflect CNDDB observations rather than point locations in most situations.

Revisions to Habitat Types and Acreages. We edited the Figure 4a table to remove 0.15 acres of Mixed Oak Woodland habitat as this was an error in the table. At the request of Steve Rottenborn, we also re-classified Coast Live Oak Woodland and Forest along two drainages in the northern portion of the project site (Phases 1 and 2) to Mixed Riparian Woodland and Forest.

Revisions to Project Phasing. We have revised Figure 4 (now Figure 4a and 4b) to reflect changes in project phasing, as the project phasing has been reversed since our 2017 biological report was prepared.

Removal of Mitigation Area Outline from Figure 4a. We have removed the mitigation area outline from Figure 4a based on comments from Mr. Nader in his October 13, 2021, email because this mitigation is no longer a part of the project.

Please feel free to contact me at ppeterson@loainc.com or Rick Hopkins at rhopkins@loainc.com if you wish to discuss any of the above.

Sincerely,

Pamela Peterson
Senior Project Manager