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Comprehensive Biological Survey Report

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Reclaimed Wind LLC

Viracocha Hill Battery Energy Storage System

October 2, 2025



Comprehensive Biological Survey Report

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Acronyms and Abbreviations

°F	degrees Fahrenheit
ARDR	Aquatic Resources Delineation Report
BESS	battery energy storage system
BSA	biological study area
Cal-IPC	California Invasive Plant Council
CALVEG	Classification and Assessment with LANDSAT of Visible Ecological Groupings
CDFW	California Department of Fish and Wildlife
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
iPaC	Information for Planning and Consultation
MCV	Manual of California Vegetation
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NVCS	National Vegetation Classification Standard
NWI	National Wetlands Inventory
OHWM	ordinary high water mark
Project	Viracocha Hill Battery Energy Storage System
SHTAC	Swainson's Hawk Technical Advisory Committee
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1. Introduction

This comprehensive report provides methods and results for protocol-level rare plant surveys, invasive weed surveys, land cover mapping, reconnaissance and initial wildlife surveys and habitat assessments, protocol-level burrowing owl (*Athene cunicularia hypugaea*) surveys, protocol-level Swainson's hawk (*Buteo swainsoni*) surveys, focused eagle nest surveys, and an aquatic resource delineation for the proposed Viracocha Hill Battery Energy Storage System (BESS) Project (Project). Jacobs completed surveys within the biological study area (BSA), which encompasses the approximately 25-acre Project footprint plus a 500-foot buffer, totaling approximately 103.31 acres. Additional buffers were applied in accordance with species-specific survey protocols, as described in Section 2.1.

The purpose of the surveys was to determine the presence or absence of special-status plant and wildlife species, invasive plant species, and aquatic resources within the BSA.

1.1 Project Location

The Project will be located in unincorporated eastern Alameda County, California, on a 443-acre parcel (APN 99B-7300-1-5) located within the APWRA in the Altamont Pass, approximately 0.8 mile south of the Bethany Reservoir, 1.8 miles north of Altamont Pass Road, and 4.7 miles northwest of the city limits of Tracy, California (Figure 1-1). The Project footprint is located north of Interstate 580, along Altamont Pass Road, east of Livermore, and west of Mountain House. Site access is available from Altamont Pass Road (primary entrance) or Mountain House Road.

The Project is in the Clifton Court Forebay U.S. Geological Survey (USGS) 7.5-minute quadrangle and in California Public Land Survey Township 2 South, Range 3 East, Section 11.

1.2 Project Description

Project components include a proposed BESS equipment yard, substation, access road improvements, and a 230-kV gen-tie line to the Ralph Substation (Figure 1-2). If expansion of the Ralph Substation is not feasible, an alternative substation station or line-tap will be constructed nearby. The exact design and location of these features will be refined as the Project progresses.

1.3 Regional Setting

The Project is located within the Eastern Hills ecological subsection of the Central California Coast Range Section consisting of hills and low mountains in the drier eastern and southeastern parts of the Diablo Range, including some hills south of that range (Miles and Goudey 1998). This ecological subsection stretches from east of the Livermore - San Ramon Valley south-southeast to the Cholame Valley. This region is generally characterized by rolling foothills of annual grassland; the mostly treeless region is steeper on the west and flatter to the east where it slopes toward the floor of the Central Valley. The Project is in the U.S. Department of Agriculture's Major Land Resources Area – 15 (Central California Coast Range within the Land Resource Region C – California Subtropical Fruit, Truck, and Specialty Crop Region) (Natural Resources Conservation Service [NRCS] 2022).

Historically, the area surrounding the Project had been used for cattle ranching during the twentieth century, and several generations of wind development projects have co-occupied the area. The Project is located within a region characterized by high velocity and reliable winds, which are generated by the regional differences in temperature between the marine influenced air of the San Francisco Bay Area and

the inland areas east of the Diablo Range. This region has been prioritized for wind energy development for several decades.

1.4 Project Setting

The Project is located between Altamont Pass Road to the south and Bethany Reservoir and the California Aqueduct to the north. The Golden Hills North wind energy facility borders the Project on its western side.

Land use in the BSA and surrounding area consists largely of cattle-grazed land on which operating wind turbines or associated ancillary facilities are installed. The Project generally consists of annual grassland with scattered stock ponds and ranch infrastructure such as cattle pens and barbed wire fencing that dot the landscape. The remnants of a previous wind energy facility remain on the site including concrete foundations and rock stockpiles patchworked within the annual grassland.

Elevations in the Project area range from approximately 300 to 660 feet above mean seal level. Slopes in the BSA range from 0% to greater than 45% along portions of decommissioned wind facilities.

1.5 Environmental Setting

This section describes the regional environmental setting of the Project, including land cover, climate, and soils.

1.5.1 Land Cover

The regional land cover is primarily characterized by annual grasslands, with patches of coastal scrub, blue oak woodlands, and riparian vegetation along streams. Land cover specific to the BSA will be discussed further in Section 3.2.

1.5.2 Climate and Hydrology

Regionally, the climate is hot and subhumid to arid (Miles and Goudey 1998). Mean annual temperatures range from 50 to 60 degrees Fahrenheit (°F) (Miles and Goudey 1998). According to the U.S. Army Corps of Engineers (USACE) Antecedent Precipitation Tool the site received an annual average of 11.8 inches of rain over a 30-year period (USACE 2025b).

Runoff in the region is generally rapid, and all but the larger streams and ponded features are dry through most of the summer. There are no natural lakes in the area, but there are a few constructed reservoirs and stock ponds. Precipitation deposited in this watershed flows northeast into Bethany Reservoir or the Clifton Court Forebay (USGS 2025b).

1.5.3 Soils

The soils regionally tend to originate from sedimentary bedrocks of the Franciscan Complex and the Great Valley Sequence (Miles and Goudey 1998). Regionally, soil temperature regimes are thermic, and soil moisture regimes are mostly xeric. More specifically, soils in the BSA have been mapped by the NRCS as Altamont clay and San Ysidro (NRCS 2025a) (Figure 1-3). Of these soil types, the Altamont clay series dominates the study area. This soil displays medium to very high runoff, low permeability, and fast drainage. Table 1-1 summarizes the soil series mapped within the BSA (NRCS 2025b).

Table 1-1. Mapped Soil Series within Biological Study Area and Vicinity

Type/Series	Surface Texture	Landscape Position and Parent Material	Drainage and Permeability
Altamont	Clay	The Altamont series consists of deep, well drained soils that formed in material weathered from fine-grained sandstone and shale. These soils are on gently sloping to very steep uplands.	▪ Runoff is medium to very high ▪ Permeability is slow ▪ Well drained
San Ysidro	Fine sandy loam	The San Ysidro series consists of very deep, moderately well drained soils that formed in alluvium from sedimentary rocks. San Ysidro soils are on fan remnants and stream terraces and have slopes of 0 to 9%.	▪ Runoff is slow to medium ▪ Permeability is very slow ▪ Moderately well drained



Legend

Biological Study Area (BSA) (103.31 acres)

Source:
1) ESRI Aerial Images

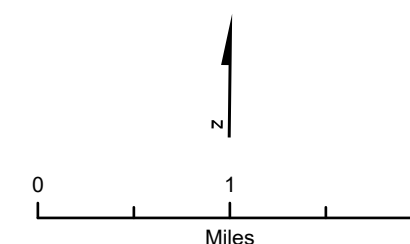
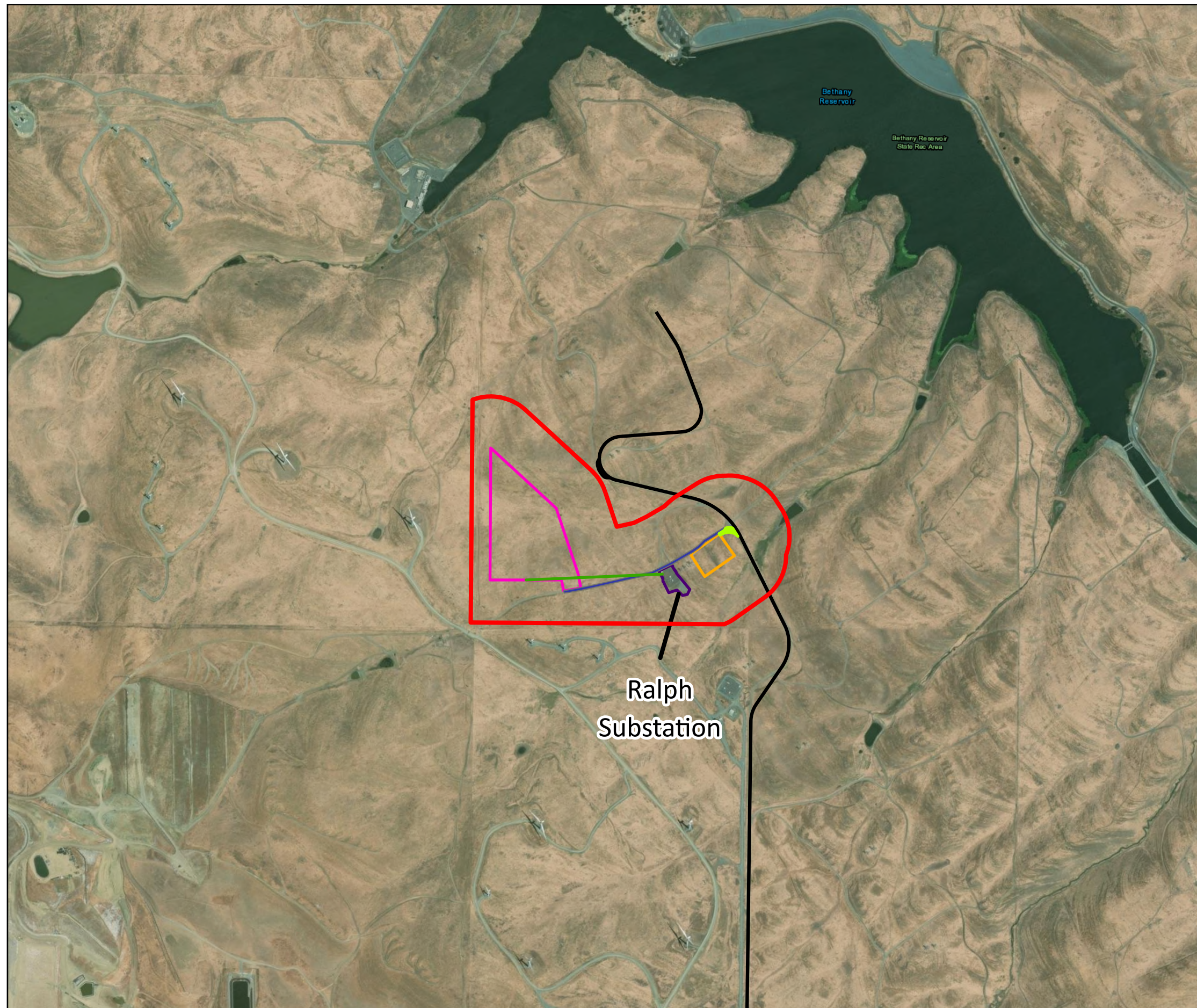


Figure 1-1
Project Location
Viracocha Hill BESS: Comprehensive Biological Survey Report
Alameda County, California

Jacobs



Legend

- 500-ft Biological Study Area
- Proposed 230-kV Gen-Tie
- Proposed Access Road Widening Area
- Proposed Improvements to Existing Access Road
- Proposed Alternate Substation Area
- Ralph Substation
- Proposed Viracocha BESS Equipment Yard
- Wind Farm Road (No Improvements)

Source:
1) ESRI Aerial Images

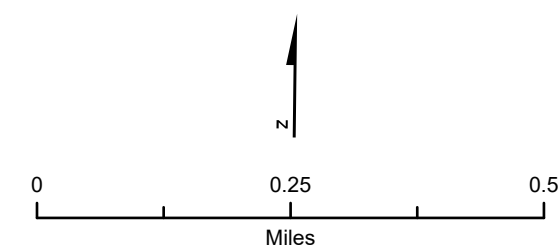
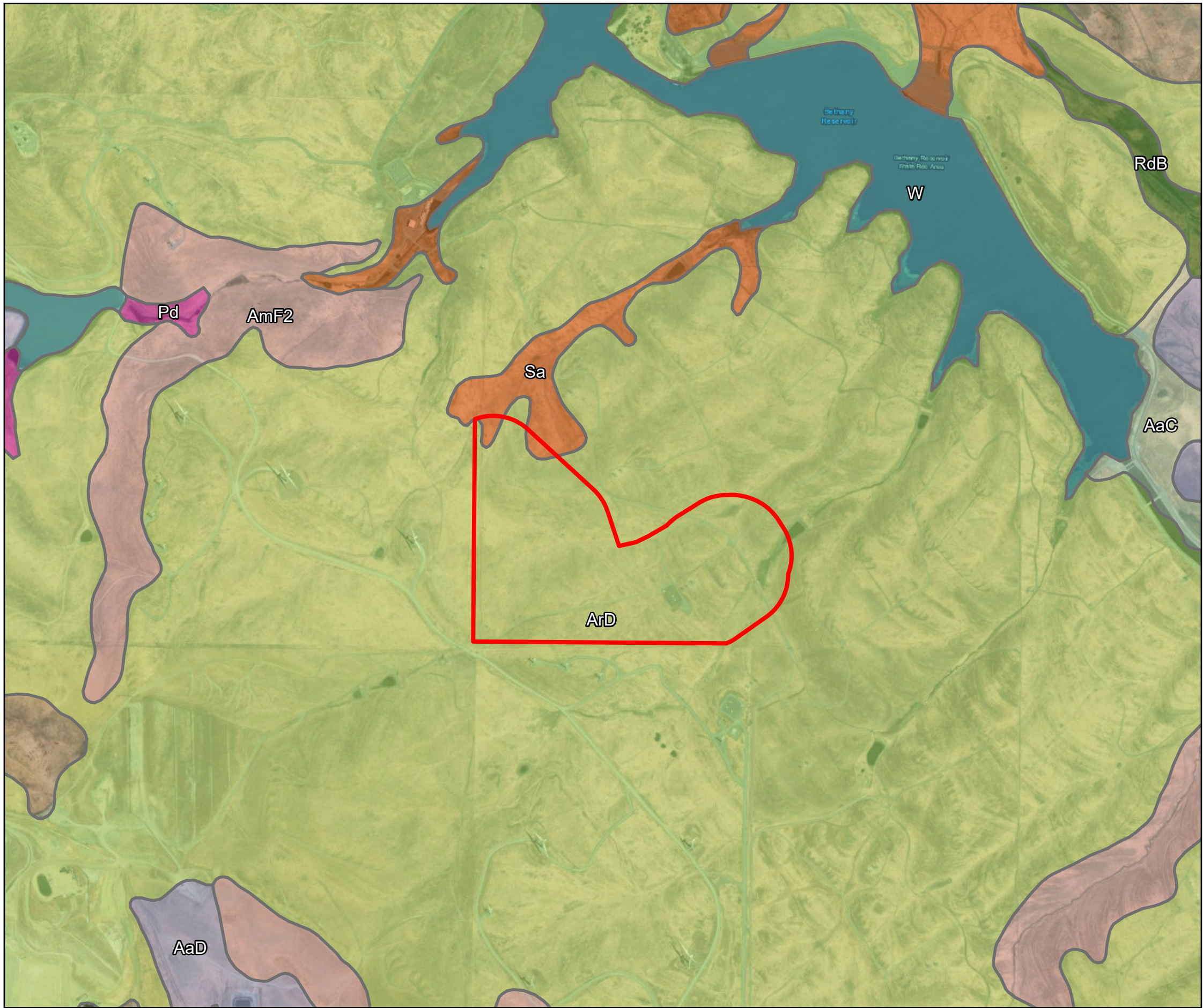


Figure 1-2
Project Components
Viracocha Hill BESS: Comprehensive
Biological Survey Report
 Alameda County, California

Jacobs



- Legend
- Biological Study Area (BSA) (103.31 acres)
- Soil Map Unit and Description
- AaC - Altamont clay, 3 to 15 percent slopes
 - AaD - Altamont clay, 15 to 30 percent slopes, MLRA 15
 - AmF2 - Altamont clay, moderately deep, 45 to 75 percent slopes, eroded
 - ArD - Altamont rocky clay, moderately deep, 7 to 30 percent slopes
 - Pd - Pescadero clay loam, 0 to 6 percent slopes, MLRA 14
 - RdB - Rincon clay loam, 3 to 7 percent slopes
 - Sa - San Ysidro loam, 0 to 2 percent slopes, MLRA 14
 - W - Water

Source:
1) ESRI Aerial Images

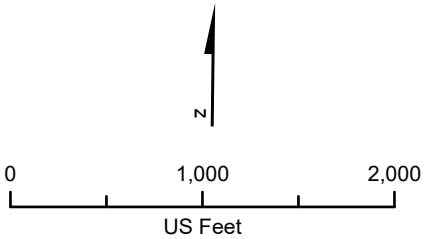


Figure 1-3
NRCS Soil Map Units
Viracocha Hill BESS: Comprehensive Biological Survey Report
 Alameda County, California



2. Methods

This section describes the desktop and literature review and field survey methodologies for protocol-level rare plant surveys, invasive weed surveys, land cover mapping, reconnaissance and initial wildlife surveys and habitat assessments, protocol-level burrowing owl surveys, protocol-level Swainson's hawk surveys, focused eagle nest surveys, and an aquatic resource delineation.

2.1 Biological Study Area

The BSA is defined as the Project footprint plus an additional 500-foot buffer, which was utilized for special-status plants surveys, invasive plant surveys, and land cover mapping. Additional survey buffers were applied to the Project footprint in accordance with survey requirements: a 1-mile land cover buffer, a 547-yard buffer for burrowing owl, a 0.5-mile buffer was used for Swainson's hawk, and a 2-mile buffer for eagle surveys.

2.2 Literature and Desktop Review

Literature and database reviews were conducted prior to field site visits to investigate the potential presence of sensitive resources, special-status species, and critical habitats within the BSA and vicinity. Information on resources in the BSA and vicinity and a list of special-status plant and wildlife species with potential to occur in the BSA and vicinity were developed by querying the following public databases and reference materials:

- The California Natural Diversity Database (CNDDDB) was queried for occurrences of special-status wildlife and plant species within 10 miles of the BSA (CDFW 2025a).
- The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) database was queried to determine which federally listed species could potentially occur in the BSA (USFWS 2025b).
- The California Native Plant Society (CNPS) Rare Plant Inventory was queried for the Clifton Court Forebay USGS quadrangle and the following eight USGS quadrangles that directly surround the BSA: (1) Brentwood, (2) Woodward Island, (3) Holt, (4) Union Island, (5) Tracy, (6) Midway, (7) Altamont, and (8) Byron Hot Springs (CNPS 2025a).
- The USFWS National Wetlands Inventory (NWI) database and the USGS National Hydrography Dataset (NHD) were queried for information regarding aquatic resources and aquatic habitat (USFWS 2025a; USGS 2025a). Results are in Figure 2-1.
- The National Resource Conservation Service (NRCS) Web Soil Survey 2.0 and Official Soil Series Descriptions were queried for information regarding soils within the BSA (NRCS 2025a; NRCS 2025b).
- eBird database was queried for sightings and range maps for special-status bird species (eBird 2025).
- iNaturalist data were queried for research grade sightings and range maps for special-status wildlife and plant species (iNaturalist 2025).
- Aerial imagery was reviewed to examine aquatic resources and habitats for special-status species within and adjacent to the BSA (ESRI 2025).

For the purposes of this discussion, a plant or wildlife species was considered special status if it met one or more of the following criteria:

- Species listed as threatened, endangered, or candidate for listing under the federal Endangered Species Act

- Species listed as threatened, endangered, candidate, or that have special requirements under the California Endangered Species Act
- Other species listed by California Department Fish and Wildlife (CDFW) as Fully Protected (FP), Species of Special Concern (SSC), or Watch List (WL) on CDFW's *Special Animals List* (CDFW 2025b)
- Species listed by the CNPS California Rare Plant Rank (CRPR) List 1 to 4 in its *Inventory of Rare and Endangered Plants of California* (CNPS 2025)

The potential for special-status species to occur within the BSA and vicinity was determined using the results of the desktop and literature review. A species was determined to have potential to occur if there was a nearby CNDDDB occurrence record (CDFW 2025b), if its known or expected geographic range includes the BSA or the vicinity of the Project, and if its known or expected habitat is present within or near the BSA. A table summarizing these plant species is included in Appendix A, and a table for wildlife species is included in Appendix B.

Jacobs biologists evaluated and ranked the potential for each special-status species to occur according to the following criteria:

- **Absent:** The species is not present in the BSA, either because it is outside the known range of the species, or because habitat in and adjacent to the BSA is unsuitable for the species' life history requirements (for example, foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, and disturbance regime).
- **Low Potential:** Few of the habitat components meeting the species requirements are present, and the majority of habitat in and adjacent to the BSA is unsuitable or of marginal quality to support the species' life history requirements. The species is not likely to be found in the BSA. Either there are no recorded observations of species in the vicinity, or the records were historical.
- **Moderate Potential:** Some of the habitat components meeting the species requirements are present, and only some of the habitat in or adjacent to the BSA is unsuitable. The species has a moderate probability of being found within the BSA. Recorded observations of this species are current (within the past 25 years), and it may be present in the vicinity.
- **High Potential:** The species is likely to occur within the BSA but has not been observed to date. The habitat components meeting the species requirements are present and most of the habitat in or adjacent to the BSA is highly suitable. The species has a high probability of being found within the BSA. Recorded observations of this species are current and present in the vicinity.
- **Present:** The species has been observed within the BSA or in the vicinity of the BSA during biological resource surveys with varying survey buffer sizes depending on the species.

The USFWS NWI, USGS, NHD, NRCS soil maps, and USGS topographic maps were also queried to determine the location of potential wetlands and other water resources potentially occurring within the BSA (USFWS 2025b, NRCS 2025a, USGS 2025a, USGS 2025b).

2.3 Field Surveys

The following surveys were conducted:

- Protocol-level rare plant surveys
- Invasive plant surveys
- Land cover mapping
- Reconnaissance-level wildlife survey and initial habitat assessment
- Protocol-level western burrowing owl surveys: nonbreeding and breeding season surveys
- Protocol-level Swainson's hawk surveys

- Focused bald and golden eagle (*Haliaeetus leucocephalus* and *Aquila chrysaetos*) nesting surveys
- Aquatic resource delineation

Table 2-1 provides the dates, personnel, and description of surveys conducted by Jacobs biologists to support the Project.

Table 2-1. Biological Survey and Aquatic Resource Delineation Field Work Completed to Date

Dates	Personnel	Survey Type
November 7, 2024	Brian Lee, Scott Lindemann, Kyle Brown, Sean O'Neil	Reconnaissance-level wildlife survey and reconnaissance-level habitat assessment survey
December 11, 2024	Scott Lindemann and Sean O'Neil	Protocol-level nonbreeding season burrowing owl survey
February 25 and 26, 2025	Kyle Brown and Greg Davis	Protocol-level botanical surveys, land cover mapping, and invasive plant surveys
March 18, 2025	Pim Laulikitnont-Lee and Greg Davis	Aquatic resources delineation
March 20 and 28, and April 3, 14, 16, and 18, 2025	Scott Lindemann, Sean O'Neil, Sunny Lee, Rachel Cotroneo, and Samuel Wentworth	Protocol-level Swainson's hawk surveys, and concurrent focused eagle surveys
April 8, May 14, June 4, and June 26, 2025	Scott Lindemann, Sean O'Neil, Sam Wentworth, Gabrielle Smith, Andrew Montriell, and Holly Barbare	Protocol-level breeding season burrowing owl surveys
April 3, 2025	Sam Young and Greg Davis	Protocol-level botanical surveys, land cover mapping, and invasive plant surveys
May 16, 2025	Sam Young and Greg Davis	Protocol-level botanical surveys, land cover mapping verification, and invasive plant surveys
July 24 and 25, 2025	Sam Young and Greg Davis	Protocol-level botanical surveys, rapid assessment vegetation classification, and invasive plant surveys
September 11, 2025	Sam Young and Greg Davis	Protocol-level botanical surveys and invasive plant surveys

2.3.1 Protocol-level Rare Plant Surveys

Jacobs biologists conducted protocol-level rare plant surveys within the BSA during appropriate blooming period (Table 2-1). Rare plant survey methods were floristic in nature and followed CDFW (CDFW 2018) and USFWS protocols (USFWS 1996). All taxa were identified to the taxonomic level necessary to determine whether they are a special-status plant species. Common plant names were taken from the *Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California* (Jepson Flora Project 2025). Common plant names not provided in the Jepson eFlora list were taken from Calflora (Calflora 2025). Surveys were conducted throughout 2025 during the periods of identifiable phenology for potentially occurring special-status plant species.

Data were recorded digitally and on hard copy in field notebooks. Digital data were collected on iOS devices with the FieldMaps application on the Arc Geographic Information System (ArcGIS) Online platform. Botanists conducted pedestrian surveys of potentially suitable habitat for special-status plants.

2.3.1.1 Special-Status Plant Reference Population Visits

Jacobs botanists visited special-status plant reference site populations for species, where accessible, to confirm that the surveys were conducted at a time of year when species would be apparent and identifiable (CDFW 2018; USFWS 1996). Reference populations of alkali milk-vetch (*Astragalus tener* var. *tener*), big tarplant (*Blepharizonia plumosa*), brittlescale (*Atriplex depressa*), California rockjasmine (*Androsace elongata* ssp. *acuta*), caper-fruited tropidocarpum (*Tropidocarpum capparideum*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), crownscale (*Atriplex coronata* var. *coronata*), lesser saltscale (*Atriplex minuscula*), long styled sand spurrey (*Spergularia macrotheca* var. *longistyla*), palmate-bracted bird's-beak (*Chloropyron palmatum*), recurved larkspur (*Delphinium recurvatum*), San Joaquin spearscale (*Extriplex joaquiniana*), and stinkbells (*Fritillaria agrestis*) were visited during presumed peak bloom. Only alkali milk-vetch, caper-fruited tropidocarpum, Congon's tarplant, lesser saltscale, long styled sand spurrey, and palmate-bracted bird's-beak were observed at their respective reference populations in either flower or fruit.

2.3.1.2 Invasive Plant Surveys

Jacobs biologists conducted invasive plant surveys within the BSA concurrently with the botanical surveys (Table 2-1). For purposes of this survey, invasive plant species are defined as moderate or high by the California Invasive Plant Council (Cal-IPC 2025). Invasive plant species are tracked and ranked by threat to natural communities by the Cal-IPC. Target invasive species ranked moderate or high (excluding nonnative annual grasses rough cat's-ear [*Hypochaeris radicata*], black mustard [*Brassica nigra*], and shortpod mustard [*Hirschfeldia incana*] which are regionally ubiquitous) were mapped for baseline cover, which serves as a benchmark for restoring temporary impact areas. Target invasive plant species localities, defined as locations where one or more individuals were detected, were documented digitally and on hard copy datasheets, using the same methods described earlier for the botanical surveys.

2.3.1.3 Land Cover Mapping

The CNPS Vegetation Rapid Assessment Protocol (CNPS 2007) was utilized to map land cover types within the BSA. Land cover within the BSA was mapped at the alliance level, where applicable, using the Manual of California Vegetation (MCV) classification system (Sawyer et al. 2009).

Jacobs biologists conducted land cover mapping surveys within the BSA on July 24, 2025 (Table 2-1). These surveys were supported by GIS areal imagery interpretations that were to be verified with observations from concurrent botanical surveys. Contiguous and/or representative vegetation communities within the BSA were characterized and mapped during surveys using rapid assessment data forms. General land cover types were assigned to areas lacking vegetative cover, including disturbed/ruderal areas and open water.

In addition to the rapid assessment of MCV alliances within the BSA, a 1-mile buffer of the BSA was evaluated to classify surrounding land cover. Land cover within this buffer was assessed using the U.S. Department of Agriculture (USDA)-Forest Service CALVEG Existing Vegetation: Region 5 – Central Coast dataset (CALVEG 2018) paired with field observations where accessible. The land cover surrounding the BSA was mapped based on the National Vegetation Classification Standard (NVCS).

2.3.2 Reconnaissance-Level Wildlife Survey and Initial Habitat Assessment

Jacobs biologists conducted a reconnaissance-level wildlife survey and habitat assessment within the BSA to assess habitat potential for special-status wildlife species identified during desktop reviews. Each species' habitat preferences and requirements, which were considered during the initial survey, are listed below. Data on general habitats and microhabitats suitable for special-status species was recorded digitally and on hard copy in a field notebook. Digital data was collected on iOS devices with the FieldMaps application on the ArcGIS Online platform. The Merlin bird song app was also used (Cornell Lab of Ornithology 2025).

2.3.2.1 California Red-legged Frog

The California red-legged frog (*Rana draytonii*) requires aquatic breeding habitat that holds water for a minimum of 20 weeks in all but the driest of years (USFWS 2010a), as well as nearby upland habitat for refugia, foraging, and dispersal. It is found in a broad range of ecological settings, from coastal dunes and estuaries to riparian areas at desert margins (Hansen and Shedd 2025).

The BSA is located entirely within designated critical habitat for California red-legged frog (Unit ALA-2).

2.3.2.2 California Tiger Salamander

The California tiger salamander (*Ambystoma californiense*) is found in California's grasslands, often on gently rolling terrain underlain by clay soils that support the formation of vernal pools in the rainy season (Hansen and Shedd 2025). It requires aquatic breeding habitat with nearby upland habitat with small mammal burrows.

2.3.2.3 Western Spadefoot

The Western spadefoot (*Spea hammondi*) is primarily found in small mammal burrows and soil cracks within open landscapes such as the grassland vernal pool ecosystems, desert scrub, and coastal sage scrub, but is also found in chaparral or oak woodland (Hansen and Shedd 2025). It is remarkably flexible in its aquatic breeding habitat requirements and breeding timing.

2.3.2.4 Northwestern Pond Turtle

The northwestern pond turtle (*Actinemys marmorata*) is found in a variety of permanent and intermittent waters including streams, creeks, ponds, lakes, sloughs, marshes, and human created impoundments such as wastewater treatment ponds (Hansen and Shedd 2025). It may also be found in seasonal creeks that by midsummer are reduced to a series of pools or even dry out entirely. Females use upland areas with loose soils adjacent to suitable aquatic habitats to nest.

2.3.3 Other Special-Status Reptiles, Including San Joaquin Coachwhip, California Glossy Snake, and Blaineville's Horned Lizard

These three special-status reptile species are combined due to their shared life history strategies including their preference for arid areas.

The San Joaquin coachwhip (*Masticophis flagellum ruddocki*) is found in arid habitats, especially found in desert washes and arroyos with plentiful lizard prey species, but also encountered in arid grassland and riparian areas (Hansen and Shedd 2025). The BSA is entirely within the species' known extant range (Hansen and Shedd 2025).

The California glossy snake (*Arizona elegans occidentalis*) is found mostly on sandy substrates in coastal sagebrush and grassland communities, as well as a variety of habitat types in the Mojave and Colorado deserts (Hansen and Shedd 2025). This subspecies of the glossy snake is found in western and southern San Joaquin Valley, south to the US-Mexico border; the BSA is entirely within the species' known extant range (Hansen and Shedd 2025).

The Blaineville's horned lizard (*Phrynosoma blainvilli*) is typically found in open grasslands, chaparral, and coastal sage scrub vegetation communities with friable sandy soils or rodent burrows (Hansen and Shedd 2025). Recent range maps show the BSA is just outside of their known extant range (Hansen and Shedd 2025).

2.3.4 Other Special Status Species and Grassland Nesting Birds, Including Northern Harrier, Short-eared Owl, California Horned Lark, and Grasshopper Sparrow

These special-status bird species are combined due to their shared behavior of nesting on the ground in grasslands.

Short-eared owls (*Asio flammeus*) are found in a variety of open habitats including grasslands, marshes, lowland meadows, and irrigated alfalfa fields (CDFW 2025a). Like the short-eared owl, northern harriers (*Circus hudsonius*) are also raptors and have similar habitat requirements but are more often found in marshy areas (CDFW 2025a). California horned larks (*Eremophila alpestris actia*) are a subspecies of the horned lark, and are found in open habitats including grasslands, mountain meadows, open coastal plains, fallow grain fields, and alkali flats (CDFW 2025a). Grasshopper sparrows (*Ammodramus savannarum*) are found in grassland habitats, preferring native grasslands with a mix of grasses, forbs, and scattered shrubs (CDFW 2025a).

2.3.4.1 Tricolored Blackbird

Tricolored blackbirds (*Agelaius tricolor*) inhabit a variety of wetland and upland habitats, requiring open water, protected nesting substrate, and foraging areas with insect prey (CDFW 2025a). They are highly colonial and have been reported to breed in groups exceeding 100,000 nests (Shuford and Gardali 2008).

Jacobs biologists led a tricolored blackbird habitat assessment during the initial reconnaissance survey and concurrently with other protocol-level and focused avian surveys (Table 2-1).

2.3.4.2 Loggerhead Shrike

Loggerhead shrikes (*Lanius ludovicianus*) are found in a variety of open habitats including scattered woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub, and washes (CDFW 2025a). They may also be found in grassland habitats with some shrubby patches present.

2.3.4.3 White-tailed Kite

White-tailed kite (*Elanus leucurus*) is found foraging for small vertebrate species in a variety of open habitats including grasslands, meadows, or marshes (CDFW 2025a). It requires isolated, dense-topped trees for nesting and perching.

2.3.4.4 American Badger

American badgers (*Taxidea taxus*) are found in a variety of habitats, preferring drier open areas of most shrub, forest, and herbaceous habitats, with friable soils for denning (CDFW 2025a).

2.3.4.5 San Joaquin Kit Fox

San Joaquin kit fox (*Vulpes macrotis mutica*) occurs in a variety of habitats but prefers grasslands with scattered shrubs. This species may also occur in agricultural areas and in urban areas as long as there are dispersal corridors to suitable denning and foraging sites. San Joaquin kit fox appear to have adapted to living in marginal areas such as grazed, non-irrigated grasslands; peripheral lands adjacent to tilled and fallow fields; irrigated row crops, orchards, and vineyards; and petroleum fields and urban areas (USFWS 1998). They typically prefer low relief areas (USFWS 2010b).

2.3.4.6 Townsend's Big-eared Bat, Pallid Bat, and Other Roosting Bats

These species are combined due to their shared life history strategies including their requirements for "cave-type" structures for roosting, their ability to fly, and their insectivorous diet.

Townsend's big-eared bat (*Corynorhinus townsendii*), pallid bat (*Antrozous pallidus*), and other non-listed bat species including myotis species (*Myotis* spp.) are all considered to be "cave-hibernating bats," comprising species that undergo torpor and overwinter in caves, mines, and other sheltered areas that have low but stable temperatures (AWWI 2018). Townsend's big-eared bat and pallid bat are found in a variety of open habitats with rocky areas for roosting, including deserts, grasslands, shrublands, woodlands and forests (CDFW 2025a). Most North American bat species are insectivorous, typically using echolocation to find and capture flying insect prey (AWWI 2018).

Surveyors focused on primarily assessing the potential for human-made structures within the Ralph Substation to support bat roosting.

2.3.4.7 Crotch's Bumble Bee

The Crotch's bumble bee (*Bombus crotchii*) was once the predominant pollinator in northern California's Central Valley, but now appears to be largely absent from it, especially in the center of its historic range (Hatfield et al. 2014). Crotch's bumble bees nest underground in scrub grassland habitats (Williams et al. 2014). Crotch's bumble bee is considered to be a generalist forager with individuals foraging at sages (*Salvia* spp.), lupines (*Lupinus* spp.), medics (*Medicago* spp.), phacelias (*Phacelia* spp.), and milkweeds (*Asclepias* spp.; Hatfield et al. 2018). Little is known about the overwintering sites or hibernacula of this species; however, it is reported that Crotch's bumble bee generally overwinter under debris or litter piles in soft, disturbed soils (Williams et al. 2014).

Floral resource composition and coverage assessments to inform foraging habitat suitability for Crotch's bumble bee were documented by Jacobs biologists during subsequent plant surveys.

2.3.4.8 Monarch Butterfly

In early spring, the western population of Monarchs travels from overwintering sites, consisting of coastal stands of pine and eucalyptus trees, in Mexico and along the California coast to breeding ranges in California, Nevada, Oregon, Washington, Arizona, and Idaho; with the onset of fall, the newest generations of Monarchs make the journey back to their overwintering sites (Xerces Society 2018). Within California, Monarch butterflies use overwintering sites along the Pacific coast. Adult Monarchs are generalists and feed on the nectar of a variety of flowering plants, although the species requires milkweed (*Asclepias* spp.) as a larval host plant for reproduction (Xerces Society 2018).

2.3.5 Protocol-Level Burrowing Owl Surveys

Jacobs biologists conducted breeding and nonbreeding season protocol-level burrowing owl surveys throughout 2024 and 2025 following the 2012 survey guidelines outlined in the CDFW (formerly California Department of Fish and Game) *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) (Table 2-1).

One nonbreeding season and four breeding season surveys were conducted throughout the BSA (Table 2-1). Weather conditions during both surveys were suitable for observing burrowing owl. In accordance with the 2012 survey guidelines, surveyors began their survey no sooner than approximately 30 minutes after civil twilight and performed walking transects from east to west throughout the Project footprint plus a 547-yard buffer. Surveyors determined that transect spacing of 20 yards was appropriate for full coverage; transect spacing was reduced to 7 yards during periods of lower visibility due to dense fog.

Surveyors recorded all observations of burrowing owl, as well as burrows and burrow complexes that showed signs of burrowing owl occupancy, including the presence of whitewash, pellets, prey remains, decoration materials, feathers, and eggshells.

Data was recorded digitally and in a field notebook. Digital data was collected on iOS devices with the FieldMaps application on the ArcGIS Online platform. If a burrow complex had multiple burrows with burrowing owl sign, one burrow point was collected for the entire complex. Burrows were considered within the same complex if the individual burrows were within approximately 15 feet of each other. Each mapped burrow location was reexamined during each subsequent survey for signs of burrowing owl occupancy. Only newly detected burrowing owls or burrows were recorded during the second round of surveys. Burrows detected during the first round of surveys that had burrowing owl detected again during subsequent rounds were recorded in GIS but were not presented as a new burrowing owl detection to avoid double-counting.

2.3.6 Protocol-Level Swainson's Hawk Surveys

Jacobs biologists conducted protocol-level Swainson's hawk nesting surveys to assess raptor nesting activity and density within the BSA (Table 2-1). These surveys were performed in accordance with the guidelines provided by the Swainson's Hawk Technical Advisory Committee (SHTAC) in *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys for the California Central Valley* (SHTAC 2000).

As per the 2000 protocol, Swainson's hawk surveys were conducted within a 0.5-mile area around the Project footprint.

The Swainson's hawk survey guidelines identify five survey periods, with each survey period corresponding with a recommended number of surveys (SHTAC 2000). To meet the minimum requirements of the Swainson's hawk survey guidelines, surveys must be completed in at least two of the survey periods immediately before a project's initiation (SHTAC 2000). Periods II and III were determined to be the optimum times for locating nests, as Swainson's hawk are highly active during these times.

Six surveys were conducted for the Project in survey periods II and III, three surveys for each survey period. Surveys were performed within the daily (morning) time windows and weather conditions prescribed in the survey protocol (for example, sunrise to 12:00 p.m.). All observations of raptor or corvid (for example, common raven, *Corvus corax*) nesting were recorded within these areas as per the survey protocol (SHTAC 2000).

The surveyors used high-powered binoculars and spotting scopes to observe avian activity from multiple vantage points. Data was recorded digitally (on iOS devices with the FieldMaps application on the ArcGIS Online platform) and on hard copy in a field notebook. Where possible, surveyors stayed in their cars while surveying to avoid disturbing the targeted hawks, consistent with the survey guidelines.

2.3.7 Focused Eagle Nesting Surveys

Jacobs biologists conducted bald eagle and golden eagle nest surveys concurrently with the Swainson's hawk surveys (Table 2-1). The focused eagle surveys were conducted throughout the Project footprint with an additional 2-mile buffer area per the survey guidelines in the USFWS Eagle Nest Survey Guidance Protocol (USFWS 2020). In general, the methods used for the eagle surveys were the same as those used for the Swainson's hawk surveys discussed above, except for the larger 2-mile survey area buffer and the difference in focal species.

2.4 Aquatic Resource Delineation

Jacobs biologists conducted an aquatic resources delineation within the BSA (Table 2-1). The delineation was in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), *National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams* (Final Version) (USACE 2025a), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0* (USACE 2008), and *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Resources Control Board 2019). Wetland indicator statuses for plants were taken from the National Wetland Plant List, version 3.4 (USACE 2018).

Digital data was collected on iOS devices with the FieldMaps application on the ArcGIS Online platform. Submeter accuracy was attained during the delineation by using a Trimble R1 receiver connected to devices via a Bluetooth connection.

2.5 Limitations to Field Surveys

Access restrictions on private lands outside the Project area limited the ability of surveyors to comprehensively assess portions of the BSA and species-specific survey buffers. Where feasible, these areas were observed from public roads and other publicly accessible vantage points using binoculars and spotting scopes. High winds (10 to 20 miles per hour) were occasionally encountered during the burrowing owl and Swainson's hawk surveys, although high winds are typical of the area.

3. Results

This section provides the results for botanical surveys, wildlife surveys, and the aquatic resources delineation.

3.1 Desktop Review Results

Desktop review was conducted to assess habitat and occurrence records for special status animal and plant species. Results are generally presented in subsection 3.1.1 for special status plant species and 3.1.2 for special status wildlife species. Detailed descriptions of species and assessments for their potential to occur are presented in Appendices A and B.

3.1.1 Special-status Plant Species

Based on the literature and desktop review, 51 special-status plant species were evaluated for their potential to occur in the BSA (Appendix A). Of the 51 species analyzed, 27 species were evaluated to have suitable habitat within the BSA and 24 are not expected to occur in the BSA because of lack of suitable habitat. These results informed survey timing to target potentially occurring special status plant species.

CNDDDB locations of special-status plant species within a 10-mile buffer of the BSA are submitted under separate cover with a request for confidential designation pending California Energy Commission staff review (Confidential Figure 1).

3.1.2 Special-status Wildlife Species

Based on the literature and desktop review, 46 special-status wildlife species were evaluated for their regional presences and were assessed for their potential to occur in the BSA (Appendix B). These results informed survey planning in conjunction with reconnaissance level wildlife survey and initial habitat assessment presented in section 3.4.

CNDDDB locations of special-status species within a 10-mile buffer of the BSA are submitted under separate cover with a request for confidential designation pending CEC staff review (Confidential Figure 2).

Confidential Figure 1. CNDDDB Plants 10 Miles

Submitted under a request for confidential treatment.

Confidential Figure 2. CNDDDB Animals 10 miles

Submitted under a request for confidential treatment.

3.2 Rare Plant Survey Results

No special-status plant species were detected within the BSA during protocol-level botanical surveys in 2025, which coincided with the appropriate blooming periods of species with potential to occur in the BSA. A complete list of observed plant species observed during the protocol-level botanical surveys is included in Appendix C.

3.2.1 Invasive Plant Survey Results

During the botanical surveys, three target invasive plant species were observed and mapped. The target invasive species observed to date included the following:

- Italian thistle (*Carduus pycnocephalus*); Cal-IPC moderate
- Tocalote (*Centaurea melitensis*); Cal-IPC moderate
- Stinkwort (*Dittrichia graveolens*); Cal-IPC moderate

3.3 Land Cover Mapping Results

Regional land cover within a 1-mile radius of the BSA is composed of three Classification and Assessment with LANDSAT of Visible Ecological Groupings (CALVEG) land cover types, including annual grasslands and forbs, urban/developed areas, and water (Figure 3-1). These land cover types are summarized in Table 3-1.

Table 3-1. Regional Land Cover Within and Surrounding the Biological Survey Area

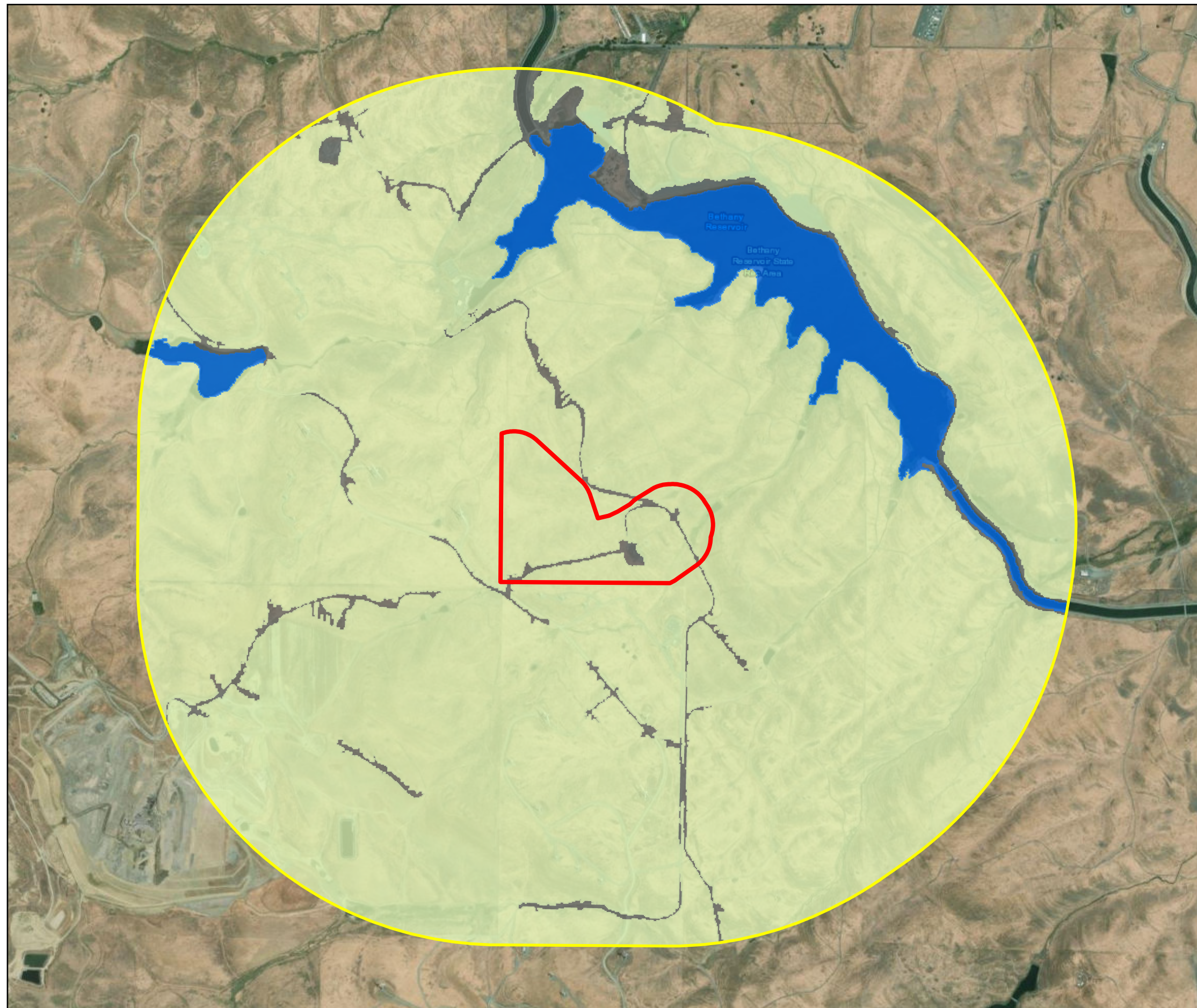
Regional Land Cover Type	Acreage within 1-mile of the BSA
Annual Grasses and Forbs	2,851.49
Urban/Developed	115.12
Water	184.30
Total	3,150.90

Source: CALVEG 2018

The urban/developed and water land cover types are general CALVEG communities that are associated with existing developed areas and water bodies. The annual grasses and forbs land cover type is associated with a formal NVCS group, the California Annual Grassland & Forb Meadow Group, which is described further in this subsection.

3.3.1 Annual Grasses and Forbs

This land cover type is associated with the NVCS California Annual Grassland & Forb Meadow group, which includes annual grasslands and annual forb-dominated meadows of California, ranging from the coast to the lower foothills of the Sierra Nevada. While this group has a significant nonnative species presence, native species are also commonly observed, including common fiddleneck (*Amsinckia menziesii*), poppies (*Eschscholzia* spp.), variegated clover (*Trifolium variegatum*), and small fescue (*Festuca microstachys*) (Faber-Langendoen et al. 2010-2019).



Legend

- Biological Study Area (BSA) (103.31 acres)
- 1-Mile From Biological Study Area
- CALVEG Regional Dominance Type
- Annual Grasses and Forbs
- Urban/Developed (General)
- Water

Source:

- 1) ESRI Aerial Images
- 2) U.S. Forest Service, EVeg Mid Region 5 Central Coast

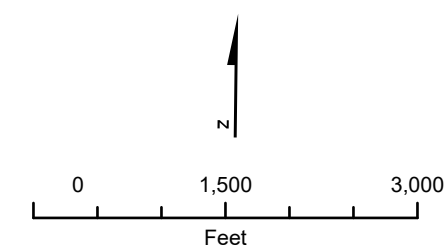


Figure 3-1
CALVEG Land Cover
Viracocha Hill BESS: Comprehensive
Biological Survey Report
 Alameda County, California

Jacobs

3.3.2 MCV Alliances and Land Cover Types Within the BSA

A summary of the MCV vegetation alliances and other land cover types that occur within the BSA, as well as information regarding the rapid assessment survey, is provided in Table 3-2. These vegetation alliances and land cover types are shown on Figure 3-2 and are described further in the following subsections.

Table 3-2. Vegetation Alliances and Other Land Cover Types within the Biological Survey Area

Vegetation Alliances and Other Land Cover Types	Rapid Assessment Survey			Acreage within the BSA
	Sample Plot ID	Survey Date	Plot Size (meters)	
Saltgrass – Cooper’s Rush – Alkali Heath Interior	VEG-1	7/24/2025	10 by 10	3.39
Disturbed/Ruderal	VEG-2	7/24/2025	10 by 10	3.22
Wild Oats and Annual Brome Grasslands	VEG-3	7/24/2025	10 by 10	94.11
Upland Mustards or Star-thistle Fields	VEG-4	7/24/2025	10 by 10	2.29
Open Water	N/A	N/A	N/A	0.31
Total				103.31

Source: Jacobs 2025

3.3.2.1 Saltgrass – Cooper’s Rush – Alkali Heath Interior

This alliance is characterized in the MCV as inland alkaline- or saline-wet habitats where saltgrass (*Distichlis spicata*) is dominant. This alliance is associated with playas, swales, ephemeral streams, and terraces along washes that may be intermittently flooded (Sawyer et al. 2009).

Within the BSA, this alliance is associated with seasonal wetland features that are generally monotypic stands of saltgrass that include scattered patches of Italian ryegrass, Mediterranean barley, rabbitfoot grass (*Polypogon monspeliensis*), and alkali heliotrope (*Heliotropium curassavicum* var. *oculatum*).

3.3.2.2 Disturbed/Ruderal

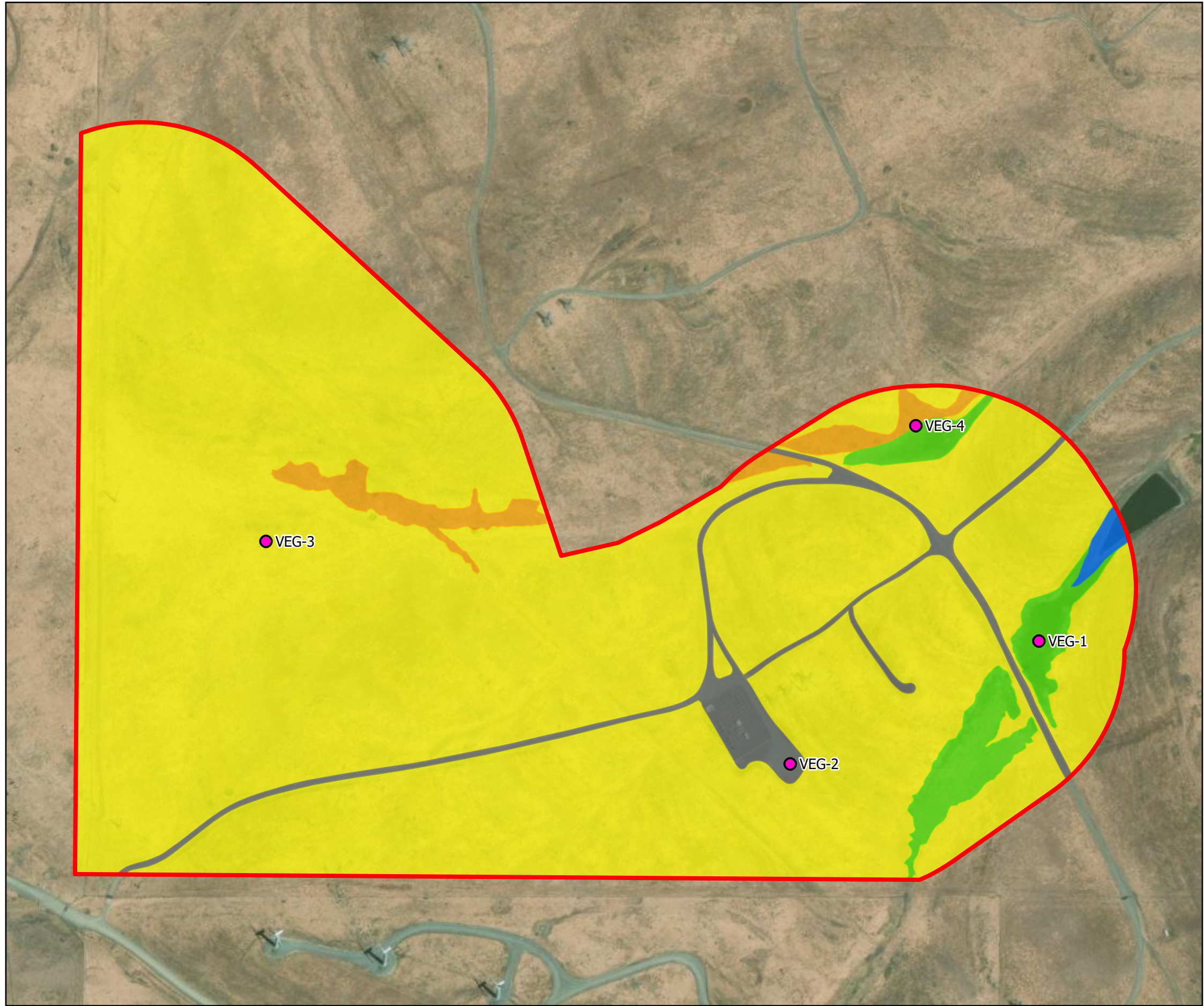
Disturbed/ruderal habitat within the BSA includes developed or disturbed areas such as existing roads, graded pads, and the Ralph Substation. Disturbed/ruderal areas within the BSA are relatively void of vegetation, however some weedy species occur along the edges of roads and pads, including stinkwort, foxtail chess (*Bromus madritensis*), greenstem filaree (*Erodium moschatum*), and shortpod mustard.

3.3.2.3 Wild Oats and Annual Brome Grasslands

This semi-natural alliance is characterized in the MCV as annual grasslands where nonnative oat grasses (*Avena* spp.) and/or brome grasses are dominant or co-dominant. This alliance occurs in all topographic settings in foothills, waste places, and openings in woodlands (Sawyer et al. 2009).

This alliance is the dominant land cover type within the BSA and was observed to consist primarily of slender oats, soft chess (*Bromus hordeaceus*), and rigput brome. Within the BSA, this land cover type was also interspersed with various forbs such as common fiddleneck, common gumplant (*Grindelia camporum*), lupines (*Lupinus* spp.), and San Joaquin milkvetch (*Astragalus asymmetricus*).

Unvegetated areas present within this land cover type include bare soil associated with burrow complexes and cattle trails, rock piles, and high-voltage powerline towers just east of Ralph Substation.



- Legend
- Biological Study Area (BSA) (103.31 acres)
 - Rapid Assessment Points
- Vegetation Alliances**
- Saltgrass – Cooper's Rush – Alkali Heath Interior (3.39 acres)
 - Wild oats and annual brome grasslands (94.11 acres)
 - Upland mustards or star-thistle fields (2.29 acres)
 - Disturbed/Ruderal (3.22 acres)
 - Open Water (0.31 acre)

Source:
1) ESRI Aerial Images

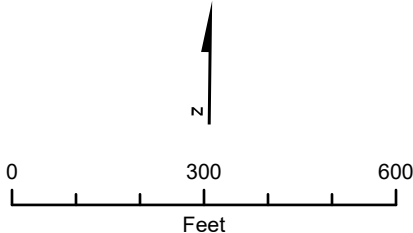


Figure 3-2
Vegetation Alliances within the
Biological Study Area
Viracocha Hill BESS: Comprehensive
Biological Survey Report
 Alameda County, California

3.3.2.4 Upland Mustards or Star-thistle Fields

This semi-natural alliance is characterized in the MCV as habitats where various nonnative mustards and/or thistles are dominant or co-dominant. This alliance is found in a wide range of habitats, including fallow fields, rangelands, grasslands, roadsides, levee slopes, disturbed coastal scrub, riparian areas, and waste places (Sawyer et al. 2009).

Within the BSA, this alliance is associated with dense patches of shortpod mustard that also includes nonnative annual grasses, milk thistle (*Silybum marianum*), and Italian thistles (*Carduus* spp.).

3.3.2.5 Open Water

One stock pond occurs in the eastern portion of the study area. Stock ponds in the Altamont Pass area are small permanent or seasonal bodies of water that have been constructed for the purposes of retaining runoff water for livestock use. The surface area of these features varies widely depending on the time of year.

3.4 Wildlife Survey Results

The following sections discuss the results of the reconnaissance-level wildlife survey and initial habitat assessments, protocol-level burrowing owl surveys, protocol-level Swainson's hawk surveys, and focused eagle nest surveys.

Fifty-one wildlife species were observed during the reconnaissance-level survey, focused wildlife surveys, protocol-level surveys, and incidental observations, including 41 birds, 4 mammals, 4 reptiles, and 2 amphibians (Appendix D). Most wildlife species that inhabit, move through, or forage within the habitats identified previously are relatively common species.

The following 13 special-status wildlife species were observed during the reconnaissance-level survey, focused wildlife surveys, protocol-level surveys, or were incidentally observed during biological resource surveys on neighboring projects and are assumed to occur within the BSA based on suitable habitat connectivity:

- American badger (*Taxidea taxus*)
- Bald eagle
- Burrowing owl
- California horned lark (*Eremophila alpestris actia*)
- Ferruginous hawk (*Buteo regalis*)
- Golden eagle
- Loggerhead shrike (*Lanius ludovicianus*)
- Northern harrier (*Circus hudsonius*)
- Northwestern pond turtle (*Actinemys marmorata*)
- Prairie falcon (*Falco mexicanus*)
- Short-eared owl (*Asio flammeus*)
- Swainson's hawk
- Tricolored blackbird

3.4.1 Reconnaissance-Level Wildlife Survey and Initial Habitat Assessment Results

During the November 2024 reconnaissance-level wildlife survey and initial habitat assessment, surveyors determined the vegetated and aquatic habitats present within the BSA may support numerous special-status wildlife species identified in the desktop review. The desktop review identified 46 special-status

wildlife species. Following the reconnaissance-level wildlife survey and initial habitat assessment, surveyors determined 16 of the species are not expected to occur in the BSA because of lack of suitable habitat. Ten species were identified as having low potential to occur in the BSA; three species were identified as having moderate potential to occur in the BSA; two species were identified as having high potential to occur in the BSA; and 15 species were observed or otherwise assumed to be present in the BSA.

Avian species with no potential to nest within, or within an assumed disturbance buffer of, the BSA and that would only be present in the BSA during migrations or foraging, such as California condor (*Gymnogyps californianus*), song sparrow (Modesto population, *Melospiza melodia*), peregrine falcon (*Falco peregrinus anatum*), prairie falcon, ferruginous hawk, and Cooper's hawk (*Accipiter cooperii*), are not discussed further in this document.

The remaining 24 special-status wildlife species identified as having potential to occur in the BSA are included in Appendix D and discussed in further detail in this section. Results for these species include, in some cases, observation data that occurred during subsequent biological resource surveys. Burrowing owl, Swainson's hawk, and nesting eagle presence are discussed in Sections 3.4.2, 3.4.3, and 3.4.4, respectively, as more in-depth analysis of these species' potential to occur within the BSA or within potential disturbance distance from proposed work activities was determined through focused or protocol-level surveys.

3.4.1.1 California Red-legged Frog

The stock pond in the BSA provides suitable aquatic breeding habitat, and wetlands in the BSA provide aquatic nonbreeding habitat for this species. It is assumed wetlands in the BSA lack the hydroperiod to support larval development of frogs. Jacobs biologists did not observe any California red-legged frogs in the ponds or wetlands within the BSA during surveys; however, because California red-legged frogs are known to have a maximum dispersal distance of 2 miles (Bulger et al. 2003), aquatic habitat in the BSA could be colonized by dispersing frogs traveling from nearby breeding grounds in ponded sections of creeks and stock ponds in the vicinity of the BSA. Because of this, upland areas in the BSA represent suitable upland and dispersal habitat for this species. Upland areas within the BSA contain small mammal burrows or deep soil cracks that may be used by this species as refugia.

Jacobs biologists have incidentally observed this species breeding in a stock pond approximately 0.75 mile south of the BSA as well as inhabiting a stock pond approximately 0.2 mile west of the BSA. Neither stock pond is located within the Project footprint. Based on the presence of suitable breeding and upland habitat within the BSA and multiple potential and known breeding sites within 2 miles of the BSA, California red-legged frog is presumed present in the BSA.

3.4.1.2 California Tiger Salamander

The stock pond in the BSA provides suitable aquatic breeding habitat. Additionally, other stock ponds are scattered throughout the Project vicinity that provide suitable breeding habitat. Because California tiger salamanders are known to breed near (within approximately 1.25 miles) the BSA, they could occupy small mammal burrows or deep soil cracks in annual grasslands that serve as upland habitat throughout the BSA.

Jacobs biologists have incidentally observed this species breeding in a stock pond approximately 0.75 mile south of the BSA; however, the stock pond is not located within the Project footprint. Based on the presence of suitable upland and aquatic breeding habitat in the BSA and known occupancy in the Project vicinity, California tiger salamander is presumed present in the BSA.

3.4.1.3 Western Spadefoot

Suitable breeding habitat for western spadefoot exists within the pond and wetlands in the BSA. If western spadefoot breed in the BSA, they could occupy small mammal burrows or soil cracks within the grasslands within the BSA.

Based on the presence of suitable breeding and upland habitat within the BSA, there is a high potential for Western spadefoot to be present in the BSA.

3.4.1.4 Northwestern Pond Turtle

The stock pond in the BSA provides suitable aquatic habitat for northwestern pond turtle. Northwestern pond turtles may also nest or disperse through the grassland habitats within the BSA but would mostly be expected to bask in and around the stock pond. While this species is known to be present near the BSA, it is not expected to be encountered within the upland areas of the Project footprint except on very rare occasions (for example, nesting or overland dispersal events) because it is a highly aquatic species.

Jacobs biologists incidentally observed five adult turtles in a stock pond approximately 0.63 mile east of the BSA with hydrological connectivity to the stock pond in the BSA in April of 2025. Because of the known presence of this species near the BSA and suitable aquatic and upland nesting habitat in the BSA, this species is assumed to be present within the BSA.

3.4.1.5 Other Special-Status Reptiles, Including San Joaquin Coachwhip, California Glossy Snake, and Blainville's Horned Lizard

Annual grasslands within the BSA provide suitable habitat for all three species. Microhabitat conditions suitable for each species are also present in the BSA in the form of friable soils and basking areas, such as rock outcrops and rock piles, with large insect prey bases for Blainville's horned lizard, and small mammal burrows and deep soil cracks for San Joaquin coachwhip and California glossy snake oviposition. These species are uncommon within the Altamont but may potentially use grasslands in the BSA for all stages of their life cycles.

Based on the presence of suitable habitat in the BSA, occurrences of these species within 10 miles of the BSA (CDFW 2025a), and their ranges overlapping with the BSA, the potential for San Joaquin coachwhip and California glossy snake to occur within the BSA is considered moderate. Based on the presence of suitable habitat in the BSA, occurrences of this species within 10 miles of the BSA (CDFW 2025a), but the BSA being just outside of the known extant range for this species, the potential for Blainville's horned lizard to occur within the BSA is considered low.

3.4.1.6 Special-Status Grassland Nesting Birds, Including Northern Harrier, Short-eared Owl, California Horned Lark, and Grasshopper Sparrow

Northern harriers and California horned larks were observed consistently within the BSA during biological resource surveys, and a short-eared owl was observed incidentally by Jacobs biologists approximately 0.95 mile east during 2023 surveys for a neighboring project. Based on observations of these species within and near the BSA, northern harrier, short-eared owl, and California horned lark are considered present foraging and nesting in the BSA.

Based on the presence of highly suitable grassland habitat and one documented CNDDDB occurrence within 10 miles of the BSA, grasshopper sparrow is considered to have high potential to nest and forage in the BSA.

3.4.1.7 Tricolored Blackbird

The BSA supports little to no nesting habitat; most stock ponds in the vicinity, including the stock pond within the BSA, are denuded of any suitable emergent or wetland vegetation (such as tules or cattails) by the ongoing cattle grazing, and the few patches of blackberries (*Rubus* spp.) or dense thistle (*Asteraceae* sp.) patches in the BSA are relatively small in extent. The BSA does, however, provide abundant grassland foraging habitat for tricolored blackbird.

Jacobs biologists incidentally observed a flock of approximately 200 tricolored blackbirds foraging in the southern portion of the BSA during protocol-level Swainson's hawk surveys on March 28, 2025. Based on observations of this species in the BSA, tricolored blackbird is considered to be present foraging within the BSA but is unlikely to nest within the BSA. The areas fringing Bethany Reservoir do feature suitable vegetation that could provide nesting habitat for tricolored blackbird but are far enough away from the BSA to not pose a risk of disturbance to nesting colonies.

3.4.1.8 Loggerhead Shrike

Loggerhead shrikes could forage throughout annual grasslands in the BSA, as abundant prey species, such as lizards, grasshoppers, and other large insects, are present. While the BSA generally lacks suitable nesting substrate for this species, tumbleweeds and other vegetation could get caught in the substation fence or surrounding parcel fence, inadvertently creating nesting substrates. Nesting habitats are present in trees and shrubby vegetation near the BSA.

This species was observed numerous times during biological surveys from 2024 to 2025. Based on these observations, loggerhead shrike is considered to be present foraging within the BSA and could nest within the BSA.

3.4.1.9 White-tailed Kite

Suitable nesting habitat for white-tailed kite is present in the form of a stand of eucalyptus trees southwest of the BSA, which is within potential disturbance distance from the BSA. Additionally, this species could nest in electric transmission or distribution towers within the BSA, although this is not the preferred nesting substrate of this species. Annual grassland in the BSA provides abundant prey for raptors, including small lizards, mice, voles, ground squirrels, and other small vertebrate species.

Based on nearby occurrences, the presence of suitable nesting habitat near the BSA, and suitable foraging habitat within the BSA, white-tailed kites are considered to have a moderate potential to occur within the BSA.

3.4.1.10 American Badger

The annual grassland habitat in the BSA provides suitable denning, foraging, and dispersal habitat for this species, with abundant prey of small mammals, and burrows created by fossorial mammals suitable for converting into badger dens.

One adult American badger was incidentally observed in April 2025 at a den northeast of the BSA during protocol-level burrowing owl surveys for this Project. Based on the observation of this species near the BSA, American badgers are assumed to be present in the BSA.

3.4.1.11 San Joaquin Kit Fox

Suitable denning, foraging, and dispersal habitat is present in annual grassland throughout the BSA, and many burrows sufficiently sized for kit fox are present. The nonnative annual grassland habitat in the BSA provides suitable denning, foraging, and dispersal habitat for this species, with abundant prey of small mammals, and burrows created by fossorial mammals suitable for converting into kit fox dens.

Due to the presence of annual grassland habitat and burrow complexes, dispersing San Joaquin kit foxes could travel through or den in the BSA; however, the potential for San Joaquin kit fox to occur in the BSA is low because the species has not been detected in the Altamont region in 25 years, despite the large amount of occurrence data in the vicinity of the BSA.

3.4.1.12 Townsend's Big-eared Bat, Pallid Bat, and Other Roosting Bats

Potential habitats within the BSA, including human-made structures within the existing substation, lack suitable roosting habitat. However, dilapidated farm structures are ubiquitous throughout the regional vicinity and may provide suitable roosting habitat for bat species. Roosting bats in the vicinity of the BSA may migrate or forage through the BSA. Substantial populations of suitable insect prey species are present in the BSA and regional vicinity.

Based on the limited occurrence data and lack of suitable roosting habitat in the BSA, bat species are considered to have low potential to forage in the BSA and no potential to roost within the BSA.

3.4.1.13 Crotch's Bumble Bee

There are no CNDDDB occurrences within 5 miles of the BSA. An expanded 10-mile CNDDDB buffer was performed and 1 occurrence approximately 8 miles southeast of the Project footprint was observed in the Tracy 7.5-minute quadrangle. This occurrence was observed on May 1, 1959, with no exact location details, although is mapped within the general vicinity of the city of Tracy. No ecological details were provided with this occurrence.

The expected extant range of this species is near but outside of the BSA (Hatfield et al. 2014).

Although suitable nesting sites for this species, in the form of abandoned rodent burrows, are ubiquitous in the BSA, floral resources for foraging are limited, making the overall likelihood of nesting low. In addition, high winds in the region further reduce the likelihood of Crotch's bumble bee presence, as high winds negatively affect foraging activity (Goyal et al. 2024).

Although suitable habitat is present for this species within the BSA, the quality of the habitat is marginal. Given that the study area is outside the reported expected range of this species and the low habitat quality within the study area, no bumble bee colonies are expected to be present within the BSA.

3.4.1.14 Monarch Butterfly

Narrow leaf milk weed (*Asclepias fascicularis*), a suitable larval host plant, was observed within the BSA during rare plant and habitat surveys, but suitable roosting habitat or overwintering habitat is absent from the BSA and regional vicinity. Floral resources for foraging are limited in the BSA, making the overall likelihood of Monarch butterfly presence low. In addition, high winds in the region further reduce the likelihood of Monarch butterfly presence, as high winds would make dispersal and nectaring during foraging bouts difficult. However, presence of this species cannot be ruled out, as floral resources, including a larval host plant species, are present in the BSA. No Monarchs were observed during floristic surveys, reconnaissance-level wildlife surveys, or incidentally during species-specific surveys.

Based on the limited occurrence data, lack of roosting or overwintering habitat, limited floral resources, and high winds in the BSA, there is a low potential for Monarch butterflies to be present in the BSA.

3.4.2 Protocol-level Burrowing Owl Survey Results

During the five total burrowing owl survey events, weather conditions were suitable for observing burrowing owl. Wind speeds were generally low and there was no precipitation during the surveys; however, there was dense fog during the December 11, 2024 survey. Transect spacing was reduced during periods of lower visibility as a result of dense fog.

3.4.2.1 Nonbreeding Season Survey

During the nonbreeding season protocol-level survey in December 2024, surveyors observed 25 burrows showing sign of burrowing owl occupancy (for example, displaying burrowing owl sign such as recent deposition of whitewash or burrowing owl pellets or where burrowing owls were observed entering or exiting) within the survey area for burrowing owl, including 6 within the proposed Project footprint (Figure 3-1). Of these 25 occupied owl burrows, adult owls were observed entering or exiting 5 of them. None of the 5 burrows with burrowing owl individuals observed at them were within the Project footprint; all were within the survey area for burrowing owl outside of the Project footprint. Four burrows recorded within the Project footprint had recently deposited whitewash and pellets at the mouths of the burrows, indicating they are currently being used by burrowing owl, though no burrowing owl individuals were observed entering or exiting. Burrowing owl sign at the other two burrows was weathered, confirming previous occupancy by burrowing owls and suggesting potential for future burrowing owl occupancy. An additional four burrowing owl adults were observed foraging within the BSA and exited the BSA when surveyors approached them during transects.

3.4.2.2 Breeding Season Surveys

During the breeding season surveys, surveyors observed four burrows/burrow complexes showing sign of burrowing owl occupancy within the survey area for burrowing owl (Confidential Figure 3). Of these four burrows, two were determined to be currently occupied by a burrowing owl, as one or more adult burrowing owl were observed exiting the burrow. In total, four burrowing owl were observed within the survey area for burrowing owl during the breeding season surveys. Detailed notes taken during breeding season surveys are provided in Table 3-3.

Table 3-3. Breeding Season Survey Notes

Survey Date	Survey Notes
April 8, 2025	- Observed one burrow showing signs of burrowing owl occupancy within the survey area. The burrow had whitewash and old pellets at the burrow mouth. - No burrowing owl were observed.
May 14, 2025	- Observed one occupied burrow with two burrowing owl present that were flushed away during the survey. It is likely the two burrowing owl individuals observed are a nesting pair. - The burrow with burrowing owl present had whitewash, feathers, and pellets observed at the burrow mouth. - No other burrows with sign were observed within the survey area.
June 4, 2025	- Observed four burrows/burrow complexes showing signs of burrowing owl occupancy within the survey area. - One burrowing owl was flushed to a burrow in a complex of about 11 burrows with whitewash but no other sign. - The burrow observed on May 14 was revisited, and one burrowing owl was flushed from the burrow. The burrow has feathers, pellets, and whitewash observed at the burrow mouth. The burrowing owl flushed north and landed near burrows but the burrows did not show sign of use. - The burrow observed on April 18 was revisited, and no burrowing owl was observed. Whitewash was observed at the burrow mouth, but no other sign was observed.

Survey Date	Survey Notes
	▪ In addition, a burrow that was not previously recorded was observed. No burrowing owl was observed, but the burrow has whitewash and feathers at the mouth. ▪ In total, two burrowing owl at two different burrows were observed within the survey area during the June 4 survey.
June 26, 2025	▪ Observed one burrow showing signs of burrowing owl occupancy within the survey area. A burrowing owl eggshell was observed in the burrow. ▪ No burrowing owl were observed.

The nonnative annual grassland habitat with California ground squirrel (*Otospermophilus beecheyi*) burrow complexes that is present throughout the BSA provides high-quality foraging and nesting habitat for this species. Although most burrowing owl observations and occupied burrows are more than 500 feet from the BESS footprint, there are numerous occupied burrows within the buffer and an even greater number of suitable burrows that may become occupied by burrowing owl. Based on observations of this species inhabiting the BSA, burrowing owls are considered present in the BSA and are likely to continue to occupy the BSA year-round.

3.4.3 Protocol-level Swainson's Hawk Survey Results

During the six protocol-level survey events for Swainson's hawk from March 20 to April 18, 2025 (Survey Periods II and III), Swainson's hawks were observed soaring over the BSA on numerous occasions. However, nesting within 0.5 mile of the BSA was not detected. Swainson's hawks were typically observed soaring in the eastern portion of the BSA near Bethany Reservoir.

The BSA represents foraging habitat for this species, as the expansive grasslands provide a suitable prey base of small vertebrates. Although the species is most typically associated in recent times with the row crop agriculture of the Central Valley, annual grassland is a staple habitat type for its foraging and was likely the most-used habitat type for foraging before conversion of the Central Valley into large-scale agriculture (Bechard et al. 2020). Almost the entire BSA represents suitable foraging habitat for the species in the form of nonnative annual grassland. The eucalyptus trees approximately 0.15 mile south of the BSA and planted trees surrounding Bethany Reservoir are considered highly suitable nesting habitat, though suitable nesting habitat is absent from the BSA.

Based on observations of this species soaring over the BSA, the presence of suitable nest trees within 0.5 mile of the BSA, and numerous known occurrences near the BSA, it is highly likely this species may nest within the BSA during construction of the Project. This species is considered be seasonally present within the BSA in the summer breeding season.

3.4.4 Focused Eagle Nesting Survey Results

As discussed previously, eagle surveys were conducted in tandem with Swainson's hawk surveys, as the survey guidelines for these species are largely identical.

Confidential Figure 3: Burrowing Owl Survey results

Submitted under a request for confidential treatment.

3.4.4.1 Bald Eagle

Bald eagles occupy a variety of habitats throughout North America but typically nest within tall trees, cliffs, and manmade structures with towering views of foraging grounds, which consist of large bodies of water with ample fish, though this species often hunts and scavenges terrestrial vertebrates as well.

Seven survey events for bald eagles were conducted within 2 miles of the BSA in spring 2025. A pair of bald eagles was observed soaring over the BSA during 2024 and 2025 surveys, and bald eagles were observed mating near the BSA during spring 2025 surveys. However, no nests were located within 2 miles of the BSA. Bald eagles are known to winter in the Altamont region and forage near the BSA, particularly at Bethany Reservoir approximately 0.5 mile east. Potential nesting substrates, such as large eucalyptus trees and high-voltage power line towers around Bethany Reservoir, could provide nesting opportunities for bald eagles. However, heavy recreational use within and around the banks of Bethany Reservoir dramatically reduces habitat quality for bald eagles. Suitable nesting or high-quality foraging habitat (large lakes, reservoirs, or rivers) is absent from the BSA.

Although this species was observed soaring and mating over the BSA, suitable foraging and nesting habitat is absent from the BSA. Therefore, this species is only expected to occur as a migrant within the BSA.

3.4.4.2 Golden Eagle

Golden eagles are found in a variety of habitats including rolling foothills, mountainous areas, sage-juniper flats, and desert (CDFW 2025a). This species requires cliff-walled canyons or large trees in open areas for nesting and forages on small mammals within open environments.

Seven survey events for golden eagles were conducted within 2 miles of the BSA in spring 2025. Surveyors did not locate any golden eagle nests, but they routinely observed golden eagles and golden eagle pairs soaring and foraging within the BSA. Potential nesting habitat is located outside the BSA, but avoidance buffers may very well extend into the BSA. The eucalyptus trees immediately southwest of the BSA are considered suitable nesting habitat, but routine presence of windfarm personnel on this parcel and proximity to regularly maintained windfarm infrastructure reduces nesting habitat quality. However, due to the 2-mile survey buffer, surveyors were often unable to access potentially suitable eagle nesting habitats within private parcels where topography did not allow surveyors to survey with binoculars and scopes.

Based on the documented foraging individuals, presence of suitable nesting habitat surrounding the BSA, and ubiquitous foraging habitat throughout the BSA, golden eagle is considered to be present foraging within the BSA and has a high chance of nesting within a potential disturbance buffer of planned construction activities.

3.5 Aquatic Resource Delineation Results

This section provided the results of the aquatic resource delineation. Figure 3-3 shows the aquatic resources delineated in the study area, and Table 3-4 lists the aquatic resource. Appendix E provides delineation data forms. Appendix F provides representative photographs.

No jurisdictional waters occur within the Project footprint. Within the BSA, the aquatic resource delineation identified four Palustrine, Emergent, Persistent (PEM1) wetlands on the eastern portion of the BSA. The NWI also identifies an unnamed drainage in the northwesternmost corner of the BSA as Riverine, Intermittent, Streambed, Seasonally Flooded (R4SBC); this feature was not observed. As noted previously, one stock pond is also present in the eastern portion of the BSA but not within the Project footprint.

Table 3-4. Aquatic Resources in the Study Area

Aquatic Resource ID	Cowardin Code ^[a]	Latitude	Longitude	Area (Acres)
Wetlands				
WET-1	PEM1	37.769509	-121.614696	0.50
WET-2	PEM1	37.768848	-121.614490	0.01
WET-3	PEM1	37.767535	-121.613930	0.51
WET-4	PEM1	37.768071	-121.613432	0.76
Total Wetlands				1.78
Other Waters				
PND-1	PUB	37.768724	-121.612904	0.31
Total Other Waters				0.31

^[a] Cowardin et al. 1979

ID = identifier

PEM= Palustrine, Emergent, Persistent

PND= Pond

PUB = Palustrine, Unconsolidated Bottom

WET= Wetland

3.6 Wetlands

Four PEM wetlands were delineated within the study area, encompassing approximately 1.78 acres (Confidential Figure 3). The Cowardin classification assigned to these wetlands is Palustrine, Emergent, Persistent (PEM1) (Cowardin et al. 1979).

All four wetlands (WET-1, WET-2, WET-3, and WET-4) were delineated in the eastern portion of the study area in low-lying depressional areas dominated by hydrophytic vegetation, including Italian rye grass, Mediterranean barley, and salt grass. Redox dark surface was the hydric soil indicator present at all four wetlands. The wetland hydrology indicators present include surface soil cracks and saturation. A culvert provides hydrologic connection between WET-3 and WET-4. A total of 1.78 acres of wetlands were delineated within the study area.

3.7 Other Waters

One pond (PND-1) was delineated on the eastern portion of the study area (Confidential Figure 3). This feature is a stock pond that is associated with WET-4. The pond was unvegetated and contained water during the March 2025 survey. A total of 0.31 acre of other waters was delineated in the study area. The Cowardin classification assigned to these waters is Palustrine, Unconsolidated Bottom (PUB) (Cowardin et al. 1979).

3.8 Other Areas Investigated

Several sample points were established in areas within the study area that were dominated by hydrophytic vegetation or showed indicators of wetland hydrology. Several sample points were also established in areas where the NHD or NWI mapped aquatic resources.

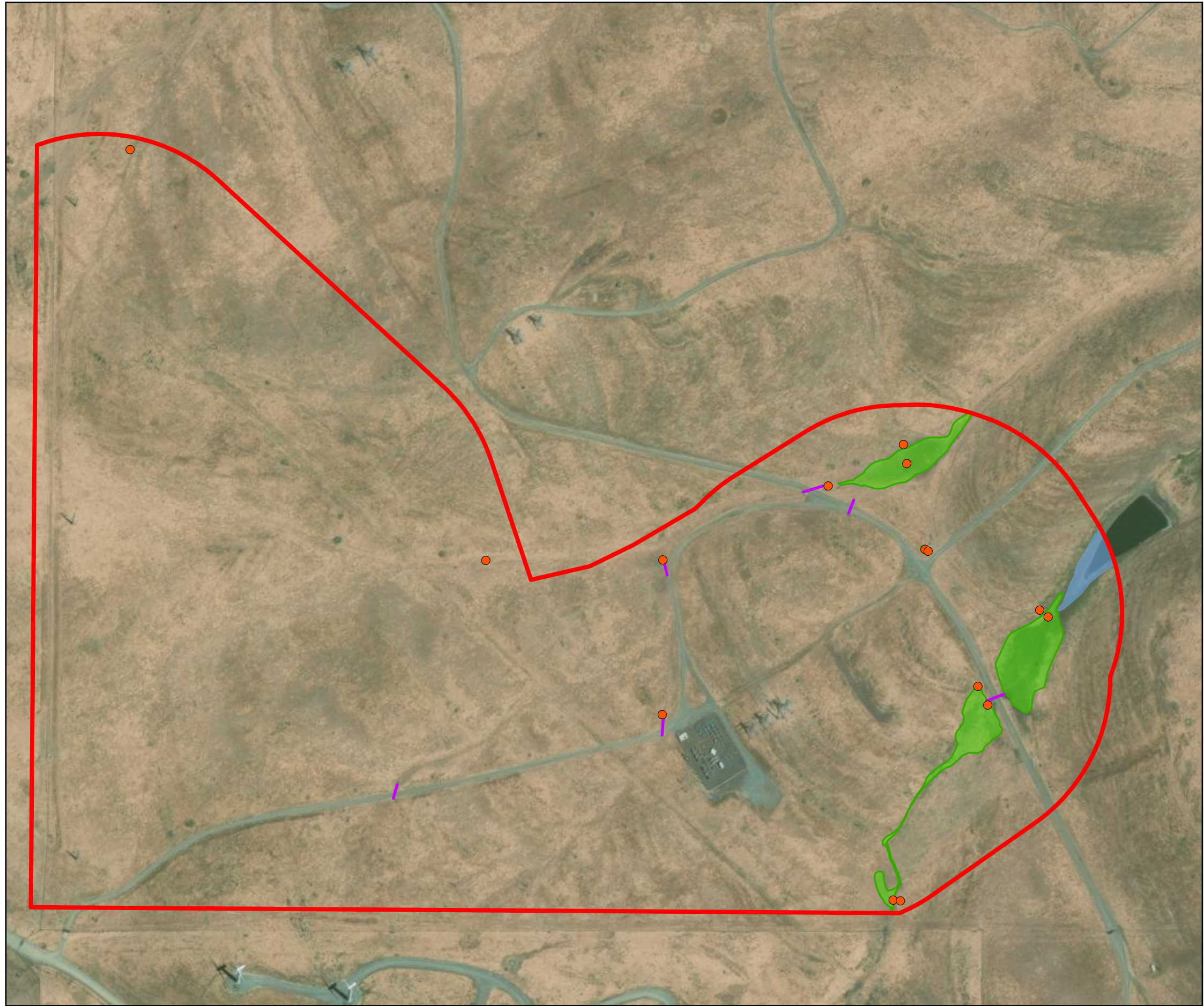
A sample point (SP-1) was established on the hillslope in the northwestern corner of the study area where the NHD shows a flow line passing through the study area (Figure 2-1, Confidential Figure 3, and Photo 4 in Appendix F). No ordinary high water mark (OHWM) indicators or wetland indicators were observed in the area. Therefore, no aquatic resources were delineated in this area.

Sample point (SP-2) was established within a broad swale and topographic low point on the landscape that is associated with a NHD flow line (Figure 2-1, Confidential Figure 3, and Photo 6 in Appendix F). No OHWM indicators or wetland indicators were observed in the area. Therefore, no aquatic resources were delineated in this area.

Sample point (SP-3) was established immediately downslope of a culvert outlet that is situated within a vegetated, constructed ditch (Confidential Figure 3 and Photo 8 in Appendix F). Although the area was dominated by facultative wetland vegetation, the area lacked indicators of wetland hydrology, hydric soils, and indicators of OHWM. Therefore, no aquatic resources were delineated in this area.

Sample point SP-4 was established in a small depression located immediately downslope of a culvert outlet (Confidential Figure 3 and Photo 9 in Appendix F). Although hydrophytic vegetation and wetland hydrology were present, this feature lacks hydric soils and OHWM indicators. Therefore, no aquatic resources were delineated in this area.

Sample point SP-5 was established in a ponded area located immediately downslope of a culvert outlet (Confidential Figure 3 and Photo 12 in Appendix F). Although hydrophytic vegetation and wetland hydrology were present, this feature lacked hydric soils and OHWM indicators. The area was heavily compacted from cattle and is subject to saturation and inundation at the surface, but not in the subsurface. Therefore, no aquatic resources were delineated in this area.



Legend

- Aquatic Resources Study Area (103.31 acres)
- Sample Point
- Culvert

Aquatic Resources

- Wetland (WET)
- Other Waters

Source:
1) ESRI Aerial Images

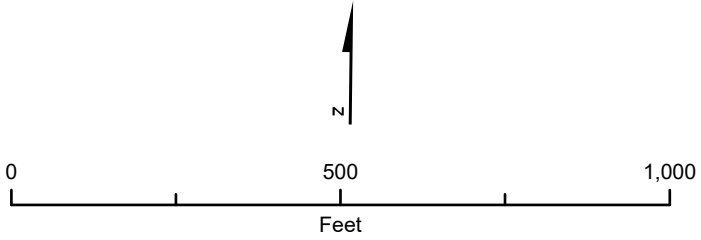


Figure 3-3
Aquatic Resources Delineation Overview Map
Viracocha Hill BESS: Comprehensive Biological Survey Report
 Alameda County, California



4. Summary of Findings

Within the BSA, sensitive biological resources, including special-status wildlife species and their habitats, special-status plant habitats, and aquatic resources, were identified. A summary of sensitive biological resources observed in the BSA is provided in this section.

4.1 Special-status Plant Species

Although 51 special-status plant species were identified during desktop reviews, and 27 of these species were initially determined to have potential to occur within the BSA, no special-status plant species were identified within the BSA during 2025 protocol-level special-status plant surveys. Special-status plant species are not expected to occur within the BSA.

4.2 Special-status Wildlife Species

Of the 46 special-status wildlife species identified during desktop reviews, only 16 species could be ruled out entirely based on lack of suitable habitat within the BSA.

California red-legged frog, California tiger salamander, northwestern pond turtle, northern harrier, short-eared owl, California horned lark, tricolored blackbird, loggerhead shrike, American badger, burrowing owl, Swainson's hawk, golden eagle, and bald eagle were all either observed during the 2024-2025 surveys or were assumed present due to observations in the vicinity of the BSA. Although ferruginous hawk and prairie falcon were observed during the 2024-2025 surveys, these species are not discussed due to their preferred nesting substrates not being present within the BSA or within an assumed species-specific disturbance distance from the BSA. Disturbance from Project activities is not expected; therefore, these species are not discussed.

Western spadefoot and grasshopper sparrow were not observed within the BSA, but due to highly suitable habitat present within the BSA and nearby occurrence data documented in the CNDDB (CDFW 2025b), these species are considered to have high potential to occur within the BSA at all life stages.

San Joaquin coachwhip, California glossy snake, and white-tailed kite were not observed within the BSA, but based on the presence of suitable habitat in the BSA, these species may be present in the BSA.

Blaineville's horned lizard, San Joaquin kit fox, Townsend's big-eared bat, pallid bat, Crotch's bumble bee, and Monarch butterfly were not observed in the BSA. Although habitats within the BSA are only marginally suitable for these species, their potential presence within the BSA could not be ruled out entirely. California condor, song sparrow (Modesto population), peregrine falcon, and Cooper's hawk presence could not be ruled out entirely; however, the preferred nesting substrates for these species are not present within the BSA or within an assumed species-specific disturbance distance from the BSA. Disturbance from Project activities is not expected; therefore, these species are not discussed.

4.3 Aquatic Resources

Following a formal aquatic resource delineation, four palustrine emergent wetlands and one other water feature, a stock pond, were identified within the BSA.

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Appendix A

Special-Status Species and Potential to Occur in the BSA



Biological Resources

Appendix A Special-status Plant Species with Potential to Occur in the BSA *Viracocha Hill BESS Project*

Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
<i>Acanthomintha lanceolata</i>	Santa Clara thorn mint	Lamiaceae	-	-	4.2	Annual herb that occurs in arid and rocky places and often on serpentine slopes, in chaparral, cismontane woodland and coastal scrub from 260 to 600 feet. Known in Alameda, Fresno, Merced, Monterey, San Benito, San Joaquin, Santa Clara, Stanislaus, and Ventura counties (CDFW 2025, CNPS 2025).	March to June	Absent. There is no suitable habitat within the BSA to support this species. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).
<i>Amsinckia grandiflora</i>	Large-flowered fiddleneck	Boraginaceae	E	E	1B.1	Annual herb found in cismontane woodland and valley and foothill grassland from 500 to 1,800 feet. Known from fewer than five natural occurrences in Alameda, Contra Costa, and San Joaquin counties. Known from only two natural populations (CDFW 2025, CNPS 2025).	March to May	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).

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Appendix A Special-status Plant Species with Potential to Occur in the BSA *Viracocha Hill BESS Project*

Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
<i>Androsace elongata</i> ssp. <i>acuta</i>	California rockjasmine	Primulaceae	-	-	4.2	Annual herb found in chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, and valley and foothill grassland, from 490 to 4,290 feet. Known in Alameda, Contra Costa, Colusa, Fresno, Glenn, Kern, Los Angeles, Merced, Riverside, San Bernardino, San Benito, Santa Clara, San Diego, Siskiyou, San Joaquin, San Luis Obispo, San Mateo, Stanislaus, and Tehama counties (CDFW 2025, CNPS 2025).	February to June	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. This species is not tracked in the CNDDb; however, it has been documented within the Midway and Altamont quads (Calflora 2025).
<i>Arctostaphylos manzanita</i> ssp. <i>laevigata</i>	Contra Costa manzanita	Ericaceae	-	-	1B.2	An evergreen shrub found in rocky chaparral from 1,640 to 3,610 feet. Known from 10 occurrences in Contra Costa County (CDFW 2025, CNPS 2025).	January to March	Absent. There is no suitable habitat within the BSA to support this species. Additionally, there are no documented CNDDb occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).

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Special-status Plant Species with Potential to Occur in the BSA
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Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
<i>Astragalus tener</i> var. <i>tener</i>	Alkali milk-vetch	Fabaceae	-	-	1B.2	Annual herb found in alkaline areas of playas, adobe clay valley and foothill grassland, and vernal pools from 3 to 200 feet. Known in Alameda, Merced, Napa, Solano, and Yolo counties (CDFW 2025, CNPS 2025).	March to June	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. There are two documented CNDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).
<i>Atriplex cordulata</i> var. <i>cordulata</i>	Heartscale	Chenopodiaceae	-	-	1B.2	Annual herb found in saline or alkaline conditions of chenopod scrub, meadows and seeps, and sandy Valley and foothill grassland from 3 to 1,230 feet. Known in Alameda, Butte, Fresno, Glenn, Kern, Madera, Merced, San Joaquin, San Luis Obispo, Solano, Stanislaus, Tulare, and Yolo counties (CDFW 2025, CNPS 2025).	April to October	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. There are two documented CNDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).

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Special-status Plant Species with Potential to Occur in the BSA
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Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
<i>Atriplex coronata</i> var. <i>coronata</i>	Crownscale	Chenopodiaceae	-	-	4.2	Annual herb found in alkaline soils (often clay) within chenopod scrub, valley and foothill grasslands, and vernal pools from 5 to 1,935 feet. Known in Contra Costa and Kern counties (CDFW 2025, CNPS 2025).	March to October	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. This species is not tracked in the CNDDb; however, it has been documented within the Clifton Court Forebay 7.5-minute USGS quadrangle and near the intersection of Altamont Pass Road and Dyer Road (Calflora 2025).
<i>Atriplex depressa</i>	Brittlescale	Chenopodiaceae	-	-	1B.2	Annual herb found in alkaline, clay soils of chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools from 3 to 1,050 feet. Known in Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Solano, Stanislaus, Tulare, and Yolo	April to October	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. There are six documented CNDDb

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Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
						counties (CDFW 2025, CNPS 2025).		occurrences of this species within a 5-mile radius of the BSA (CDFW 2025). The nearest EO of this species is located approximately 2.7 miles north of the BSA (CDFW 2025).
<i>Atriplex minuscula</i>	Lesser saltscale	Chenopodiaceae	-	-	1B.1	An annual herbaceous species found in sandy, alkaline soils in chenopod scrub, playas, and valley and foothill grassland from 50 to 730 feet. Occurs only in California; known in Alameda, Butte, Fresno, Kern, Madera, Merced, and Tulare counties. Presumed extirpated in Stanislaus County (CDFW 2025, CNPS 2025) (CDFW 2025, CNPS 2025).	April to October	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. There are four documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025). The nearest EO of this species is located approximately 3.2 miles west of the BSA near the intersection of Altamont Pass Road and Dyer Road (CDFW 2025). San Ysidro

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Special-status Plant Species with Potential to Occur in the BSA

Viracocha Hill BESS Project

Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
								series soils have the appropriate texture, but no seeps were identified in that portion of the BSA.
<i>Balsamorhiza macrolepis</i>	Big-scale balsamroot	Asteraceae	-	-	1B.2	Perennial herb found in chaparral, cismontane woodland, and valley and foothill grassland, sometimes on serpentine soils, from 295 to 5,102 feet. Known in Alameda, Amador, Butte, Colusa, El Dorado, Lake, Mariposa, Napa, Placer, Santa Clara, Shasta, Solano, Sonoma, Tehama, and Tuolumne counties (CDFW 2025, CNPS 2025).	March to July	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. Additionally, there are no documented CNDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).
<i>Blepharizonia plumosa</i>	Big tarplant	Asteraceae	-	-	1B.1	Annual herb found on clay soils in valley and foothill grassland from 100 to 1,660 feet. Known in Alameda, Contra Costa, and San Joaquin, San Luis Obispo, and Stanislaus counties (CDFW 2025, CNPS 2025).	July to November	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of

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Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
								suitable habitat. There are two documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025). The nearest EO of this species is located approximately 4 miles northwest of the BSA (CDFW 2025).
<i>Calochortus pulchellus</i>	Mt. Diablo fairy-lantern	Liliaceae	-	-	1B.2	Perennial bulbiferous herb found in chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland from 100 to 1,550 feet. Known in Alameda, Contra Costa, and Solano counties (CDFW 2025, CNPS 2025).	April to June	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. However, this species prefers partial shade and north aspects and most occurrences are in woodland habitats. Additionally, there are no documented CNDDDB occurrences of this species

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Appendix A Special-status Plant Species with Potential to Occur in the BSA *Viracocha Hill BESS Project*

Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
								within a 5-mile radius of the BSA (CDFW 2025).
<i>Carex comosa</i>	Bristly sedge	Cyperaceae	-	-	2B.1	Perennial rhizomatous herb found on lake margins and other wet places within coastal prairie, marshes and swamps, and valley and foothill grassland from 0 to 2,050 feet (CDFW 2025, CNPS 2025).	May to September	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. Additionally, there are no documented CNDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).
<i>Caulanthus lemmonii</i>	Lemmon's jewelflower	Brassicaceae	-	-	1B.2	An annual herbaceous species, flowers generally creamy white, found in pinyon and juniper woodland, chaparral, scrub, and valley and foothill grassland from 250 to 4,750 ft. Occurs only in California; known in Fresno, Kings, Kern, Merced, Monterey, Santa Barbara, San Benito, San Joaquin,	February to May	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. Additionally, there are no

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Appendix A Special-status Plant Species with Potential to Occur in the BSA *Viracocha Hill BESS Project*

Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
						San Luis Obispo, Stanislaus, and Ventura Counties. Presumed extirpated in Alameda County (CDFW 2025, CNPS 2025).		documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).
<i>Centromadia parryi</i> ssp. <i>congdonii</i>	Condgon's tarplant	Asteraceae	-	-	1B.1	Annual herb found on alkaline soils in Valley and foothill grassland from 0 to 800 feet. Known in Alameda, Contra Costa, Monterey, Santa Clara, San Luis Obispo, and San Mateo counties. Presumed extirpated from Santa Cruz and Solano Counties (CDFW 2025, CNPS 2025).	May to November	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. There is one documented CNDDDB occurrence of this species within a 5-mile radius of the BSA (CDFW 2025). The nearest EO of this species is located approximately 3.2 miles west of the BSA near the intersection of Altamont Pass Road and Dyer Road (CDFW 2025).

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Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
<i>Chloropyron molle</i> <i>ssp. hispidum</i>	Hispid salty bird's-beak	Orobanchaceae	-	-	1B.1	Annual, hemiparasitic herb found in alkaline soils of meadows and seeps, playas, and valley and foothill grassland from 3 to 500 feet. Known in Alameda, Fresno, Kern, Merced, Placer, and Solano counties (CDFW 2025, CNPS 2025).	June to September	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).
<i>Chloropyron palmatum</i>	Palmate-bracted bird's-beak	Orobanchaceae	E	E	1B.1	Annual hemiparasitic herb found on mesic sites in alkaline soil of chenopod scrub and valley and foothill grassland from 16 to 510 feet. Known in Alameda, Colusa, Fresno, Glenn, Madera, and Yolo counties. Presumed extirpated in San Joaquin County (CDFW 2025, CNPS 2025).	May to October	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. There are no documented CNDDDB occurrences of this species

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Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
								within a 5-mile radius of the BSA (CDFW 2025).
<i>Cicuta maculata</i> var. <i>bolanderi</i>	Bolander's water-hemlock	Apiaceae	-	-	1B.1	Perennial herb found in coastal fresh or brackish marshes and swamps from 0 to 650 feet. Known in California in Contra Costa, Marin, Sacramento, and Solano counties. Presumed extirpated in Santa Barbara County (CDFW 2025, CNPS 2025).	July to September	Absent. There is no suitable habitat within the BSA to support this species.
<i>Convolvulus simulans</i>	Small-flowered morning glory	Convolvulaceae	-	-	4.2	An annual herb often seen on heavy, cracking, and friable clay substrates in coastal scrub or vernal pools from 98 to 2,871 feet. Known in numerous counties, primarily along coastal California or southern California (CDFW 2025, CNPS 2025).	March to July	Absent. There is no suitable habitat within the BSA to support this species.
<i>Deinandra bacigalupii</i>	Livermore tarplant	Asteraceae	-	E	1B.1	An annual herb found in alkaline soils of meadows and seeps from 492 to 607 feet. Known from fewer than five occurrences near Livermore (CDFW 2025, CNPS 2025).	June to October	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to

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Appendix A Special-status Plant Species with Potential to Occur in the BSA *Viracocha Hill BESS Project*

Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
								occur despite presence of suitable habitat. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).
<i>Delphinium californicum</i> ssp. <i>interius</i>	Hospital Canyon larkspur	Ranunculaceae	-	-	1B.2	A perennial herb found in openings of chaparral, mesic cismontane woodlands and coastal scrub from 754 to 3,592 feet. Known in Alameda, Contra Costa, Merced, Monterey, San Benito, Santa Clara, San Joaquin, and Stanislaus counties (CDFW 2025, CNPS 2025).	April to June	Absent. There is no suitable habitat within the BSA to support this species.
<i>Delphinium recurvatum</i>	Recurved larkspur	Ranunculaceae	-	-	1B.2	A perennial herbaceous species found in poorly drained, fine, alkaline soils in chenopod scrub, cismontane woodland, and valley and foothill grassland from 50 to 4,200 feet. Occurs only in California; known in Alameda, Contra Costa, Fresno, Glenn, Kings,	March to June	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. There are

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Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
						Kern, Madera, Merced, Monterey, San Joaquin, San Luis Obispo, Solano, Sutter, and Tulare counties. Presumed extirpated in Butte and Colusa counties (CDFW 2025, CNPS 2025).		three documented CNDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025). The nearest EO of this species is located approximately 2.6 miles north of the BSA (CDFW 2025).
<i>Eriophyllum jepsonii</i>	Jepson's woolly sunflower	Asteraceae	-	-	4.3	A subshrub found in dry, ultramafic soils in chaparral and oak woodland from 630 to 1,630 feet. Known in Alameda, Contra Costa, El Dorado, Fresno, Kern, Merced, Monterey, San Benito, Santa Clara, and Stanislaus counties (CDFW 2025, CNPS 2025).	April to June	Absent. There are no suitable ultramafic substrates within the BSA to support this species.
<i>Eryngium racemosum</i>	Delta button-celery	Apiaceae	-	E	1B.1	An annual or perennial herb found in vernal mesic clay depressions of riparian scrub from 10 to 100 feet. Known in Calaveras, Contra Costa, Merced, and Stanislaus counties. Presumed extirpated in	June to October	Absent. There is no riparian scrub habitat within the BSA to support this species.

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Appendix A Special-status Plant Species with Potential to Occur in the BSA Viracocha Hill BESS Project

Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
						San Joaquin County (CDFW 2025, CNPS 2025).		
<i>Eryngium spinosepalum</i>	Spiny-sepaed button-celery	Apiaceae	-	-	1B.2	Annual to perennial herb found in valley and foothill grassland vernal pools (including vernal pool complexes) from 260 to 4,170 feet (Jepson eFlora 2025). Known in Contra Costa, Fresno, Kern, Madera, Merced, San Luis Obispo, Stanislaus, Tulare, and Tuolumne counties (CDFW 2025, CNPS 2025).	April to May	Absent. There are no vernal pools within the BSA to support this species.
<i>Erysimum capitatum</i> var. <i>angustatum</i>	Contra Costa wallflower	Brassicaceae	E	E	1B.1	Perennial herb found in inland dunes from 10 to 65 feet (CDFW 2025, CNPS 2025).	March to July	Absent. There are no inland dunes within the BSA to support this species.
<i>Eschscholzia rhombipetala</i>	Diamond-petaled California poppy	Papaveraceae	-	-	1B.1	Annual herb found in alkaline, clay soil of valley and foothill grassland from 0 to 3,200 feet. Known in Alameda, San Joaquin, and San Luis Obispo counties (CDFW 2025, CNPS 2025).	March to April	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. There are two documented CNDDB

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Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
								occurrences of this species within a 5-mile radius of the BSA (CDFW 2025). The nearest extant EO of this species is located approximately 1 mile northeast of the BSA (CDFW 2025).
<i>Extriplex joaquiniana</i>	San Joaquin spearscale	Chenopodiaceae	-	-	1B.2	Annual herb found in alkaline chenopod scrub, meadows and seeps, playas, and valley and foothill grassland from 3 to 2,740 feet. Known in Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Monterey, Napa, San Benito, Santa Clara, San Joaquin, San Luis Obispo, Solano, Tulare, and Yolo counties (CDFW 2025, CNPS 2025).	April to October	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. There are 21 documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025). The nearest EO of this species is within 1 mile of the BSA (CDFW 2025).

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Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
<i>Fritillaria agrestis</i>	Stinkbells	Liliaceae	-	-	4.2	Perennial bulbiferous herb found on clay, or sometimes serpentinite substrates in chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland from 984 to 5,003 feet. Known in Alameda, Contra Costa, Fresno, Kern, Mendocino, Merced, Monterey, Mariposa, Placer, Sacramento, Santa Barbara, San Benito, Santa Clara, San Luis Obispo, Stanislaus, Tuolumne, Ventura, and Yuba counties. Presumed extirpated from Santa Cruz and San Mateo counties (CDFW 2025, CNPS 2025).	March to June	High Potential Suitable habitat is present within the BSA. There is a documented record of this species approximately 2.75 miles southwest of the BSA (CDFW 2025, Calflora 2025).
<i>Hesperervax caulescens</i>	Hogwallow starfish	Asteraceae	-	-	4.2	Annual herb found in drying, shrink-swell clay soils of shallow vernal pools, flats, slopes (sometimes serpentine), in valley and foothill grassland from 0 to 1,650 feet. Known in Alameda, Amador, Butte, Contra Costa, Colusa, Fresno, Glenn, Kern,	March to June	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat.

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Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
						Merced, Monterey, Sacramento, San Joaquin, San Luis Obispo, Solano, Stanislaus, Sutter, Tehama, and Yolo counties. Presumed extirpated in Napa and San Diego counties (CDFW 2025, CNPS 2025).		Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).
<i>Hesperolinon breweri</i>	Brewer's western flax	Linaceae	-	-	1B.2	Annual herb found in chaparral, cismontane woodland, and valley and foothill grassland from 100 to 2,950 feet. Usually found on serpentinite soils. Known in Contra Costa, Napa, and Solano counties (CDFW 2025, CNPS 2025).	May to July	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	Woolly rose-mallow	Malvaceae	-	-	1B.2	A perennial, rhizomatous, aquatic emergent herb found in freshwater marshes and swamps from 0 to 400 feet. Occurs in freshwater-	June to November	Absent. There is no suitable habitat within the BSA to support this species.

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Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
						soaked riverbanks and low peat islands in sloughs. In California, known in the Delta watershed in Butte, Contra Costa, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, and Yolo counties (CDFW 2025, CNPS 2025; Jepson eFlora 2025).		
<i>Lasthenia ferrisiae</i>	Alkali goldfields	Asteraceae	-	-	4.2	Annual herb found in vernal pools and saline flats above 2,400 feet. Known in numerous counties across California (CDFW 2025, CNPS 2025).	February to May	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).

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Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	Delta tule pea	Fabaceae	-	-	1B.2	Perennial herb found in freshwater and brackish marshes, usually on marsh and slough edges, from 0 to 15 feet (CDFW 2025, CNPS 2025).	May to July (August to September)	Absent. There is no suitable marsh or slough habitat within the BSA to support this species.
<i>Leptosiphon ambiguus</i>	Serpentine leptosiphon	Polemoniaceae	-	-	4.2	An annual herb found in serpentine soils in cismontane woodland in elevations above 3,000 feet. Known in Alameda, Contra Costa, Fresno, Lake, Merced, Monterey, San Benito, San Mateo, Santa Clara, Santa Cruz, Stanislaus, and Tehama counties (CDFW 2025, CNPS 2025).	March to June	Absent. There are no suitable serpentine substrates within the BSA to support this species.
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	Apiaceae	-	R	1B.1	Rhizomatous herb found in brackish and freshwater marshes and swamps and riparian scrub from 0 to 33 feet. Known in Alameda, Contra Costa, Marin, Napa, Sacramento, San Joaquin, and Solano counties (CDFW 2025, CNPS 2025).	April to November	Absent. There is no suitable marsh or riparian scrub habitat within the BSA to support this species.

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Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
<i>Limosella australis</i>	Delta mudwort	Scrophulariaceae	-	-	2B.1	Stoloniferous herb found in marshes and swamps from 0 to 10 feet. Known in Contra Costa, Marin, Sacramento, San Joaquin, and Solano counties (CDFW 2025, CNPS 2025).	April to August	Absent. There is no suitable marsh habitat within the BSA to support this species.
<i>Madia radiata</i>	Showy madia	Asteraceae	-	-	1B.1	Annual herb found in cismontane woodland and valley and foothill grassland from 82 to 2,952 feet. Known in Fresno, Kern, San Benito, San Luis Obispo, and Stanislaus counties. Presumed extirpated from Contra Costa, Kings, Monterey, San Joaquin, and Santa Barbara counties (CNPS 2025) (CDFW 2025, CNPS 2025).	March to May	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. Additionally, there are no documented CNDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).
<i>Myosurus minimus ssp. apus</i>	Little mouse tail	Ranunculaceae	-	-	3.1	An annual herb found in vernal pools, wet fields, and lake shores from 0 to 2,400 feet. Known in Alameda, Butte, Colusa, Contra Costa, Fresno, Kern, Lake, Los	March to June	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this

Appendix A
Special-status Plant Species with Potential to Occur in the BSA
Viracocha Hill BESS Project

Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
						Angeles, Merced, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Solano, Tulare, Ventura, and Yolo counties (CDFW 2025, CNPS 2025).		species is not expected to occur despite presence of suitable habitat. However, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).
<i>Navarretia cotulifolia</i>	Cotula navarretia	Polemoniaceae	-	-	4.2	Annual herb found on adobe clay sites in chaparral, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal scrub, and lower montane coniferous forest from 15 to 6,005 feet (CNPS 2025).	May to June	Absent. There is no suitable habitat within the BSA to support this species.
<i>Navarretia nigelliformis</i> ssp. <i>radians</i>	Shining navarretia	Polemoniaceae	-	-	1B.2	Annual herb found in cismontane woodland, valley and foothill grassland, and in vernal pools from 250 to 3,300 feet. Known in Alameda, Contra Costa, Colusa, Fresno, Madera, Merced, Monterey, San Benito, San Joaquin, and San Luis Obispo	March to July	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. There is one documented CNDDDB record

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Appendix A

Special-status Plant Species with Potential to Occur in the BSA

Viracocha Hill BESS Project

Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
						counties (CDFW 2025, CNPS 2025).		of this species within a 5-mile radius of the BSA, which overlaps the southwestern portion of the BSA (CDFW 2025).
<i>Oenothera deltoides</i> ssp. <i>howellii</i>	Antioch Dunes evening-primrose	Onagraceae	E	E	1B.1	Perennial herb found in inland dunes from 0 to 100 feet. Blooms March through September (CDFW 2025, CNPS 2025).	March to September	Absent. There are no inland dunes within the BSA to support this species.
<i>Plagiobothrys glaber</i>	Hairless popcornflower	Boraginaceae	-	-	1A	An annual herb found in alkaline meadows and seeps, and coastal salt marshes and swamps from 49 to 590 feet. Last confirmed sighting in 1954. Possibly relocated near Antioch; identification uncertain. All collections since 1930s located in the Hollister area. Presumed extinct in California (CDFW 2025, CNPS 2025).	March to May	Absent. Suitable habitat is present within the BSA, but species is presumed extinct.
<i>Puccinellia simplex</i>	California alkali grass	Poaceae	-	-	1B.2	Annual herb found in alkaline, vernal mesic sinks, flats, and lake margins within chenopod scrub, meadows, seeps, valley and	March to May	Absent. This species was not observed during floristic surveys timed during its period of identifiable

Appendix A
Special-status Plant Species with Potential to Occur in the BSA
Viracocha Hill BESS Project

Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
						foothill grassland, and vernal pools from 7 to 3,050 feet. Known in Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kern, Lake, Los Angeles, Madera, Merced, Napa, San Bernardino, Santa Clara, Santa Cruz, San Luis Obispo, Solano, Stanislaus, Tulare, and Yolo counties. Presumed extirpated from Kings County (CDFW 2025, CNPS 2025).		phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. There are three documented CNDDDB records of this species within a 5-mile radius of the BSA, with the nearest EO located approximately 1.4 miles to the south off Altamont Pass Road (CDFW 2025).
<i>Ravenella exigua</i>	Chaparral harebell	Campanulaceae	-	-	1B.2	Annual herb found in rocky (usually serpentinite) chaparral from 902 to 4,100 feet. Known in Alameda, Contra Costa, Merced, San Benito, Santa Clara, and Stanislaus counties (CDFW 2025, CNPS 2025).	May to June	Absent. There is no suitable habitat within the BSA to support this species.
<i>Scutellaria galericulata</i>	Marsh skullcap	Lamiaceae	-	-	2B.2	Perennial rhizomatous herb found on mesic sites within lower montane coniferous forest, marshes and swamps, and meadows and seeps from 0 to	June to September	Absent. There is no suitable habitat within the BSA to support this species.

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Appendix A

Special-status Plant Species with Potential to Occur in the BSA

Viracocha Hill BESS Project

Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
						6,890 feet (CDFW 2025, CNPS 2025).		
<i>Senecio aphanactis</i>	Chaparral ragwort	Asteraceae	-	-	2B.2	Annual herb found in chaparral, cismontane woodland, and coastal scrub from 50 to 2,625 feet. Known in the following counties: Alameda, Contra Costa, Fresno, Los Angeles (including Santa Catalina Island), Merced, Monterey, Orange, Riverside, Santa Barbara (including Santa Cruz Island and Santa Rosa Island), Santa Clara, Santa Catalina Island, , San Diego, San Luis Obispo, Solano, and Ventura (CDFW 2025, CNPS 2025).	January to April	Absent. There is no suitable habitat within the BSA to support this species.
<i>Spergularia macrotheca</i> var. <i>longistyla</i>	Long styled sand spurrey	Caryophyllaceae	-	-	1B.2	A perennial herb found in alkaline marshes, seeps and meadows from 0 to 640 feet. Known in Alameda, Contra Costa, Fresno, Marin, Mendocino, Napa, Placer, and Solano counties (CDFW 2025, CNPS 2025).	February to May	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. There are

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Appendix A Special-status Plant Species with Potential to Occur in the BSA *Viracocha Hill BESS Project*

Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
								10 documented CNDDDB occurrences of this species within a 5-mile radius of the BSA, with the nearest EO located approximately 1.4 miles to the south of Altamont Pass Road (CDFW 2025).
<i>Symphotrichum lentum</i>	Suisun Marsh aster	Asteraceae	-	-	1B.2	Perennial rhizomatous herb found in brackish and freshwater marshes, most often seen along sloughs with <i>Phragmites</i> spp., <i>Scirpus</i> spp., <i>Rubus</i> spp., and <i>Typha</i> spp., from 0 to 45 feet (CDFW 2025, CNPS 2025).	May to November	Absent. There is no suitable habitat within the BSA to support this species.
<i>Trifolium hydrophilum</i>	Saline clover	Fabaceae	-	-	1B.2	Annual herb found in salt marshes and swamps, open mesic and alkaline soils of valley and foothill grassland, and vernal pools from 0 to 985 feet. Known in the Central Valley, Bay Area, south Coast Ranges, and Central Coast (CDFW 2025, CNPS 2025).	April to June	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. There are no documented CNDDDB

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Appendix A Special-status Plant Species with Potential to Occur in the BSA *Viracocha Hill BESS Project*

Scientific Name	Common Name	Family	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
			Federal	State	CNPS			
								records of this species within a 5-mile radius of the BSA (CDFW 2025).
<i>Tropidocarpum capparideum</i>	Caper-fruited tropidocarpum	Brassicaceae	-	-	1B.1	Annual herb found in alkaline hills of valley and foothill grassland from 3 to 1,500 feet in Alameda, Contra Costa, Monterey, San Joaquin, and San Luis Obispo Counties. (CDFW 2025, CNPS 2025).	March to April	Absent. This species was not observed during floristic surveys timed during its period of identifiable phenology. Therefore, this species is not expected to occur despite presence of suitable habitat. This species has a CNDDDB occurrence approximately 2.3 miles to the southwest. Altamont series soils underlying annual grassland habitat on site are potentially suitable but may not have ideal surface chemistry for this species (CNPS 2025, NRCS 2025).

^[a] Status abbreviations:

CNPS = California Native Plant Society

E = Endangered

CNPS California Rare Plant Ranks:

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1A = presumed extirpated or extinct because they have not been seen or collected in the wild in California for many years

1B = rare throughout their range with the majority of them endemic to California

2A = presumed extirpated because they have not been observed or documented in California for many years

2B = Except for being common beyond the boundaries of California, plants with a California Rare Plant Rank of 2B would have been ranked 1B

3 = lack the necessary information to assign them to one of the other ranks or to reject them

4 = limited distribution or infrequent throughout a broader area in California

EO = Element Occurrence

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Appendix B

Special-status Wildlife Species with Potential to Occur in the BSA



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Special-status Wildlife Species with Potential to Occur in the BSA

Viracocha Hill BESS Project

Scientific Name	Common Name	Status ^[a]			Habitat	Potential For Occurrence within the BSA
		Federal	State	CDFW		
Invertebrates						
<i>Bombus occidentalis</i>	Western bumble bee	-	CE	-	Open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows.	Absent. Required flowering plants and suitable habitat are not present within the BSA. CDFW range data further suggest species' extant range does not overlap the BSA.
<i>Bombus crotchii</i>	Crotch's bumble bee	-	CE	-	Nest underground in scrub grassland habitats, and individuals forage at sages, lupines, medics, phacelias, and milkweeds (<i>Asclepias</i> spp.).	Low Potential. Although suitable nesting sites for this species, in the form of abandoned rodent burrows, are ubiquitous in the BSA, floral resources for foraging are limited, making the overall likelihood of nesting low. In addition, high winds in the region further reduce the likelihood of Crotch's bumble bee presence, as high winds negatively affect foraging activity. There is one CNDDDB occurrence approximately 8 miles southeast of the Project footprint (CDFW 2025). This occurrence was observed on May 1, 1959, with no exact location details, although it is mapped within the general vicinity of the city of Tracy. No ecological details were provided with this occurrence. The expected extant range of this species is near but outside of the BSA (Hatfield et al. 2014).

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Special-status Wildlife Species with Potential to Occur in the BSA

Viracocha Hill BESS Project

Scientific Name	Common Name	Status ^[a]			Habitat	Potential For Occurrence within the BSA
		Federal	State	CDFW		
<i>Branchinecta conservatio</i>	Conservancy fairy shrimp	E	-	-	Inhabits vernal pools in California's Central Valley from Tehama County in the north to Merced County in the south. There is one outlying population in Ventura County's Interior Coast Ranges.	Absent. Vernal pool habitat is absent from the BSA.
<i>Branchinecta longiantenna</i>	Longhorn fairy shrimp	E	-	-	Found from eastern margin of central Coast Ranges from Contra Costa to San Luis Obispo Counties; disjunct population in Madera County. Inhabits small, clear pools in sandstone rock outcrops of clear to moderately turbid clay- or grass-bottomed pools.	Absent. Vernal pool habitat is absent from the BSA.
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	T	-	-	Found in Central Valley, central and south Coast Ranges from Tehama to Santa Barbara Counties; isolated populations in Riverside County. They are common in vernal pools; also found in sandstone rock outcrop pools.	Absent. Vernal pool habitat is absent from the BSA.
<i>Danaus plexippus</i>	Monarch butterfly	C	-	-	Flowering plants and milkweed are required components of monarch habitat. Habitat includes annual grassland. Adult monarchs feed on the nectar of many flowers during breeding and migration, but they lay eggs on milkweed plants.	Low Potential. Habitat for this species, including annual grassland, floral nectar plants, and larval host plant narrow-leafed milkweed (<i>Asclepias fascicularis</i>) occurs within the BSA. However, current land use and a long history of heavy grazing, as well as naturally high wind conditions reduce potential for this species to

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Special-status Wildlife Species with Potential to Occur in the BSA

Viracocha Hill BESS Project

Scientific Name	Common Name	Status ^[a]			Habitat	Potential For Occurrence within the BSA
		Federal	State	CDFW		
						occur. The nearest CNDDDB occurrence is more than 10 miles southeast of the BSA. There is a Western Monarch Milkweed Mapper observation 9 miles south of the BSA from 2023 (Western Monarch Milkweed Mapper 2025).
<i>Lepidurus packardii</i>	Vernal pool tadpole shrimp	T	-	-	Found in vernal pools and ephemeral stock ponds from Shasta to Merced Counties.	Absent. Vernal pool habitat is absent from the BSA.
<i>Desmocerus californicus</i>	Valley elderberry longhorn beetle	T	-	-	Found throughout the Central Valley in riparian and oak savanna habitats with elderberry shrubs and streamside habitats less than 3,000 feet above sea level. Elderberry shrub is the host plant.	Absent. Elderberry host plants are absent from the BSA.
Fish						
<i>Acipenser medirostris</i>	Green sturgeon	T	-	SSC	Found in marine waters of the Pacific Ocean from the Bering Sea to Ensenada, Mexico. Uses rivers from British Columbia south to the Sacramento River, primarily in the Klamath/Trinity and Sacramento Rivers, for spawning.	Absent. BSA is outside of species' known range, and no suitable habitat is present in BSA.
<i>Hypomesus transpacificus</i>	Delta smelt	T	E	-	Sacramento–San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait, and San Pablo Bay. Seldom found at salinities greater	Absent. No suitable marine or estuarine habitat is present within the BSA.

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Special-status Wildlife Species with Potential to Occur in the BSA

Viracocha Hill BESS Project

Scientific Name	Common Name	Status ^[a]			Habitat	Potential For Occurrence within the BSA
		Federal	State	CDFW		
					than 10 ppt. Most often at salinities less than 2 ppt.	
<i>Oncorhynchus mykiss</i>	Steelhead - Central Valley DPS	T	-	-	Inhabits Sacramento and San Joaquin Rivers and their Tributaries. Spawns and spends a portion of its life in inland streams, typically maturing in the open ocean	Absent. No perennial streams suitable for anadromous fish are present in the BSA.
<i>Spirinchus thaleichthys</i>	Longfin smelt	C	T	-	Euryhaline, nektonic, and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column.	Absent. No suitable marine or estuarine habitat is present within the BSA.
<i>Thaleichthys pacificus</i>	eulachon	T	-	SSC	Spawns in major river systems along the Pacific coast and spends the majority of its life in coastal waters.	Absent. No suitable marine or estuarine habitat is present within the BSA.
Amphibians						
<i>Ambystoma californiense</i>	California tiger salamander - Central California DPS Population 1	T	T	WL	Needs underground refuges, especially ground squirrel, gopher, or other fossorial mammal burrows, and vernal pools or other generally seasonal water sources for breeding uses.	Present. Highly suitable upland habitat with suitable burrows is present within the BSA. Suitable breeding habitat within known migratory distances for the species is also present in the form of ephemeral pools and stock ponds. This species has been incidentally observed by Jacobs biologists breeding 0.75 mile south of the BSA. There are 218 CNDDDB occurrences within 10 miles of the BSA, with the closest occurrence located approximately 0.12 mile west of the BSA (CDFW 2025).

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Viracocha Hill BESS Project

Scientific Name	Common Name	Status ^[a]			Habitat	Potential For Occurrence within the BSA
		Federal	State	CDFW		
<i>Rana boylei</i>	Foothill yellow-legged frog – West/Central Coast DPS	T	E	SSC	Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.	Absent. No suitable aquatic habitat is present within the BSA.
<i>Rana draytonii</i>	California red-legged frog	T	-	SSC	Found along the coast and coastal mountain ranges of California from Mendocino County to San Diego County and in the Sierra Nevada from Butte County to Stanislaus County. Requires permanent and semi-permanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation; may estivate in rodent burrows or cracks during dry periods.	Present. The BSA provides highly suitable upland dispersal habitat and aquatic non-breeding habitat. The pond within the BSA does not contain suitable emergent vegetation to be considered breeding habitat. This species has been incidentally observed by Jacobs biologists breeding 0.75 mile south of the BSA, and adults were observed incidentally by Jacobs biologists 0.2 mile west of the Project. There are 212 CNDDDB occurrences within 10 miles of the BSA, with the closest occurrence located approximately 0.12 mile west of the BSA (CDFW 2025).
Critical habitat, <i>Rana draytonii</i>	Critical habitat, California red-legged frog	T	-	SSC	Physical or biological features designations include: 1) aquatic breeding habitat, 2) aquatic non-breeding habitat, 3) upland habitat, 4) dispersal habitat.	Present. The BSA is entirely within critical habitat for California red-legged frog and contains suitable upland dispersal and aquatic non-breeding habitat. (Unit ALA-2).
<i>Spea hammondi</i>	Western spadefoot	FPT	-	SSC	Found in soil cracks and burrows within grasslands, scrublands, chaparral, and woodlands in the Sierra Nevada foothills,	High Potential. The BSA is within the species' known range, and suitable upland and breeding habitat is present. There are five CNDDDB

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Scientific Name	Common Name	Status ^[a]			Habitat	Potential For Occurrence within the BSA
		Federal	State	CDFW		
					Central Valley, Coast Ranges, and coastal counties in southern California. Breeds in a wide variety of slow-moving or stagnant waters, including puddles, vernal pools, stock ponds, and slow-moving streams.	occurrences within 10 miles of the BSA, the closest being 6.1 miles south of the BSA (CDFW 2025).
Reptiles						
<i>Actinemys marmorata</i>	Northwestern pond turtle	FPT	-	SSC	Occupies ponds, marshes, rivers, streams, and irrigation canals from Baja California to Washington with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests. Nests are typically constructed in upland habitat within 0.25 mile of aquatic habitat.	High Potential. Suitable upland nesting habitat is present in the BSA. Five adult western pond turtles were incidentally observed by Jacobs biologists in a pond 0.3 mile northeast of the BSA in April 2025, adjacent to Bethany Reservoir, during spring Swainson's hawk surveys for the Project.
<i>Anniella pulchra</i>	Northern California legless lizard	-	-	SSC	Occurs in moist warm loose soil with plant cover. Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Leaf litter under trees and bushes in sunny areas and dunes stabilized with bush lupine and mock heather often indicate suitable habitat.	Absent. The BSA is within the known range of this species, but microhabitat variables, including moist soils and leaf litter are absent from the BSA. There are three CNDDB occurrences of this species within 10 miles of the BSA, the closest being 7.77 miles southeast of the BSA (CDFW 2025).

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Special-status Wildlife Species with Potential to Occur in the BSA

Viracocha Hill BESS Project

Scientific Name	Common Name	Status ^[a]			Habitat	Potential For Occurrence within the BSA
		Federal	State	CDFW		
<i>Arizona elegans occidentalis</i>	California glossy snake	-	-	SSC	Habitats include barren to sparse shrubby desert, sagebrush flats, grassland, sandhills, coastal scrub, chaparral slopes, and sometimes oak-hickory woodland, generally in open areas with sandy or loamy soil, though rocks may be present. Burrows underground in small mammal burrows.	Moderate Potential. Suitable habitat is present in the BSA, and the BSA overlaps the northern extent of the species' range. There are six CNDDDB occurrences within 10 miles of the BSA, the closest being 4.27 miles south of the BSA (CDFW 2025).
<i>Masticophis flagellum ruddocki</i>	San Joaquin coachwhip	-	-	SSC	Occurs in open, dry, vegetative associations with little or no tree cover; in valley grassland and saltbush scrub associations; and often occurs in association with mammal burrows from Colusa County in the Sacramento Valley southward to the grapevine in the San Joaquin Valley and westward into the inner coast ranges.	Moderate Potential. Suitable grassland habitat is present within the BSA; known occurrences approximately 3.88 miles southwest of the BSA (CDFW 2025).
<i>Masticophis lateralis euryxanthus</i>	Alameda whipsnake	T	T	-	Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna, and woodland habitats. Mostly south-facing slopes and ravines, with rock outcrops, deep crevices, or abandoned rodent burrows.	Absent. Although marginally suitable dispersal/grassland habitat is present within the BSA, the BSA lacks significant areas of shrub/scrub habitat that this species prefers, and the Project is outside the species' known range.
<i>Phrynosoma blainvilli</i>	Blainville's (= Coast) horned lizard	-	-	SSC	Found in grasslands, brushlands, woodlands, and open coniferous forest with sandy or	Low Potential. Annual grasslands in the BSA provide potential habitat for the species. Loose soils and basking areas are also present within

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Special-status Wildlife Species with Potential to Occur in the BSA

Viracocha Hill BESS Project

Scientific Name	Common Name	Status ^[a]			Habitat	Potential For Occurrence within the BSA
		Federal	State	CDFW		
					loose soil; requires abundant ant colonies for foraging.	the BSA. The BSA is within the species' historical range but is outside its extant range (Hansen and Shedd 2025). There are 12 CNDDDB occurrences within 10 miles of the BSA, the closest being 3.84 miles south of the BSA (CDFW 2025).
<i>Thamnophis gigas</i>	Giant garter snake	T	T	-	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the garter snakes in California.	Absent. Outside the known range of this species (Hansen and Shedd 2025), and no suitable marsh or aquatic habitat is present in the BSA.
Birds						
<i>Accipiter cooperii</i>	Cooper's hawk	-	-	WL	Inhabits a wide variety of habitats and nests primarily in large trees in dense forested areas.	Low Potential. The BSA does not provide the forested or semi-open woodland habitat that this species prefers. This species is not expected to nest in the BSA but may fly through the BSA.
<i>Agelaius tricolor</i>	Tricolored blackbird	-	T	SSC	Requires open water and protected nesting substrate, which may also occur in uplands, and foraging areas with insect prey within a few kilometers of the colony.	Present. A flock of 200 tricolored blackbird was observed foraging in the BSA during 2025 wildlife surveys. There are 20 CNDDDB occurrences within 10 miles of the BSA (CDFW 2025). Suitable foraging habitat is present within the BSA. The BSA does not contain high-quality nesting habitat for this species, and nesting is not expected.

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Scientific Name	Common Name	Status ^[a]			Habitat	Potential For Occurrence within the BSA
		Federal	State	CDFW		
<i>Ammodramus savannarum</i>	Grasshopper sparrow	-	-	SSC	Inhabits grasslands, prairies, hayfields, and open pastures with little to no scrub cover and often with some bare ground. Nests on the ground within grasslands.	High Potential. Suitable habitat is present throughout the BSA. There is one CNDDDB occurrence of this species within 10 miles of the BSA, approximately 6.4 miles southeast of the BSA (CDFW 2025).
<i>Aquila chrysaetos</i>	Golden eagle	-	-	FP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Present. The species is known to occur in the APWRA and was observed soaring over the BSA during 2024 and 2025 surveys; suitable foraging habitat is present within the BSA. No suitable nesting habitat is present in the BSA, but golden eagles are known to nest within 1 mile of planned activities.
<i>Asio flammeus</i>	Short-eared owl	-	-	SSC	Forages in open grasslands, meadows, prairies, and tundra. Nests on the ground in tall, grassy vegetation.	Present. The BSA contains suitable foraging and nesting habitat. This species was observed approximately 0.95 mile east in 2023 during biological surveys for a neighboring Project. There is one CNDDDB occurrence within 10 miles of the BSA, approximately 7 miles southeast of the BSA (CDFW 2025).
<i>Athene cunicularia hypugaea</i>	Western burrowing owl	-	C	SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation.	Present. Suitable grassland habitat is present, and this species was observed in the BSA during 2024 and 2025 surveys.

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Scientific Name	Common Name	Status ^[a]			Habitat	Potential For Occurrence within the BSA
		Federal	State	CDFW		
<i>Buteo regalis</i>	Ferruginous hawk	-	-	WL	Inhabits open, arid grasslands, prairie, and shrub steppe regions across North America, where it breeds in areas with cliffs, outcrops, and tree groves for nesting.	Present. Species has been observed in the BSA during 2024 and 2025 surveys but is only present in the region during the winter nonbreeding season.
<i>Buteo swainsoni</i>	Swainson's hawk	-	T	-	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannas, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Present. Suitable foraging habitat is present within the BSA, and suitable nesting habitat is present within 0.5 mile of the BSA. There are 49 CNDDDB occurrences within 10 miles of the BSA, with the closest occurrence located approximately 1.25 miles northwest of the BSA (CDFW 2025). This species was observed soaring over the BSA during 2025 surveys.
<i>Circus hudsonius</i>	Northern harrier	-	-	SSC	Coastal salt and freshwater marshes, nesting and foraging habitats in grasslands and agricultural fields.	Present. Species was observed in the BSA during 2024 and 2025 surveys; suitable nesting and foraging habitat is present in annual grasslands throughout the BSA.
<i>Elanus leucurus</i>	White-tailed kite	-	-	FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland.	High Potential. Species is known to occur in the APWRA; suitable nesting habitat is limited to a few eucalyptus trees near the BSA; species could forage in annual grassland throughout the BSA. The nearest documented nest is 1.78 miles northeast of the BSA (CDFW 2025).

Biological Resources

Appendix B Special-status Wildlife Species with Potential to Occur in the BSA Viracocha Hill BESS Project

Scientific Name	Common Name	Status ^[a]			Habitat	Potential For Occurrence within the BSA
		Federal	State	CDFW		
<i>Eremophila alpestris actia</i>	California horned lark	-	-	WL	Found from grasslands along the coast and deserts near sea level to alpine dwarf-shrub habitat above treeline. Nests on the ground within grasslands.	Present. This species has been observed in the BSA during 2024 and 2025 surveys. Suitable nesting habitat is present throughout the BSA.
<i>Falco mexicanus</i>	Prairie falcon	-	-	WL	Inhabits open habitats ranging from tundra, chaparral, desert, and grassland prairies. Nests on cliff ledges.	Present. This species was observed during 2024 and 2025 surveys. Suitable foraging habitat is present in the BSA, but nesting habitat is absent.
<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	Delisted	FP	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large populations of other bird species.	Low Potential. Potential winter migrant; foraging areas are limited and no suitable nesting habitat is present in the BSA.
<i>Gymnogyps californianus</i>	California condor	E	E	FP	Lives in rocky shrubland, coniferous forest, grassland, and oak savanna. They are often found near cliffs or large trees, which they use as nesting sites.	Low Potential. Suitable nesting habitat is absent from the BSA, and foraging habitat is marginal. Species may fly over the BSA during migration events.
<i>Haliaeetus leucocephalus</i>	Bald eagle	Delisted	E	FP	Requires large bodies of water with an abundant fish population. Feeds on fish, carrion, small mammals, and waterfowl. Nests are usually located within a 1-mile radius of water. Nests are most often situated in large trees with a commanding view of the area.	Present. Species winters in the APWRA and may forage near the BSA at Bethany Reservoir approximately 0.5 mile east; however, no suitable nesting or high-quality foraging habitat (large lakes, reservoirs, or rivers) is present in the BSA. Evidence of potential nesting within 1 mile of the BSA is minimal, but potential nesting substrates, such as large

Biological Resources

Appendix B

Special-status Wildlife Species with Potential to Occur in the BSA

Viracocha Hill BESS Project

Scientific Name	Common Name	Status ^[a]			Habitat	Potential For Occurrence within the BSA
		Federal	State	CDFW		
						eucalyptus trees and high-voltage power line towers, exist within 1 mile of the BSA. A pair of bald eagles was observed soaring over the BSA during 2024 and 2025 surveys. Bald eagle copulation was observed near the BSA during spring 2025 surveys.
<i>Lanius ludovicianus</i>	Loggerhead shrike	-	-	SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub, and washes. Prefers open country for hunting, with perches and fairly dense shrubs and brush for nesting.	Present. Suitable foraging habitat is present and this species was observed within BSA during 2025 surveys. Nesting is unlikely to occur within the BSA, as dense thickets of brush and trees are absent.
<i>Melospiza melodia pop. 1</i>	Song sparrow (Modesto population)	-	-	SSC	Nests in dense vegetation low to the ground, often near bodies of standing water. Forages in a variety of woodland, riparian, and grassland habitats.	Moderate Potential. Suitable foraging habitat is present within the BSA, but nesting habitat is absent. The BSA represents the extreme western edge of the species' range. There are eight CNDDDB occurrences of this species within 10 miles of the BSA, the closest being 4.56 miles northeast of the BSA (CDFW 2025).
Mammals						
<i>Antrozous pallidus</i>	Pallid bat	-	-	SSC	Occurs in a variety of habitats from desert to coniferous forest; most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in Northern California. Prefers rocky outcrops, cliffs, and crevices	Low Potential. Roosting habitat is absent from the BSA, but this species may fly through the BSA during migrations or while foraging. There is one CNDDDB occurrence of this species within 10 miles of the BSA (CDFW 2025).

Biological Resources

Appendix B

Special-status Wildlife Species with Potential to Occur in the BSA

Viracocha Hill BESS Project

Scientific Name	Common Name	Status ^[a]			Habitat	Potential For Occurrence within the BSA
		Federal	State	CDFW		
					with access to open habitats for foraging. Uses caves, crevices, mines, and hollow trees for roosting.	
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	-	-	SSC	Roosts in caves, tunnels, mines, crevices, hollow trees, and buildings; usually near water throughout California.	Low Potential. Roosting habitat is absent from the BSA, but this species may fly through the BSA during migrations or while foraging. There is one CNDDDB occurrence of this species within 10 miles of the BSA (CDFW 2025).
<i>Neotoma fuscipes annectens</i>	San Francisco dusky-footed woodrat	-	-	SSC	Inhabits forested and riparian habitats throughout the San Francisco Bay Area south towards the Santa Clara Valley. Creates large stick nests, referred to as middens.	Absent. The BSA is east of the known range of this species.
<i>Taxidea taxus</i>	American badger	-	-	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents.	Presumed Present. Suitable habitat is present throughout the BSA. Jacobs biologists observed one adult badger at a den incidentally on April 8, 2025, 0.13 mile northeast of the BSA during spring burrowing owl surveys that were conducted within 547 yards of the project footprint. Badger digging sign has been observed within the BSA, but no individuals have been observed within the BSA.

Biological Resources

Appendix B

Special-status Wildlife Species with Potential to Occur in the BSA

Viracocha Hill BESS Project

Scientific Name	Common Name	Status ^[a]			Habitat	Potential For Occurrence within the BSA
		Federal	State	CDFW		
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	E	T	-	Annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose-textured sandy soils for burrowing, and suitable prey base.	Low Potential. Annual grassland habitat in the BSA provides potential dispersal and denning habitat for San Joaquin kit fox. There are 35 CNDDDB occurrences within 10 miles of the BSA, with the closest occurrence located approximately 0.13 mile northwest of the BSA (CDFW, 2025). The likelihood of occurrence is low because the species has not been detected in the Project vicinity in 25 years; dispersing San Joaquin kit foxes could, however, travel through or den in the BSA at the time of construction and operation.

^[a] Status abbreviations:

- = not listed

C = Candidate

CE = Candidate Endangered

E = Endangered

FP = Fully Protected

SSC = CDFW Species of Special Concern

T = Threatened

WL = Watch List

Units:

ppt = parts per thousand

Citations:

California Department of Fish and Wildlife (CDFW). 2025. Biogeographic Information and Observation System. Available online: <https://apps.wildlife.ca.gov/bios6/>

Hansen, Robert W. and Jackson D. Shedd. 2025. *California Amphibians and Reptiles*. Princeton University Press.

Western Monarch Milkweed Mapper. 2025. Accessed April 24, 2025. <https://www.monarchmilkweedmapper.org/>.

Appendix C

Plant Species Observed in the BSA during Surveys



Table C-1. Plant Species Observed in the BSA during Surveys

Family	Scientific Name	Common Name	Native or Naturalized	Cal-IPC Rank
EUDICOTS				
APIACEAE				
	<i>Sanicula bipinnata</i>	poison sanicle	Native	
	<i>Sanicula bipinnatifida</i>	purple sanicle	Native	
APOCYNACEAE				
	<i>Asclepias fascicularis</i>	narrow-leaf milkweed	Native	
ASTERACEAE				
	<i>Achillea millefolium</i>	yarrow	Native	
	<i>Achyrrachaena mollis</i>	soft blow-wives	Native	
	<i>Carduus pycnocephalus</i>	Italian thistle	Naturalized	Moderate
	<i>Carduus tenuiflorus</i>	slender-flowered thistle	Naturalized	Limited
	<i>Centaurea melitensis</i>	Tocalote	Naturalized	Moderate
	<i>Centromadia pungens</i> ssp. <i>pungens</i>	common spikeweed	Native	
	<i>Cotula coronopifolia</i>	brass buttons	Naturalized	Limited
	<i>Crepis versicaria</i> ssp. <i>taraxifolia</i>	rough hawksbeard	Naturalized	
	<i>Deinandra lobbiai</i>	threeray tarweed	Native	
	<i>Dittrichia graveolens</i>	stinkwort	Naturalized	Moderate
	<i>Grindelia camporum</i>	common gumplant	Native	
	<i>Gutierrezia californica</i>	snakeweed	Native	
	<i>Hypochaeris glabra</i>	smooth cat's-ear	Naturalized	Limited
	<i>Hypochaeris radicata</i>	rough cat's-ear	Naturalized	Moderate
	<i>Lactuca serriola</i>	prickly lettuce	Naturalized	
	<i>Logfia gallica</i>	narrow cottonrose	Naturalized	
	<i>Madia gracilis</i>	gumweed madia	Native	
	<i>Matricaria discoidea</i>	pineapple weed	Native	
	<i>Micropus californicus</i> var. <i>californicus</i>	California cottontop	Native	
	<i>Pseudognaphalium</i> sp.	cudweed	?	
	<i>Silybum marianum</i>	milk thistle	Naturalized	Limited
	<i>Sonchus asper</i>	sow thistle	Naturalized	

Family	Scientific Name	Common Name	Native or Naturalized	Cal-IPC Rank
BORAGINACEAE				
	<i>Amsinckia lycopoides</i>	tarweed fiddleneck	Native	
	<i>Amsinckia menziesii</i>	common fiddleneck	Native	
	<i>Cryptantha flaccida</i>	pale cryptantha	Native	
	<i>Plagiobothrys canescens</i> var. <i>canescens</i>	valley popcornflower	Native	
BRASSICACEAE				
	<i>Brassica nigra</i>	black mustard	Naturalized	Moderate
	<i>Capsella bursa-pastoris</i>	shepherd's purse	Naturalized	
	<i>Hirschfeldia incana</i>	shortpod mustard	Naturalized	Moderate
	<i>Lepidium nitidum</i>	shining pepper grass	Naturalized	
	<i>Raphanus sativus</i>	radish	Naturalized	Limited
	<i>Sinapis arvensis</i>	charlock	Naturalized	Limited
	<i>Sisymbrium irio</i>	London rocket	Naturalized	Limited
CARYOPHYLLACEAE				
	<i>Silene gallica</i>	small-flower catchfly	Naturalized	
	<i>Spergularia rubra</i>	red sand spurry	Naturalized	
	<i>Stellaria media</i>	chickweed	Naturalized	
CHENOPODIACEAE				
	<i>Chenopodium californicum</i>	California goosefoot	Native	
	<i>Chenopodium murale</i>	nettle-leaf goosefoot	Naturalized	
CONVOLVULACEAE				
	<i>Convolvulus arvensis</i>	bindweed	Naturalized	
CRASSULACEAE				
	<i>Crassula connata</i>	pygmy-weed	Native	
CUCURBITACEAE				
	<i>Marah fabacea</i>	California man-root	Native	
EUPHORBIACEAE				
	<i>Croton setiger</i>	turkey-mullein	Native	
FABACEAE				
	<i>Acmispon brachycarpus</i>	hill lotus	Native	
	<i>Acmispon wrangelianus</i>	California lotus	Native	

Family	Scientific Name	Common Name	Native or Naturalized	Cal-IPC Rank
	<i>Astragalus asymmetricus</i>	San Joaquin milkvetch	Native	
	<i>Lupinus bicolor</i>	miniature lupine	Native	
	<i>Lupinus microcarpus</i>	chick lupine	Native	
	<i>Medicago polymorpha</i>	Californica burclover	Naturalized	Limited
	<i>Melilotus indicus</i>	yellow indigo	Naturalized	
	<i>Trifolium depauperatum</i> var. <i>depauperatum</i>	sack clover	Native	
	<i>Trifolium hirtum</i>	rose clover	Naturalized	Limited
	<i>Trifolium oliganthum</i>	few flowered clover	Native	
	<i>Trifolium variegatum</i>	variegated clover	Native	
GERANIACEAE				
	<i>Erodium botrys</i>	large storkbill	Naturalized	
	<i>Erodium cicutarium</i>	redstem filaree	Naturalized	Limited
	<i>Erodium moschatum</i>	greenstem filaree	Naturalized	
HELIOTROPIACEAE				
	<i>Heliotropium curassavicum</i> var. <i>oculatum</i>	alkali heliotrope	Native	
LAMIACEAE				
	<i>Trichostema lanceolatum</i>	vinegar weed	Native	
MALVACEAE				
	<i>Malvella leprosa</i>	alkali mallow	Native	
MONTIACEAE				
	<i>Calandrinia menziesii</i>	red maids	Native	
MYRSINACEAE				
	<i>Lysimachia arvensis</i>	scarlet pimpernel	Naturalized	
OROBANCHACEAE				
	<i>Castilleja exserta</i> ssp. <i>exserta</i>	purple owl's clover	Native	
PAPAVERACEAE				
	<i>Eschscholzia californica</i>	California poppy	Native	
PLANTAGINACEAE				
	<i>Plantago erecta</i>	California dropseed	Native	

Family	Scientific Name	Common Name	Native or Naturalized	Cal-IPC Rank
POLYGONACEAE				
	<i>Polygonum aviculare</i>	knotweed	Naturalized	
	<i>Pterostegia drymarioides</i>	fairy mist	Native	
	<i>Rumex pulcher</i>	curly dock	Naturalized	
RANUNCULACEAE				
	<i>Delphinium variegatum</i>	royal larkspur	Native	
	<i>Ranunculus californicus</i> var. <i>californicus</i>	California buttercup	Native	
RUBIACEAE				
	<i>Sherardia arvensis</i>	field madder	Naturalized	
SOLANACEAE				
	<i>Solanum americanum</i>	American black nightshade	Native	
MONOCOTS				
AGAVACEAE				
	<i>Chlorogalum pomeridianum</i>	soaproot	Native	
POACEAE				
	<i>Avena barbata</i>	slender wild oats	Naturalized	Moderate
	<i>Avena fatua</i>	wild oats	Naturalized	Moderate
	<i>Bromus diandrus</i>	ripgut brome	Naturalized	Moderate
	<i>Bromus hordeaceus</i>	softchess brome	Naturalized	Limited
	<i>Bromus madritensis</i>	foxtail brome	Naturalized	
	<i>Distichlis spicata</i>	salt grass	Native	
	<i>Festuca microstachys</i>	small fescue	Native	
	<i>Festuca myuros</i>	rattail grass	Naturalized	Moderate
	<i>Festuca perennis</i>	Italian ryegrass	Naturalized	Moderate
	<i>Hordeum marinum</i>	Mediterranean barley	Naturalized	Moderate
	<i>Hordeum murinum</i> ssp. <i>leporinum</i>	farmer's barley	Naturalized	Moderate
	<i>Phalaris canariensis</i>	canary grass	Naturalized	
	<i>Phalaris minor</i>	little-seeded canary grass	Naturalized	
	<i>Poa secunda</i>	bluegrass	Naturalized	
	<i>Polypogon monspeliensis</i>	rabbitfoot grass	Naturalized	Limited
	<i>Stipa pulchra</i>	purple needle grass	Native	

Biological Resources

Family	Scientific Name	Common Name	Native or Naturalized	Cal-IPC Rank
THEMIDIACEAE				
	<i>Brodiaea elegans</i>	harvest brodiaea	Native	
	<i>Dipterostemon capitatus</i> ssp. <i>capitatus</i>	bluedicks	Native	
	<i>Triteleia laxa</i>	Ithuriel's spear	Native	

Notes:

California Invasive Plant Council (Cal-IPC) Ranks:

High – These species have severe ecological impacts on physical processes. Most are widely distributed ecologically.

Moderate – These species have substantial and apparent, but generally not severe, ecological impacts. Ecological amplitude and distribution may range from limited to widespread.

Limited – These species are invasive, but their ecological impacts are minor. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Watch – These species have been assessed as posing a high risk of becoming invasive in the future.

Appendix D

Wildlife Species Observed



Biological Resources

Appendix D Wildlife Species Observed Viracocha Hill BESS Project

Wildlife Classification	Common Name	Species Name	Status ^[a]		
			Federal	State	CDFW
Birds	Golden eagle	<i>Aquila chrysaetos</i>	-	-	FP
Birds	Red-tailed hawk	<i>Buteo jamaicensis</i>	-	-	-
Birds	Ferruginous hawk	<i>Buteo regalis</i>	-	-	WL
Birds	Swainson's hawk	<i>Buteo swainsoni</i>	-	T	-
Birds	Northern harrier	<i>Circus hudsonius</i>	-	-	SSC
Birds	Bald eagle	<i>Haliaeetus leucocephalus</i>	Delisted	E	FP
Birds	California horned lark	<i>Eremophila alpestris actia</i>	-	-	WL
Birds	Mallard	<i>Anas platyrhynchos</i>	-	-	-
Birds	Bufflehead	<i>Bucephala albeola</i>	-	-	-
Birds	Common merganser	<i>Mergus merganser</i>	-	-	-
Birds	Great egret	<i>Ardea alba</i>	-	-	-
Birds	Great blue heron	<i>Ardea herodias</i>	-	-	-
Birds	Turkey vulture	<i>Cathartes aura</i>	-	-	-
Birds	Killdeer	<i>Charadrius vociferus</i>	-	-	-
Birds	Eurasian collared-dove	<i>Streptopelia decaocto</i>	-	-	-
Birds	Mourning dove	<i>Zenaida macroura</i>	-	-	-
Birds	American crow	<i>Corvus brachyrhynchos</i>	-	-	-
Birds	Common raven	<i>Corvus corax</i>	-	-	-
Birds	Prairie falcon	<i>Falco mexicanus</i>	-	-	WL
Birds	American kestrel	<i>Falco sparverius</i>	-	-	-
Birds	Red-winged blackbird	<i>Agelaius phoeniceus</i>	-	-	-
Birds	Tricolored blackbird	<i>Agelaius tricolor</i>	-	T	SSC
Birds	Brewer's blackbird	<i>Euphagus cyanocephalus</i>	-	-	-
Birds	Western meadowlark	<i>Sturnella neglecta</i>	-	-	-
Birds	Loggerhead shrike	<i>Lanius ludovicianus</i>	-	-	SSC
Birds	Gull species	<i>Laridae</i>	-	-	-
Birds	Savannah sparrow	<i>Passerculus sandwichensis</i>	-	-	-
Birds	White-crowned sparrow	<i>Zonotrichia leucophrys</i>	-	-	-
Birds	Double-crested cormorant	<i>Nannopterum auritum</i>	-	-	-

Appendix D
Wildlife Species Observed
Viracocha Hill BESS Project

Wildlife Classification	Common Name	Species Name	Status ^[a]		
			Federal	State	CDFW
Birds	Northern flicker	<i>Colaptes auratus</i>	-	-	-
Birds	Nuttall's woodpecker	<i>Picoides nuttallii</i>	-	-	-
Birds	Pied-billed grebe	<i>Podilymbus podiceps</i>	-	-	-
Birds	Mountain bluebird	<i>Sialia currucoides</i>	-	-	-
Birds	European starling	<i>Sturnus vulgaris</i>	-	-	-
Birds	Rufous hummingbird	<i>Selasphorus rufus</i>	-	-	-
Birds	Marsh wren	<i>Cistothorus palustris</i>	-	-	-
Birds	Black phoebe	<i>Sayornis nigricans</i>	-	-	-
Birds	Western kingbird	<i>Tyrannus verticalis</i>	-	-	-
Birds	Short-eared owl	<i>Asio flammeus</i>	-	-	SSC
Birds	Western burrowing owl	<i>Athene cunicularia</i>	-	C	SSC
Birds	Barn owl	<i>Tyto alba</i>	-	-	-
Mammals	American badger	<i>Taxidea taxa</i>	-	-	SSC
Mammals	California ground squirrel	<i>Otospermophilus beecheyi</i>	-	-	-
Mammals	Black-tailed jackrabbit	<i>Lepus californicus</i>	-	-	-
Mammals	cottontail	<i>Sylvilagus audubonii</i>	-	-	-
Reptiles	Northern Pacific rattlesnake	<i>Crotalus oreganus</i>	-	-	-
Reptiles	Gopher snake	<i>Pituophis catenifer</i>	-	-	-
Reptiles	Northwestern pond turtle	<i>Actinemys marmorata</i>	FP, T	-	SSC
Reptiles	Western fence lizard	<i>Sceloporus occidentalis</i>	-	-	-
Amphibians	Sierran treefrog	<i>Pseudacris regilla</i>	-	-	-
Amphibians	California toad	<i>Anaxyrus boreas halophilus</i>	-	-	-

^[a] Status abbreviations:

- = not listed

C = Candidate

E = Endangered

FP = Fully Protected

SSC = CDFW Species of Special Concern

T = Threatened

WL = Watch List

Appendix E

Wetland Determination Data Forms



WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Viracocha BESS Project City/County: Alameda County Sampling Date: 3/18/2025
 Applicant/Owner: Reclaimed Wind, LLC State: CA Sampling Point: SP-1
 Investigator(s): G. Davis, P. Laulikitnont-Lee Section, Township, Range: S 11, T2S, R3E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5-10
 Subregion (LRR): C Lat: 37.771884 Long: -121.622323 Datum: WGS 84
 Soil Map Unit Name: Sa - San Ysidro loam, 0-2% slopes, MLRA 14 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 ☒ 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 ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Sampling point is located on a cattle trail that is visible on aerial imagery as a darker, linear signature on the landscape.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ _____ = Total Cover Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover Herb Stratum (Plot size: <u>5 ft x 5 ft</u>) 1. <u>Festuca perennis</u> <u>40</u> <u>Y</u> <u>FAC</u> 2. <u>Avena barbata</u> <u>30</u> <u>Y</u> <u>NL</u> 3. <u>Erodium moschatum</u> <u>10</u> <u>N</u> <u>NL</u> 4. <u>Hirschfeldia incana</u> <u>5</u> <u>N</u> <u>NL</u> 5. _____ 6. _____ 7. _____ 8. _____ _____ = Total Cover Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover % Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust _____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B) Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>45</u> x 5 = <u>215</u> Column Totals: <u>85</u> (A) <u>335</u> (B) Prevalence Index = B/A = <u>3.9</u> Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☐ No ☒
Remarks:	

SOILSampling Point: SP-1**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 4/3	100					SiL	fine sands present
6-18	10YR 3/3	100					C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (**LRR C**)
☐ 1 cm Muck (A9) (**LRR D**)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

HYDROLOGY**Wetland Hydrology Indicators:**

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

☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1) (**Nonriverine**)
☐ Sediment Deposits (B2) (**Nonriverine**)
☐ Drift Deposits (B3) (**Nonriverine**)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Water-Stained Leaves (B9)

☐ Salt Crust (B11)
☐ Biotic Crust (B12)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:Surface Water Present? Yes _____ No ☒ Depth (inches): _____Water Table Present? Yes _____ No ☒ Depth (inches): _____Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)**Wetland Hydrology Present?** Yes _____ No ☒

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

Remarks:

According to the Palmer Drought Severity Index (PDSI), the project site was subject to severe drought conditions at the time of the survey, however antecedent precipitation conditions were considered to normal.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Viracocha BESS Project City/County: Alameda County Sampling Date: 3/18/2025
 Applicant/Owner: Reclaimed Wind, LLC State: CA Sampling Point: SP-2
 Investigator(s): G. Davis, P. Laulikitnont-Lee Section, Township, Range: S 11, T2S, R3E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 0-5
 Subregion (LRR): C Lat: 37.7687194 Long: -121.6187868 Datum: WGS 84
 Soil Map Unit Name: ArD - Altamont clay, 15-30% slopes, MLRA 15 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 ☒ 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 ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Sampling point is located within a broad swale / topographic low point on the landscape and is associated with a modeled USGS NHD flow line, however the site is an upland.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>70</u> x 3 = <u>210</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>100</u> (A) <u>315</u> (B) Prevalence Index = B/A = <u>3.15</u>
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft x 5 ft</u>)				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Festuca perennis</u>	<u>70</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Hordeum murinum</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Bromus diandrus</u>	<u>5</u>	<u>N</u>	<u>NI</u>	
4. <u>Capsella bursa-pastoris</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			

Remarks:	Hydrophytic Vegetation Present? Yes ☐ No ☒
----------	--

SOIL

Sampling Point: SP-2

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		
According to the Palmer Drought Severity Index (PDSI), the project site was subject to severe drought conditions at the time of the survey, however antecedent precipitation conditions were considered to normal.		

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Viracocha BESS Project City/County: Alameda County Sampling Date: 3/18/2025
 Applicant/Owner: Reclaimed Wind, LLC State: CA Sampling Point: SP-3
 Investigator(s): G. Davis, P. Laulikitnont-Lee Section, Township, Range: S 11, T2S, R3E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 0-5
 Subregion (LRR): C Lat: 37.767537 Long: -121.617039 Datum: WGS 84
 Soil Map Unit Name: ArD - Altamont clay, 15-30% slopes, MLRA 15 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 ☒ 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 ☐	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Sampling point is located immediately downslope of a culvert outlet and is situated within a vegetated, constructed ditch.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☒ No ☐
Herb Stratum (Plot size: <u>5 ft x 5 ft</u>)	_____	_____	_____	
1. <u>Festuca perennis</u>	<u>90</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Amsinckia menziesii</u>	<u>5</u>	<u>N</u>	<u>NL</u>	
3. <u>Erodium moschatum</u>	<u>3</u>	<u>N</u>	<u>NL</u>	
4. <u>Avena barbata</u>	<u>2</u>	<u>N</u>	<u>NL</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			
Remarks:				

SOIL

Sampling Point: SP-3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 3/2	100					C	heavy clay

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ☒

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

Remarks:

According to the Palmer Drought Severity Index (PDSI), the project site was subject to severe drought conditions at the time of the survey, however antecedent precipitation conditions were considered to normal.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Viracocha BESS Project City/County: Alameda County Sampling Date: 3/18/2025
 Applicant/Owner: Reclaimed Wind, LLC State: CA Sampling Point: SP-4
 Investigator(s): G. Davis, P. Laulikitnont-Lee Section, Township, Range: S 11, T2S, R3E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 0-5
 Subregion (LRR): C Lat: 37.7687393 Long: -121.6170508 Datum: WGS 84
 Soil Map Unit Name: ArD - Altamont clay, 15-30% slopes, MLRA 15 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 ☒ 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 ☐	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: Sampling point is associated with a puddle that is located immediately downslope of a culvert outlet. While hydrophytic vegetation and wetland hydrology is present, this feature lacks hydric soils and was determined to be within uplands.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☒ No ☐
Herb Stratum (Plot size: <u>5 ft x 5 ft</u>)				
1. <u>Festuca perennis</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>90</u> % Cover of Biotic Crust _____				

Remarks:

Most of this sampling area was barren due to heavy cattle traffic.

SOIL

Sampling Point: SP-4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	7.5YR 3/1	100					C	heavy clay
16-	REFUSAL							

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

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

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

Indicators for Problematic Hydric Soils³:

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Gravel/Rock

Depth (inches): 16

Hydric Soil Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☒ No ☐ Depth (inches): 3

Saturation Present? Yes ☒ No ☐ Depth (inches): 0
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Wetland hydrology was met at this sampling location with multiple indicators. Feature is associated with a puddle downslope of a partially plugged culvert outlet. This feature likely fills in response to precipitation events; between 3/13-3/14 the site received 0.92" of rain and the day prior to the survey the site received 0.10" of rain (according to the TRACY PUMPING PLANT, CA WETS station). The feature was not mapped as waters due to lack of OHWM indicators.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Viracocha BESS Project City/County: Alameda County Sampling Date: 3/18/2025
 Applicant/Owner: Reclaimed Wind, LLC State: CA Sampling Point: SP-5
 Investigator(s): G. Davis, P. Laulikitnont-Lee Section, Township, Range: S 11, T2S, R3E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 0-5
 Subregion (LRR): C Lat: 37.7693319 Long: -121.6154388 Datum: WGS 84
 Soil Map Unit Name: ArD - Altamont clay, 15-30% slopes, MLRA 15 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 ☒ 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 ☐	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: Sampling point is associated with a ponded area that is located immediately downslope of a culvert outlet. While hydrophytic vegetation and wetland hydrology is present, this feature lacks hydric soils and was determined to be within uplands. The site is heavily compacted from cattle and is subject to saturation and inundation at the surface, but not in the subsurface.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☒ No ☐
Herb Stratum (Plot size: <u>5 ft x 5 ft</u>)				
1. <u>Festuca perennis</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>95</u> % Cover of Biotic Crust _____				

Remarks:

Most of this sampling area was barren due to heavy cattle traffic.

SOIL

Sampling Point: SP-5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 3/2	100					C	heavy clay
12-18	10YR 3/3	100					SCL	pockets of sand present

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

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

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

Indicators for Problematic Hydric Soils³:

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

Soil is compacted at the surface and pools water, but no hydric soils were detected.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☒ No _____ Depth (inches): 0

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

Saturation Present? Yes ☒ No _____ Depth (inches): 0 - 2
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No _____

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

Remarks:

Wetland hydrology was met at this sampling location with multiple indicators. Water appears to pond here during the wet season but not long enough to develop hydric soils. Saturation was present at the soil surface (0-2") but not saturated below. There was no high water table at this site, however surface water spilled over the edge of the pit and filled the hole while sampling. The soil between 2-18" was moist but not saturated.

*See SP-4 wetland hydrology remarks section for additional information.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Viracocha BESS Project City/County: Alameda County Sampling Date: 3/18/2025
 Applicant/Owner: Reclaimed Wind, LLC State: CA Sampling Point: SP-6a
 Investigator(s): G. Davis, P. Laulikitnont-Lee Section, Township, Range: S 11, T2S, R3E
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): C Lat: 37.7695132 Long: -121.6146723 Datum: WGS 84
 Soil Map Unit Name: ArD - Altamont clay, 15-30% slopes, MLRA 15 NWI classification: PEM1A

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 ☒ 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 ☐	Is the Sampled Area within a Wetland?	Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐		
Wetland Hydrology Present?	Yes ☒ No ☐		
Remarks: Sampling point associated with an emergent wetland located within a broad, low-gradient swale that is subject to heavy cattle traffic due to feed trough placement.			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x 1 = _____
3. _____	_____	_____	_____	FACW species _____	x 2 = _____
4. _____	_____	_____	_____	FAC species _____	x 3 = _____
5. _____	_____	_____	_____	FACU species _____	x 4 = _____
_____ = Total Cover				UPL species _____	x 5 = _____
Herb Stratum (Plot size: <u>5 ft x 5 ft</u>)				Column Totals:	<u>_____</u> (A) <u>_____</u> (B)
1. <u>Festuca perennis</u>	<u>100</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index = B/A = _____	
2. <u>Veronica persica</u>	<u><1</u>	<u>N</u>	<u>NI</u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. _____	_____	_____	_____	☒ Dominance Test is >50%	
2. _____	_____	_____	_____	☐ Prevalence Index is ≤3.0 ¹	
				☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				☐ Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes ☒ No ☐	
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____					

Remarks:

Vegetation throughout the entire feature was relatively uniform but included patches of Mediterranean barley (*Hordeum marinum*) (FAC) and some scattered non-native upland herbs and forbs.

SOIL

Sampling Point: SP-6a

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

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
0-16	10YR 3/2	95	10YR 4/6	5	C	M/PL	heavy clay

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

Saturation Present? Yes ☒ No ☐ Depth (inches): 11
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Wetland hydrology was met at this sampling location with the Saturation (A3) indicator just within 12" of the ground surface. Given that the site was subject to severe drought conditions at the time of the survey, it is likely that site hydrology was less expressive for the 2024-2025 wet season.

According to the Palmer Drought Severity Index (PDSI), the project site was subject to severe drought conditions at the time of the survey, however antecedent precipitation conditions were considered to normal.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Viracocha BESS Project City/County: Alameda County Sampling Date: 3/18/2025
 Applicant/Owner: Reclaimed Wind, LLC State: CA Sampling Point: SP-6b
 Investigator(s): G. Davis, P. Laulikitnont-Lee Section, Township, Range: S 11, T2S, R3E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 10-15
 Subregion (LRR): C Lat: 37.7696616 Long: -121.6147059 Datum: WGS 84
 Soil Map Unit Name: ArD - Altamont clay, 15-30% slopes, MLRA 15 NWI classification: PEM1A

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 ☒ 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 ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Sampling point is located on a hillslope adjacent to a wetland.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☐ No ☒
Herb Stratum (Plot size: <u>5 ft x 5 ft</u>)				
1. <u>Bromus diandrus</u>	<u>40</u>	<u>Y</u>	<u>NL</u>	
2. <u>Hordeum murinum</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Silybum marianum</u>	<u>10</u>	<u>N</u>	<u>NL</u>	
4. <u>Amsinckia menziesii</u>	<u>10</u>	<u>N</u>	<u>NL</u>	
5. <u>Festuca perennis</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: SP-6b

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-19	10YR 3/1	100					C	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ☒

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

Remarks:

According to the Palmer Drought Severity Index (PDSI), the project site was subject to severe drought conditions at the time of the survey, however antecedent precipitation conditions were considered to normal.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Viracocha BESS Project City/County: Alameda County Sampling Date: 3/18/2025
 Applicant/Owner: Reclaimed Wind, LLC State: CA Sampling Point: SP-7a
 Investigator(s): G. Davis, P. Laulikitnont-Lee Section, Township, Range: S 11, T2S, R3E
 Landform (hillslope, terrace, etc.): Toe of slope Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): C Lat: 37.7695132 Long: -121.6146723 Datum: WGS 84
 Soil Map Unit Name: ArD - Altamont clay, 15-30% slopes, MLRA 15 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 ☒ 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 ☐	Is the Sampled Area within a Wetland?	Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐		
Wetland Hydrology Present?	Yes ☒ No ☐		
Remarks: Sampling point associated with with a depressional area adjacent to a road junction.			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____	
2. _____	_____	_____	_____	OBL species _____ x 1 = _____	
3. _____	_____	_____	_____	FACW species _____ x 2 = _____	
4. _____	_____	_____	_____	FAC species _____ x 3 = _____	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
_____ = Total Cover				UPL species _____ x 5 = _____	
Herb Stratum (Plot size: <u>5 ft x 5 ft</u>)				Column Totals: _____ (A) _____ (B)	
1. <u>Festuca perennis</u>	<u>70</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index = B/A = _____	
2. <u>Cryptantha sp.</u>	<u>15</u>	<u>N</u>	<u>NL</u>		
3. <u>Rumex crispus</u>	<u>5</u>	<u>N</u>	<u>FAC</u>		
4. <u>Hirschfeldia incana</u>	<u>5</u>	<u>N</u>	<u>NL</u>		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. _____	_____	_____	_____	☒ Dominance Test is >50%	
2. _____	_____	_____	_____	☐ Prevalence Index is ≤3.0 ¹	
				☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				☐ Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes ☒ No ☐	
Remarks:					

SOIL

Sampling Point: SP-7a

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	95	10YR 4/4	5	C	M/PL	C	ox. rhizo. along living roots obs.
6-14	10YR 4/2	100	-	-	-	-	CL	gravelly clay loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☒ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Gravel
Depth (inches): 14

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):
Water Table Present? Yes ☐ No ☒ Depth (inches):
Saturation Present? Yes ☐ No ☒ Depth (inches):
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Some cracks were observed in bare soil portions of this feature, however it was mostly vegetated.

According to the Palmer Drought Severity Index (PDSI), the project site was subject to severe drought conditions at the time of the survey, however antecedent precipitation conditions were considered to normal.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Viracocha BESS Project City/County: Alameda County Sampling Date: 3/18/2025
 Applicant/Owner: Reclaimed Wind, LLC State: CA Sampling Point: SP-7b
 Investigator(s): G. Davis, P. Laulikitnont-Lee Section, Township, Range: S 11, T2S, R3E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-5
 Subregion (LRR): C Lat: 37.7688329 Long: -121.6144651 Datum: WGS 84
 Soil Map Unit Name: ArD - Altamont clay, 15-30% slopes, MLRA 15 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 ☒ 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 ☐	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Sampling point is located on a slope adjacent to a wetland.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☒ No ☐
Herb Stratum (Plot size: <u>5 ft x 5 ft</u>)				
1. <u>Festuca perennis</u>	<u>90</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Amsinckia menziesii</u>	<u>5</u>	<u>N</u>	<u>NL</u>	
3. <u>Lupinus microcarpus</u>	<u>5</u>	<u>N</u>	<u>NL</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			
Remarks:				

SOIL

Sampling Point: SP-7b

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/3	100					C	
8-16	10YR 4/2	100					CL	gravelly clay loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rock
Depth (inches): 16

Hydric Soil Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

According to the Palmer Drought Severity Index (PDSI), the project site was subject to severe drought conditions at the time of the survey, however antecedent precipitation conditions were considered to normal.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Viracocha BESS Project City/County: Alameda County Sampling Date: 3/18/2025
 Applicant/Owner: Reclaimed Wind, LLC State: CA Sampling Point: SP-8a
 Investigator(s): G. Davis, P. Laulikitnont-Lee Section, Township, Range: S 11, T2S, R3E
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): C Lat: 37.7676408 Long: -121.6138492 Datum: WGS 84
 Soil Map Unit Name: ArD - Altamont clay, 15-30% slopes, MLRA 15 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 ☒ 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 ☐	Is the Sampled Area within a Wetland?	Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐		
Wetland Hydrology Present?	Yes ☒ No ☐		
Remarks: Sampling point associated with with a broad wetland swale.			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	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)
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft x 5 ft</u>)				
1. <u>Distichlis spicata</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Hordeum marinum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3. <u>Festuca perennis</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No ☐
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: SP-8a

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/1	98	7.5YR 4/4	2	C	M	C	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Soil is heavily compacted at the surface due to cattle traffic.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ☒ No ☐ Depth (inches): 3

Saturation Present? Yes ☒ No ☐ Depth (inches): 0-2
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

According to the Palmer Drought Severity Index (PDSI), the project site was subject to severe drought conditions at the time of the survey, however antecedent precipitation conditions were considered to normal.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Viracocha BESS Project City/County: Alameda County Sampling Date: 3/18/2025
 Applicant/Owner: Reclaimed Wind, LLC State: CA Sampling Point: SP-8b
 Investigator(s): G. Davis, P. Laulikitnont-Lee Section, Township, Range: S 11, T2S, R3E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 10-15
 Subregion (LRR): C Lat: 37.7677633 Long: -121.6139614 Datum: WGS 84
 Soil Map Unit Name: ArD - Altamont clay, 15-30% slopes, MLRA 15 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 ☒ 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 ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Sampling point is located on a slope adjacent to a wetland.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>70</u> x 4 = <u>280</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>100</u> (A) <u>380</u> (B) Prevalence Index = B/A = <u>3.8</u>
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft x 5 ft</u>) 1. <u>Bromus hordeaceus</u> <u>70</u> <u>Y</u> <u>FACU</u> 2. <u>Festuca perennis</u> <u>20</u> <u>Y</u> <u>FAC</u> 3. <u>Distichlis spicata</u> <u>5</u> <u>N</u> <u>FAC</u> 4. <u>Amsinckia menziesii</u> <u>5</u> <u>N</u> <u>NL</u> 5. _____ 6. _____ 7. _____ 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes ☐ No ☒

SOIL

Sampling Point: SP-8b

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 3/3	100					C	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ☒

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

Remarks:

According to the Palmer Drought Severity Index (PDSI), the project site was subject to severe drought conditions at the time of the survey, however antecedent precipitation conditions were considered to normal.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Viracocha BESS Project City/County: Alameda County Sampling Date: 3/18/2025
 Applicant/Owner: Reclaimed Wind, LLC State: CA Sampling Point: SP-9a
 Investigator(s): G. Davis, P. Laulikitnont-Lee Section, Township, Range: S 11, T2S, R3E
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): C Lat: 37.7661147 Long: -121.6147497 Datum: WGS 84
 Soil Map Unit Name: ArD - Altamont clay, 15-30% slopes, MLRA 15 NWI classification: PEM1A

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 ☒ 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 ☐	Is the Sampled Area within a Wetland?	Yes ☒	No ☐
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			
Remarks: Sampling point associated with with a wetland swale.					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
4. _____	_____	_____	_____		
				= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)					
1. _____	_____	_____	_____	Prevalence Index worksheet:	
2. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____	
3. _____	_____	_____	_____	OBL species _____ x 1 = _____	
4. _____	_____	_____	_____	FACW species _____ x 2 = _____	
5. _____	_____	_____	_____	FAC species _____ x 3 = _____	
				FACU species _____ x 4 = _____	
				UPL species _____ x 5 = _____	
				Column Totals: _____ (A) _____ (B)	
				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: <u>5 ft x 5 ft</u>)					
1. <u>Festuca perennis</u>	<u>75</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators:	
2. <u>Distichlis spicata</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	☒ Dominance Test is >50%	
3. <u>Erodium moschatum</u>	<u>5</u>	<u>N</u>	<u>NL</u>	☐ Prevalence Index is ≤3.0 ¹	
4. _____	_____	_____	_____	☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5. _____	_____	_____	_____	☐ Problematic Hydrophytic Vegetation ¹ (Explain)	
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
				1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes ☒ No ☐	
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
				= Total Cover	
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____					
Remarks:					

SOIL

Sampling Point: SP-9a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 3/1	95	7.5YR 4/4	5	C	M	C	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
☐ Histosol (A1)				☐ Sandy Redox (S5)		☐ 1 cm Muck (A9) (LRR C)		
☐ Histic Epipedon (A2)				☐ Stripped Matrix (S6)		☐ 2 cm Muck (A10) (LRR B)		
☐ Black Histic (A3)				☐ Loamy Mucky Mineral (F1)		☐ Reduced Vertic (F18)		
☐ Hydrogen Sulfide (A4)				☐ Loamy Gleyed Matrix (F2)		☐ Red Parent Material (TF2)		
☐ Stratified Layers (A5) (LRR C)				☐ Depleted Matrix (F3)		☐ Other (Explain in Remarks)		
☐ 1 cm Muck (A9) (LRR D)				☒ Redox Dark Surface (F6)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
☐ Depleted Below Dark Surface (A11)				☐ Depleted Dark Surface (F7)				
☐ Thick Dark Surface (A12)				☐ Redox Depressions (F8)				
☐ Sandy Mucky Mineral (S1)				☐ Vernal Pools (F9)				
☐ Sandy Gleyed Matrix (S4)								
Restrictive Layer (if present):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes ☒ No ☐		
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☒ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Wetland hydrology was met at this sampling location with the Surface Cracks indicator (B6). Cracks were present sporadically throughout this feature where unvegetated. A low point upslope of this sampling point had racked vegetation and sediment marks at the base of a barbed wire fence. According to the Palmer Drought Severity Index (PDSI), the project site was subject to severe drought conditions at the time of the survey, however antecedent precipitation conditions were considered to normal.		

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Viracocha BESS Project City/County: Alameda County Sampling Date: 3/18/2025
 Applicant/Owner: Reclaimed Wind, LLC State: CA Sampling Point: SP-9b
 Investigator(s): G. Davis, P. Laulikitnont-Lee Section, Township, Range: S 11, T2S, R3E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5-10
 Subregion (LRR): C Lat: 37.7661094 Long: -121.614682 Datum: WGS 84
 Soil Map Unit Name: ArD - Altamont clay, 15-30% slopes, MLRA 15 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 ☒ 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 ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Sampling point is located on a slope adjacent to a wetland.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>100</u> (A) <u>370</u> (B) Prevalence Index = B/A = <u>3.7</u>
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft x 5 ft</u>) 1. <u>Bromus hordeaceus</u> <u>50</u> <u>Y</u> <u>FACU</u> 2. <u>Festuca perennis</u> <u>40</u> <u>Y</u> <u>FAC</u> 3. <u>Hirschfeldia incana</u> <u>5</u> <u>N</u> <u>NL</u> 4. <u>Amsinckia menziesii</u> <u>5</u> <u>N</u> <u>NL</u> 5. _____ 6. _____ 7. _____ 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft x 30 ft</u>) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes ☐ No ☒

SOIL

Sampling Point: SP-9b

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		
According to the Palmer Drought Severity Index (PDSI), the project site was subject to severe drought conditions at the time of the survey, however antecedent precipitation conditions were considered to normal.		

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Viracocha BESS Project City/County: Alameda County Sampling Date: 3/18/2025
 Applicant/Owner: Reclaimed Wind, LLC State: CA Sampling Point: SP-10a
 Investigator(s): G. Davis, P. Laulikitnont-Lee Section, Township, Range: S 11, T2S, R3E
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): C Lat: 37.768333 Long: -121.613266 Datum: WGS 84
 Soil Map Unit Name: ArD - Altamont clay, 15-30% slopes, MLRA 15 NWI classification: R4SBC

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 ☒ 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 _____	Is the Sampled Area within a Wetland?	Yes ☒	No _____
Hydric Soil Present?	Yes ☒	No _____			
Wetland Hydrology Present?	Yes ☒	No _____			
Remarks: Sampling point associated with with a broad wetland swale.					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____	
2. _____	_____	_____	_____	OBL species _____ x 1 = _____	
3. _____	_____	_____	_____	FACW species _____ x 2 = _____	
4. _____	_____	_____	_____	FAC species _____ x 3 = _____	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
_____ = Total Cover				UPL species _____ x 5 = _____	
Herb Stratum (Plot size: <u>5 ft x 5 ft</u>)				Column Totals: _____ (A) _____ (B)	
1. <u>Festuca perennis</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index = B/A = _____	
2. <u>Distichlis spicata</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. _____	_____	_____	_____	☒ Dominance Test is >50%	
2. _____	_____	_____	_____	☐ Prevalence Index is ≤3.0 ¹	
				☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				☐ Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes ☒ No _____	
Remarks:					

SOIL

Sampling Point: SP-10a

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☒ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		
According to the Palmer Drought Severity Index (PDSI), the project site was subject to severe drought conditions at the time of the survey, however antecedent precipitation conditions were considered to normal.		

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Viracocha BESS Project City/County: Alameda County Sampling Date: 3/18/2025
 Applicant/Owner: Reclaimed Wind, LLC State: CA Sampling Point: SP-10b
 Investigator(s): G. Davis, P. Laulikitnont-Lee Section, Township, Range: S 11, T2S, R3E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5-10
 Subregion (LRR): C Lat: 37.768314 Long: -121.61224 Datum: WGS 84
 Soil Map Unit Name: ArD - Altamont clay, 15-30% slopes, MLRA 15 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 ☒ 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 ☐	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Sampling point is located on a slope adjacent to a wetland.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft x 5 ft</u>)				Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Festuca myorur</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Festuca perennis</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Distichilis spicata</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft x 30 ft</u>)				Hydrophytic Vegetation Present? Yes ☒ No ☐
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: SP-10b

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/3	100					C	
8-17	10YR 3/4	100					C	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ☒

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

Remarks:

According to the Palmer Drought Severity Index (PDSI), the project site was subject to severe drought conditions at the time of the survey, however antecedent precipitation conditions were considered to normal.

Appendix F

Representative Photographs





Photo 1: Photo capturing area where the NHD mapped a flowline in the northwestern portion of the BSA. No OHWM indicators or wetland indicators observed. Photo taken on March 18, 2025, facing west.



Photo 2: Sample Point 1 (SP-1) was established in the topographic low point of a vegetated swale where saturation was potentially visible on aerial imagery. No indicators of wetland hydrology or hydric soils observed. Photo taken on March 18, 2025, facing south.



Photo 3: Overview of a vegetated swale at SP-2 where an NHD flowline was mapped. No OHWM indicators or wetland indicators observed. Photo taken on March 18, 2025, facing west.



Photo 4: Culvert inlet along the south side of the existing access road. No aquatic resources were delineated in this area. Photo taken on March 18, 2025, facing east.



Photo 5: A vegetated swale at culvert outlet at SP-3. No OHWM indicators or wetland indicators observed. Photo taken on March 18, 20205; facing north.



Photo 6: A small depression formed at culvert outlet at SP-.4; facing south. No hydric soils or OHWM indicators observed. Photo taken on March 18, 2025.



Photo 7: A vegetated swale at culvert outlet. No OHWM indicators or wetland indicators observed. Photo taken on March 18, 2025, facing southwest.



Photo 8: Photo taken at a mapped NHD flowline at the access road. No OHWM indicators observed. Photo taken on March 18, 2025, facing west.



Photo 9: Pooling water observed in a depression at SP-5 but the area lacked hydric soils indicator. Pooling water assumed to be caused by recent rain events and there was no defined OHWM. Photo taken on March 18, 2025, facing east.



Photo 10: Photo taken in the central portion of WET-1 at SP-6a; facing northeast. Photo taken on March 18, 2025.



Photo 11: Photo taken at the delineated boundary of WET-1 at SP-6b where vegetation composition changes and no hydric soils were observed. The dashed yellow line shows WET-01 in the background. Photo taken on March 18, 2025.



Photo 12: Photo in an area the NHD mapped a flowline adjacent to WET-1. No OHWM indicators or wetland indicators observed. Photo taken on March 18, 2025, facing southwest.



Photo 13: No aquatic resources observed at culvert outlet; facing south. Photo taken on March 18, 2025.



Photo 14: Overview of WET-2 at SP-7a. Photo taken on March 18, 2025, facing northeast.



Photo 15: View of WET-3 at SP-8a. Photo taken on March 18, 2025, facing north.



Photo 16: Photo taken at the delineated boundary of WET-3. The wetland is confined by the hillslope. Photo taken on March 18, 2025, facing south.

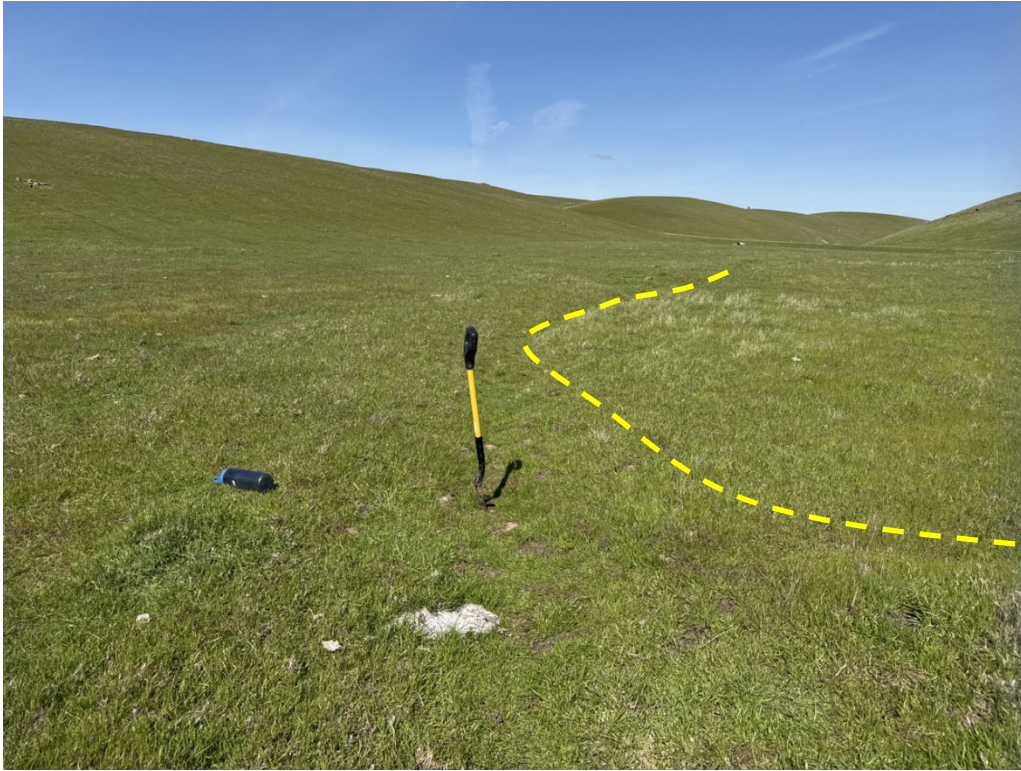


Photo 17: View from the southernmost portion of WET-4 at SP-9a. Photo taken on March 18, 2025, facing north.



Photo 18: View of feature PND-1. Photo taken on March 18, 2025, facing northeast.



Photo 19: View of WET-4 facing northeast towards PND-1. Photo taken on March 18, 2025.



Photo 20: View of the delineated boundary of WET-4. WET-4 is visible on the left side of the photo confined by the hillslope on the right. Photo taken on March 18, 2025, facing southwest.