

Biological Report

for

Cold Canyon Landfill: Proposed Expansion

APNs 044-261-047, -048, and -011

2268 Carpenter Canyon Road

San Luis Obispo County

California



Prepared for

Cold Canyon Landfill

Corral de Piedra Land Company, Inc.

2268 Carpenter Canyon Road

San Luis Obispo, CA 93401

by

ALTHOUSE AND MEADE, INC.

BIOLOGICAL AND ENVIRONMENTAL SERVICES

1875 Wellsona Road

Paso Robles, CA 93446

(805) 467-1041

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Synopsis

- This biological report provides information regarding botanical and zoological resources on an approximately 88-acre property (APNs 044-261-047, -048, and -011) owned by Cold Canyon Landfill, located on Highway 227 in San Luis Obispo County, California.
- The proposed project is expansion of the existing landfill and appurtenant features. The proposed expansion and support facilities together would occupy approximately 66 acres of the site. The remaining approximately 22 acres of existing habitat on the property would be preserved and enhanced.
- Biological surveys of the property were conducted in May through August 2006 and February 2007. The following habitat types are present on the property: agrestal, grazed annual grassland, ruderal, coast live oak woodland, anthropogenic, and wetlands, other waters, and riparian.
- Seasonal wetlands occur in and along a stream channel, in shallow swales, and along the lower hillsides within the study area. A wetland delineation was performed to identify the extent of wetlands that may be impacted by the proposed landfill expansion. A U.S. Army Corps representative visited the site in April 2007 and verbally verified the delineation.
- A spring floristic survey of the property identified 147 species of plants. Ten rare plants and nine special animals have the potential to occur on the property. One rare plant, Obispo Indian paintbrush (*Castilleja densiflora* ssp. *obispoensis*, CNPS list 1B.2), was documented in the survey area. Peregrine falcon and loggerhead shrike were observed on the property during our surveys. Loggerhead shrike could nest on the property. Peregrine falcon hunts on site but does not nest on the property.
- Coast live oak trees occur on the property. Of 85 oak trees inventoried, up to 43 trees may be removed and up to 7 additional trees may be impacted.
- Mitigation measures are recommended that will reduce project impacts to birds, wetlands, ephemeral streams, oak trees, one rare plant, and potential special status animals to a less than significant level.

1.0 Introduction

This document presents results of biological investigations conducted on an approximately 88-acre property consisting of three contiguous parcels (APNs 044-261-047, -048, and -011). Habitats consist of agrestal habitat, grazed annual grassland, ephemeral stream, willow riparian, state and federal wetland, and patches of oak woodland. The property, owned by Cold Canyon Landfill, is located on Carpenter Canyon Road (Highway 227) near Patchett Road in San Luis Obispo County, California. Results are reported for floristic and wildlife surveys of the property, a habitat inventory, tree inventory, and database and literature searches of special status species reports within five miles of the property. This report provides agencies and decision makers with information regarding biological resources and assesses potential impacts from a proposed landfill expansion project. Natural communities on the site are identified, rare and special status species that may be affected by the proposed development are discussed, and lists of plant and animal species that were found or are expected on the property are provided. An evaluation of the effect of the proposed project on biological resources is included, recommendations for additional surveys or studies are given, and general mitigation measures for special status species are provided.

1.1 Project Location and Description

The subject property is approximately 88 acres, consisting of a 75.52-acre parcel (APN 044-261-047), a 12.48 acre parcel (APN 044-261-048), and a 0.27 acre parcel (APN 044-261-011) located adjacent to the active Cold Canyon Landfill in San Luis Obispo County, California (Appendix B, Figure 1). The study area is situated along Carpenter Canyon Road (Highway 227), south of the City of San Luis Obispo in the Arroyo Grande NE United States Geological Survey (USGS) 7.5 minute quadrangle (Appendix B, Figure 2). Approximate coordinates for the center of the property are N35° 11' 1" / W120° 35' 28". Elevation varies from approximately 194 to 326 feet above sea level. The property is currently accessed from the existing Cold Canyon Landfill via a paved road. An existing recycling sort facility and greenwaste composting center are located within the study area.

The proposed project is expansion of an existing landfill and support operations to provide uninterrupted waste disposal and diversion services for southern San Luis Obispo County. Landfill entrance, scales, and public materials drop-off stations would be relocated to allow development of the expansion area. A new paved entrance road would be constructed approximately 2800 feet south of the existing entrance.

The landfill would be expanded to extend capacity by approximately 12.9 million cubic yards. The landfill expansion would be a series of composite-lined modules, consistent with the existing facility. In addition, an existing two-acre resource recovery park, where public drop-off bins are located, would be moved adjacent to the proposed new entrance, and expanded. The existing materials recovery facility, where common recyclables such as plastics, cardboard, and paper are processed, would remain in its current location. The existing structure would be expanded to accommodate additional equipment and improve reclamation of recyclable materials. Management practices used on the existing landfill, including nuisance control, landfill gas reclamation, and monitoring of surface water,

storm water, leachate, groundwater, and landfill gas, would continue on the expansion site.

The subject site is approximately 88 acres in size. Of this area, approximately 23 acres of the subject site are presently used for landfill support activities, including the materials recovery facility, employee parking, greenwaste and wood stockpile/sort area, and composting operations. Approximately 43 acres of land not currently used for landfill support operations would be converted to landfill and support operations by the proposed project. The remaining approximately 22 acres, which includes an ephemeral stream, willow riparian, and mixed woodland, would be retained as open space.

1.2 Responsible Parties

TABLE 1. RESPONSIBLE PARTIES. Contact information for the applicant, lead agency, biological consultant, and site manager are provided.

Applicant/Owner Cold Canyon Landfill Corral de Piedra Land Co. 2268 Carpenter Canyon Road San Luis Obispo, CA 93401 805-549-8363 Contact: Rick King	Lead Agency County of San Luis Obispo Department of Planning & Building Attn: Environmental Division County Government Center San Luis Obispo, CA 93408 805-781-5452 Contact: John McKenzie
Biological Consultant Althouse and Meade, Inc. 1875 Wellsona Road Paso Robles, CA 93446 805-467-1041 Contact: LynneDee Althouse	Engineer Shaw Environmental, Inc. 2360 Bering Drive San Jose, CA 95131 408-382-5820 Contact: Richard Haughey

2.0 Methods

The property was surveyed for biological resources on May 15 and 16, June 2, 13, and 26, July 7 and 31, and August 9, 2006, and February 19, 2007 (Table 2). Field work was conducted by biologists Jason Dart, Meg Perry, LynneDee Althouse, and Daniel Meade between 8:00 a.m. and 11:00 p.m. The site was surveyed on foot and photographed. Surveys were conducted throughout the property area to compile species lists and search for rare plants and special animals. Habitat types in the subject area were inspected, described, and mapped. All plant and animal species observed on the site were identified and recorded. Wildlife observations, including animal presence, nests, tracks, and signs, were documented. Birds were identified by sight (using 10 power binoculars) and vocalizations. Plants were identified through field observations and laboratory analysis of collected material. Some specimens collected during our site visits will be deposited in the Robert F. Hoover Herbarium, California Polytechnic State University.

TABLE 2. BIOLOGICAL SURVEYS. Survey dates, times, weather observations, and biologist.

Survey Date	Start Time Stop Time	Temp.	Wind	Weather Observations	Biologist
5/15/2006	3 pm to 4 pm	75 °F	5-10 mph	Sunny and warm with few high clouds	M. Perry L. Althouse
5/16/2006	3 pm to 5 pm	80 °F	0-5mph	Sunny and warm, clear	M. Perry J. Dart
6/2/2006	2 pm to 4 pm	80 °F	0-5 mph	Sunny and calm	M. Perry J. Dart
6/13/2006	8 am to 10:30 am	70 °F	5-10 mph	Breezy, sunny with few clouds	M. Perry
6/26/2006	8 am to 9:30 am	60 °F	0-5 mph	Overcast but clearing	M. Perry
7/7/2006	3:30 pm to 5 pm	75 °F	0-5 mph	Sunny and calm.	M. Perry L. Althouse
7/31/2006	11 am to 3:30 pm	80 °F	5-10 mph	Sunny and clear, breezy	M. Perry
8/9/2006	8 am to 11:30 am	80 °F	0-5 mph	Sunny and warm	J. Dart
2/19/2007	3:30 pm to 5:30 pm	60 °F	0-5 mph	Cool and overcast	D. Meade M. Perry

We conducted a search of the California Natural Diversity Database (CNDDDB April 28, 2007 data) and the California Native Plant Society (CNPS) On-line Inventory of Rare and Endangered Plants of California for special status species that could occur within five miles of the project site. The search area included the Arroyo Grande NE, Lopez Mountain, Pismo Beach, and San Luis Obispo quadrangles (7.5 minute USGS).

Additional special status species research consisted of reviewing previous biological reports for the area and searching on-line museum and herbarium specimen records for locality data within San Luis Obispo County. We reviewed online databases of specimen records maintained by the Museum of Vertebrate Zoology (MVZ), the University Herbarium, and the Jepson Herbaria (all at the University of California, Berkeley).

Special status species lists produced by database and literature searches were cross-referenced with the known habitat types on the property to identify all potential special status species that could occur on or near the project site. Each special status species with a potential for occurrence on or near the project site is individually discussed. A report was made to the CNDDDB when our field surveys found special status species on the property.

3.0 Results

3.1 Existing Conditions

The subject property is situated on the east side of Carpenter Canyon Road, adjacent to Patchett Road, south of the community of Edna, in San Luis Obispo County. The property occupies approximately 88 acres on moderate slopes with a southwestern aspect, above Carpenter Canyon Road (see aerial photograph in Appendix B, Figure 5). Site topography varies from a gently sloped floodplain to moderately sloped, uneven foothills marked with shallow depressions and small swales.

The subject property is a portion of an old ranch. An abandoned greenhouse, building pad, shed, chicken coop, and several species of cultivated trees, shrubs, and vines remain from the previous land use. An existing Cold Canyon recycling sort facility and greenwaste composting operation are also located on the subject property. The property encompasses an abandoned vineyard, grazed annual grassland, a small reservoir in an existing drainage, retention basins, wetland, and patches of oak woodland (see Appendix C for photographs). Fencing on the property consists of barbed wire and sections of chain link.

In 2006, mature grape vines persisted without maintenance or irrigation in the abandoned vineyard; weedy non-native species dominated areas between the vines. In the winter of 2007, grape vines were removed.

Grazed annual grassland occupies gentle to moderate slopes adjacent to the seasonal stream. Small patches of native perennial bunchgrasses occur within grasslands on site. Pasture on the subject property is still grazed periodically. One rare plant subspecies, Obispo Indian paintbrush, occurs in patches along the perimeter of the vineyard and in grazed grassland (Biological Resources Map, Appendix A).

Eighty-five mature live oaks in moderate to good condition are present on the property. Most of these oaks are grouped together in a small remnant of closed canopy oak woodland; in other locations, individual oaks are surrounded by grassland vegetation.

Wetlands occur on the subject property; a wetland delineation was prepared to show location and extent of potential jurisdictional federal and state wetlands (Althouse and Meade, Inc., 2007). Wetland habitat on the property includes small patches of isolated seasonal slope wetlands that occur along the lower hillslopes where saturated return flow meets shallow bedrock and seeps out. These wetland patches do not appear to hold surface water. Wetlands also occur intermittently within the ephemeral stream and associated swales. Several small pools in the stream bottom were persistent into June 2006; one small pool still held water in August. In April 2007, there was no standing

water in the drainage. The ephemeral stream is a tributary to Canada Verde Creek (the east fork of Pismo Creek), which ultimately joins the main stem of Pismo Creek northwest of the subject site. Mature arroyo willow are scattered along banks in the stream channel, and form a closed canopy near Highway 227 where the channel opens into a gently sloping flood plain. Several species of birds were observed nesting in the willow canopy.

Many species of common wildlife, including western fence lizards, chorus frogs, pocket gophers, ground squirrels, and mule deer were observed on the property. Several birds were observed nesting on the subject site, including lark sparrows, great horned owls, robins, and towhees. Deer ticks were abundant.

3.2 Soils

The soils map in the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soil Survey of San Luis Obispo County, California, Coastal Part (1984) delineates three soil map units on the property (Appendix B, Figure 3): Arnold loamy sand 5 to 15 percent slopes (#102), Lodo clay loam, 30 to 50 percent slopes (#149), and Pismo loamy sand, 9 to 30 percent slopes (map unit 189). Map units typically encompass one or two dominant soils, which cover more than 50 percent of the mapped area, and one to several included soils, which occur in small patches that are not differentiated in mapping. The proportion of each soil map unit delineated on site by the NRCS soil survey is summarized in the following table.

TABLE 3. SOIL MAP UNITS ONSITE. NRCS soil survey data for the Cold Canyon Landfill Expansion Site.

Soil Map Unit	Delineation on site (acre)	Percent of total delineated onsite
Arnold loamy sand, 5 to 15 percent slopes (#102)	41	47
Lodo clay loam, 30 to 50 percent slopes (#149)	9	10
Pismo loamy sand, 9 to 30 percent slopes (#189)	38	43
Totals	88	100

The NRCS soil survey maps for San Luis County were originally produced at a 1 to 24,000 scale; one mile on the ground is approximately equivalent to 2.64 inches on each map sheet. With the advent of GIS programs that have near-infinite zoom capabilities, this county soil survey information is occasionally interpreted as being more detailed than it truly is. NRCS soil maps identify the dominant soil map units most likely to be at a given location, thus providing useful information for identifying likely locations for agricultural uses, potential rare plant habitats, and other general planning purposes. However, the intricate geology and soils of California together with the coarse scale of the NRCS maps for San Luis Obispo County limit the accuracy of these surveys with regard to soil conditions on a specific site. Complete, accurate description of soil types

and capabilities for specific uses on a specific site generally requires additional soil investigations by a qualified professional soil scientist. Therefore, NRCS soil survey descriptions and map unit delineations are provided here with the caution that this information be interpreted appropriately within the bounds of NRCS survey work, and additional on-site survey work be performed as necessary. NRCS GIS data for the site are presented in Figure 3 (Appendix B).

Arnold loamy sand, 5 to 15 percent slopes (#102) formed in residual material weathered from soft sandstone, on moderately to strongly sloping foothills. Arnold loamy sand is a deep, somewhat excessively drained soil, consisting of a loamy sand surface layer approximately 33 inches thick. The subsoil is typically lighter-colored loamy sand to a depth of up to 59 inches, below which is soft, light gray sandstone. Arnold loamy sand is rapidly permeable, and available water capacity is moderate to low. Surface runoff is medium, and hazard of wind and water erosion is high. The soil surface should be protected with adequate vegetative cover to reduce risk of erosion. Arnold soils often support oak woodland and oak savanna with annual grassland and patches of needlegrass. Arnold loamy sand, 5 to 15 percent slopes, is in land capability class IVe, irrigated and non irrigated. The California Department of Conservation includes this soil map unit on its *Farmland of Statewide Importance Soils* list for San Luis Obispo County.

Lodo clay loam, 30 to 50 percent slopes, is a shallow, somewhat excessively drained soil on steep slopes of foothills and mountains. Lodo soils formed in residual material weathered from red rock, shale, or sandstone. The surface layer is typically dark brown clay loam about 12 inches thick, underlain by hard, fractured sandstone. Lodo clay loam is moderately permeable, and available water capacity is low to very low. Surface runoff tends to be rapid, and hazard of water erosion is high. When disturbed, this soil tends to support weedy vegetation. Lodo soils are susceptible to sheet and gully erosion and to compaction. This Lodo soil is in land capability class VIe, non-irrigated. Other soils included in the Lodo clay loam map unit are small areas of Cibo clay, Diablo clay, Gazos clay loam, and Los Osos loam.

Pismo loamy sand formed from residual material weathered from sandstone, on moderately to strongly sloping foothills and mountains. Pismo loamy sand is a shallow, somewhat excessively drained soil, consisting of a loamy sand surface layer approximately 19 inches thick over soft fractured sandstone bedrock. This soil is rapidly permeable, and its available water capacity is typically low. Surface runoff is generally medium to rapid due to the slopes on which the soil generally occurs. Pismo loamy sand is susceptible to wind and water erosion, and gully formation is not uncommon during wet years in poorly vegetated areas. Pismo loamy sand, 9 to 30 percent slopes, is in land capability class VIIe, non-irrigated. Other soils included in the Pismo loamy sand map unit are small areas of Arnold loamy sand, Briones loamy sand, and Tierra sandy loam.

Soil conditions observed onsite are generally consistent with mapped soils, except where disturbed by recent human activities, including grading for composting operations and construction of recycling sort facilities. Also, the range of slope gradients observed is broader than slopes described by the mapped units.

Soils observed in grassland, agrestal habitat, wetland, and oak woodland on the subject site had surface layers varying from fine sand to sandy loam. The disturbed northeastern

hills consisted primarily of clay loams. Evidence of rill and gully erosion was prominent on these slopes. Soft sandstone is visible at the surface in a few locations on the property, which is consistent with the shallow nature of the Pismo soil series. Areas of potential wetland on the lower slopes may be the result of saturated return flow from thin, rapidly draining soils over shallow bedrock uphill. Other locations onsite have deeper soils, and bedrock was not reached in exploratory pits dug during routine wetland delineation.

The California Department of Conservation has generated a list of soil map units in which typical characteristics of the dominant soil series meet criteria for farmland of statewide importance. These lists are intended to aide in identification of sites with potentially valuable agricultural resources. Arnold loamy sand, 5 to 15 percent slopes is included on this list. However, approximately one third of the Arnold loamy sand, 5 to 15 percent slopes, delineations on site have been converted to non-agricultural uses by previous, permitted projects. A jurisdictional drainage occupies a portion of the remaining area.

3.3 Habitat Types

Six habitat types occur on the property: agrestal (abandoned vineyard), grazed annual grassland, ruderal, anthropogenic, coast live oak woodland, and wetland and waters with willow riparian habitat. Biological resources, including habitats, rare plants, and wetlands, are mapped over site topography in Appendix A. A map of predicted impacts to biological resources is also provided in Appendix A. Photographs are provided in Appendix C.

3.3.1 Agrestal (Abandoned Vineyard)

Approximately 13 acres of the property consisted of abandoned grapevines and weedy annual and biennial vegetation. Vines were removed in early 2007.

Annual grassland weeds dominate areas between vine rows. Dominant grasses include non-native annual grass species: soft chess brome (*Bromus hordeaceus*), wild oats (*Avena fatua*, *A. barbata*), foxtail barley (*Hordeum murinum*), and rat-tail fescue (*Vulpia myuros*). Mustards (*Brassica nigra* and *Hirschfeldia incana*), sour dock (*Rumex acetosella*) and rose clover (*Trifolium hirtum*) are also present. Most agrestal habitat on the property supports tall, dense, weedy vegetation unsuited to supporting rare native species known from grasslands in the vicinity.

The perimeter of the vineyard contains one rare plants, Obispo Indian paintbrush (*Castilleja densiflora* ssp. *obispoensis*). Obispo Indian paintbrush was observed among shorter grasses and annual herbs at the margins of the vineyard in 2006 and 2007 (Photos 2 and 3). This special status plant is also present in annual grassland.

3.3.2 Ruderal habitat

Approximately 21 acres of open hillsides north of existing composting and sort facilities are dominated by non-native herbaceous weeds. The area has not been grazed for at least two years. These hills support two isolated, mature coast live oaks with annual grasses, milk thistle, and Italian thistle in the understory. Surrounding hillsides are choked with dense herbaceous weeds, including black mustard (*Brassica nigra*), ripgut brome

(*Bromus diandrus*), Italian thistle (*Carduus pycnocephalus*), perennial mustard (*Hirschfeldia incana*), prickly lettuce (*Lactuca serriola*), bristly ox-tongue (*Picris echioides*), wild radish (*Raphanus sativus*), and milk thistle (*Silybum marianum*). Past and ongoing disturbances, including an abandoned unpaved road, stockpiling of raw greenwaste, and compost operations have probably contributed to conditions favoring a ruderal community at this location.

3.3.3 *Grazed annual grassland*

Annual grassland occupies approximately 23 acres of gentle to moderate slopes adjacent to the ephemeral stream. Most annual grassland on the subject property is grazed periodically. Small patches of a native perennial bunchgrasses, nodding needlegrass (*Nassella cernua*), occur within grasslands on site. However, the dominant species within grassland habitat on the property are non-native annual grasses, such as wild oat (*Avena fatua*), little quaking grass (*Briza maxima*, *B. minor*), soft chess brome (*Bromus hordeaceus*), foxtail barley (*Hordeum murinum*), and Italian rye (*Lolium multiflorum*). Warm-season herbaceous annuals, including western ragweed (*Ambrosia psilostachya*) and dove weed (*Eremocarpus setigerus*), are also common.

Native annual wildflowers and bulbs scattered within annual grassland habitat include common brodiaea (*Brodiaea terrestris* ssp. *terrestris*), California poppy (*Eschscholzia californica*), suncups (*Camissonia contorta*), and miniature lupine (*Lupinus bicolor*). One rare annual wildflower, Obispo Indian paintbrush, occurs in patches along the perimeter of the vineyard and in grazed grassland. Obispo Indian paintbrush appears to be most successful in locations on the property that are not choked with tall weeds, such as grazed grassland and margins of unpaved roads.

3.3.4 *Coast live oak woodland*

An area of coast live oak woodland adjacent to the abandoned vineyard includes over 30 coast live oak trees averaging 16 inches diameter at breast height. These trees range from 6 to 73 inches sum dbh (that is, dbh of all main trunks added together) with a mean sum dbh of 25 inches. Coast live oak woodland occupies approximately 1.3 acres. Multiple mature coast live oaks, in good condition, also grow in small stands scattered about the property. In some areas, these stands of trees function as woodland; in other locations, individual oaks persist in open savanna.

In addition, approximately 5.39 acres of mixed woodland are present on a knoll with small abandoned structures just south of the existing sorting facility. Mixed woodland on the subject site is not dominated by coast live oaks; instead, abandoned ornamental trees and shrubs are intermixed with mature coast live oaks. Mature coast live oaks over 50 inches diameter at breast height (dbh) are present; however, coast live oaks are not the dominant tree at this location.

Barn owls and great horned owls were observed roosting in oak trees throughout the property.

3.3.5 *Wetlands, waters, and riparian habitats*

Wetlands, other waters, and aquatic habitats on the subject property include isolated slope wetlands, an ephemeral drainage with seasonal wetlands, willow riparian habitat,

reservoirs, and retention basins. Channel banks and portions of the streambed support a mixture of annual and perennial wetland vegetation, including mature willows. Wetland also occurs in hydrologically connected swales that feed the ephemeral stream during storms. Small, patchy slope wetlands dominated by a single hydrophytic species, *Juncus phaeocephalus*, are scattered in the abandoned vineyard and on slopes well away from the stream channel. Wetlands provide habitat for amphibians and invertebrates as well as hydrophytic plant species. A delineation of potential jurisdictional wetlands was completed in 2006 and submitted to the Corps for verification in 2007 (Althouse and Meade, Inc., February 2007). Bruce Henderson, U.S. Army Corps of Engineers project manager, visited the site on April 4, 2007 and verbally verified the delineation.

A. Isolated slope wetlands

Slope wetlands are present on approximately 0.25 acres of the property, in shallow depressions and from saturated return flow seeps along lower hillsides. In these isolated shallow depressions and seeps, wetland vegetation is composed of primarily flat-stem rush (*Juncus phaeocephalus*), with occasional individuals of Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), toad rush (*Juncus bufonius*), and loosestrife (*Lythrum hyssopifolium*). Non-native annual grasses and herbs, including soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), and wild radish (*Raphanus sativus*) form a dense ring of vegetation around these isolated patches of seasonal wetland.

B. Ephemeral stream channel with seasonal wetlands

An un-named ephemeral stream flows through the subject site, connecting to Canada Verde Creek (the east fork of Pismo Creek), just west of Highway 227, near the subject site. The drainage supports ephemeral flows during storms, and includes several small pools that hold water into late spring. The drainage varies from narrow channel within deeply incised banks in the upper drainage to nearly flat, weakly defined braided channels under willow canopy in the floodplain. Logs and rootwads placed in the drainage have exacerbated bank erosion in some locations.

Approximately 2.2 acres of wetlands along and within the stream channel are more diverse and provide higher-quality habitat than slope wetlands on the subject property. A mixture of annual and perennial species, including willows (*Salix lasiolepis*), sedges (*Carex* sp.), spikerush (*Eleocharis macrostachya*), flat-stem rush (*Juncus phaeocephalus*), rabbit's-foot grass (*Polypogon monspeliensis*) and curly dock (*Rumex crispus*) are present in channels and adjacent wetland, forming multiple layers of vegetation in some locations.

Erosion, head-cuts, and prolonged summer grazing in the stream channel have damaged wetland habitat in some locations. Herb-layer vegetation has been stripped or trampled in some areas, particularly in the floodplain. Hoof shear has created churned soil surfaces in wet or moist soil resulting in little vegetative cover and abnormal patterns of soil drying. Riparian and wetland habitats recover slowly from prolonged late-season grazing, and are susceptible to erosion during the first fall rains.

C. Willow riparian habitat

Arroyo willow shrubs and small trees are present in and along the drainage, forming a dense canopy on the flood plain near the southwest edge of the property. Although surface water dries in late spring, soils remain moist into July in this approximately 0.85-acre thicket of mature Arroyo willows. The willow thicket provides excellent nesting habitat for many bird species, including robins and towhees, which were nesting in willows on the property in 2006.

D. Pond aquatic habitat

One perennial pond and two seasonal detention basins are present on the subject property. A reservoir located within the ephemeral stream channel holds water throughout the year. A retention basin downhill of the recycling sort facility holds surface water seasonally, drying in summer. In addition, small pools within the stream channel hold water into late spring.

Water level in the approximately 0.43-acre reservoir (surface area at capacity) is supplemented with pumped groundwater. Water from the pond is then used to fill water trucks for dust control. Water levels fluctuate on a daily basis. Above the maximum capacity level of the pond, willows are present on the northern shore, near the inlet. Cattails seasonally occupy the pond perimeter. Other areas of the shore support weedy vegetation, primarily black mustard, perennial mustard, and wild radish. Although this pond is disturbed on a regular basis, bullfrogs and several species of birds, including mallard ducks, barn swallows, and killdeer, were observed in this habitat. The pond also provides moderate potential breeding habitat for federally threatened California red-legged frogs (*Rana aurora draytonii*).

A 0.16-acre detention basin adjacent to existing sort facilities holds shallow surface water during the wet season, drying in late spring. Stormwater runoff from the sort facility, road, and parking area flow into the retention basin, where sediment settles from stormwater before it flows over a concrete spillway and joins the ephemeral stream. The basin is partially vegetated with facultative and hydrophytic species, including Fremont cottonwood, Echinochloa grass, smartweed, cattails, and rabbit's-foot grass. A 0.21-acre detention basin adjacent to existing compost operations holds shallow standing water during the wet season. This basin also traps runoff and leachate from composting operations. It supports patches of facultative and hydrophytic species, including occasional cattails, rabbit's-foot grass, and willow-herb. Both seasonal pools provides moderate seasonal breeding habitat for common amphibians, such as western toad (*Bufo boreas*) and Pacific chorus frog (*Pseudacris regilla*), and could be used seasonally by California red-legged frogs.

3.3.6 Anthropogenic habitat

The remaining area consists of approximately 23 acres of anthropogenic habitat divided among three primary uses: a greenwaste composting area, a recyclable materials sort facility, and roads with parking. The greenwaste composting area includes windrows of compost 20 feet wide by 8 feet high, large piles of raw materials (plant waste, untreated

wood, etc.), and smaller piles of finished compost. Several machines and vehicles, including grinders, loaders, and dump trucks, operate in the compost area on a daily basis between 7 a.m. and 5 p.m. The sort facility is housed within a metal building, in which recyclable materials are recovered through a combination of mechanical and hand sorting. Loaders, conveyors, and mechanical sorters are operated between 8 a.m. and 4:30 p.m. The daily noise and human presence between approximately 7 a.m. and 5 p.m. is likely to limit wildlife use of anthropogenic habitats during daytime hours. However, several mammals, including rats, mice, ground squirrels, feral cats, raccoons, skunks, and opossums, are likely to forage in anthropogenic habitat during evening and night hours.

3.4 Plant List

The 147 species of plants identified on the subject property consist of 47 native species and 100 introduced species (Table 4). One rare species, Obispo Indian paintbrush, was identified during spring floristic surveys conducted from May through June 2006.

TABLE 4. PLANT LIST. A floristic survey of the property identified 147 species of plants. A complete inventory of landscape plants was not made. One rare species was identified on the property.

Scientific Name	Special Status	Origin	Common Name
Trees - 17 Species			
<i>Abies</i> sp.	None	Planted	Fir
<i>Beaucarnea recurvata</i>	None	Planted	Ponytail palm
<i>Cupressus macrocarpa</i>	None	Planted	Monterey cypress
<i>Eucalyptus globulus</i>	None	Introduced	Blue gum
<i>Eucalyptus</i> sp.	None	Planted	Red gum
<i>Juniperus</i> sp.	None	Planted	Juniper
<i>Juglans</i> hybrid	None	Planted	Walnut hybrid
<i>Liquidambar styracifolia</i>	None	Planted	Sweet gum
<i>Pinus radiata</i>	None	Planted	Monterey pine
<i>Pittosporum</i> sp.	None	Planted	Pittosporum
<i>Populus fremontii</i> ssp. <i>fremontii</i>	None	Native	Fremont cottonwood
<i>Prunus armeniaca</i>	None	Planted	Apricot
<i>Prunus dulcis</i>	None	Planted	Almond
<i>Prunus x domestica</i>	None	Planted	Edible plum
<i>Quercus agrifolia</i>	None	Native	Coast live oak
<i>Salix lasiolepis</i>	None	Native	Willow
<i>Sapium sebiferum</i>	None	Introduced	Chinese tallow tree

Scientific Name	Special Status	Origin	Common Name
Shrubs – 14 Species			
<i>Artemisia californica</i>	None	Native	California sagebrush
<i>Atriplex semibaccata</i>	None	Introduced	Australian saltbush
<i>Baccharis pilularis</i>	None	Native	Coyote brush
<i>Ceanothus</i> sp.	None	Planted	California lilac
<i>Cotoneaster lacteus</i>	None	Introduced	Cotoneaster
<i>Hazardia squarrosa</i>	None	Native	Saw-toothed goldenbush
<i>Heteromeles arbutifolia</i>	None	Native	Toyon
<i>Lavandula</i> cultivars	None	Planted	Lavender
<i>Myrtis communis</i>	None	Planted	Myrtle
<i>Rhamnus californica</i>	None	Native	Coffeeberry
<i>Rosa</i> cultivar	None	Planted	Cultivated rose
<i>Rosmarinus officinalis</i> cultivars	None	Planted	Rosemary
<i>Toxicodendron diversilobum</i>	None	Native	Poison oak
<i>Vitis vinifera</i>	None	Planted	Cultivated grape
Herbs – 95 Species			
<i>Ambrosia psilostachya</i>	None	Native	Western ragweed
<i>Amsinckia menziesii</i> var. <i>intermedia</i>	None	Native	Rancher's fireweed
<i>Amaranthus albus</i>	None	Introduced	Tumbleweed
<i>Anagallis arvensis</i>	None	Introduced	Scarlet pimpernel
<i>Asclepias eriocarpa</i>	None	Native	Indian milkweed
<i>Asparagus officinalis</i>	None	Planted	Edible asparagus
<i>Brassica nigra</i>	None	Introduced	Black mustard
<i>Brodiaea terrestris</i> spp. <i>terrestris</i>	None	Native	Brodiaea
<i>Camissonia cheiranthifolia</i>	None	Native	Beach evening-primrose
<i>Camissonia contorta</i>	None	Native	Sun cup
<i>Carduus pycnocephalus</i>	None	Introduced	Italian thistle
<i>Carex praegracilis</i>	None	Native	Sedge
<i>Carpobrotus chilensis</i>	None	Introduced	Sea-fig
<i>Castilleja densiflora</i> ssp. <i>obispoensis</i>	List 1B.2	Native	Obispo Indian paintbrush
<i>Chamomilla suaveolens</i>	None	Introduced	Pineapple weed
<i>Chrysanthemum frutescens</i>	None	Planted	Marguerite daisy
<i>Cirsium vulgare</i>	None	Introduced	Bull thistle
<i>Claytonia perfoliata</i>	None	Native	Miner's lettuce

Scientific Name	Special Status	Origin	Common Name
<i>Convolvulus arvensis</i>	None	Introduced	Bindweed
<i>Conyza bonariensis</i>	None	Introduced	Asthmaweed
<i>Conyza canadensis</i>	None	Introduced	Common horseweed
<i>Cyperus esculentus</i>	None	Native	Yellow nutsedge
<i>Eleocharis macrostachya</i>	None	Native	Common spikerush
<i>Epilobium ciliatum</i>	None	Native	Willow-herb
<i>Eremocarpus setigerus</i>	None	Native	Turkey mullein
<i>Erodium botrys</i>	None	Introduced	Storksbill filaree
<i>Erodium cicutarium</i>	None	Introduced	Redstem filaree
<i>Eschscholzia californica</i>	None	Native	California poppy
<i>Euphorbia peplus</i>	None	Introduced	Petty spurge
<i>Filago gallica</i>	None	Introduced	Herba impia
<i>Foeniculum vulgare</i>	None	Introduced	Fennel
<i>Geranium dissectum</i>	None	Introduced	Geranium
<i>Gnaphalium palustre</i>	None	Native	Marsh cudweed
<i>Gnaphalium</i> sp.	None	Introduced	Everlasting
<i>Helianthus</i> sp.	None	Introduced	Sunflower
<i>Heliotropium curassavicum</i>	None	Native	Salt heliotrope
<i>Hemizonia increscens</i> ssp. <i>increscens</i>	None	Native	Tarplant
<i>Heterotheca grandiflora</i>	None	Introduced	Telegraph weed
<i>Hirschfeldia incana</i>	None	Introduced	Mustard
<i>Hypochaeris glabra</i>	None	Introduced	Smooth cat's ear
<i>Hypochaeris radicata</i>	None	Introduced	Rough cat's-ear
<i>Juncus bufonius</i>	None	Native	Toadrush
<i>Juncus mexicanus</i>	None	Native	Mexican rush
<i>Juncus patens</i>	None	Native	Spreading rush
<i>Juncus phaeocephalus</i>	None	Native	Flat-stem rush
<i>Juncus tenuis</i>	None	Native	Slender rush
<i>Lactuca serriola</i>	None	Introduced	Prickly lettuce
<i>Limonium sinuatum</i>	None	Introduced	English statice
<i>Linaria canadensis</i>	None	Native	Toad flax
<i>Lotus corniculatus</i>	None	Introduced	Bird's foot trefoil
<i>Lotus purshianus</i>	None	Native	Spanish-clover
<i>Lotus strigosus</i>	None	Native	Strigose bird-foot trefoil
<i>Lupinus bicolor</i>	None	Native	Miniature lupine

Scientific Name	Special Status	Origin	Common Name
<i>Lupinus nanus</i>	None	Native	Sky blue lupine
<i>Lythrum hyssopifolium</i>	None	Introduced	Loosestrife
<i>Madia sativa</i>	None	Native	Tarweed
<i>Marrubium vulgare</i>	None	Introduced	Horehound
<i>Medicago polymorpha</i>	None	Introduced	Common bur-clover
<i>Melilotus alba</i>	None	Introduced	White sweet-clover
<i>Melilotus indica</i>	None	Introduced	Annual sweet-clover
<i>Melilotus officinalis</i>	None	Introduced	Yellow sweet-clover
<i>Oxalis corniculata</i>	None	Introduced	Yellow wood sorrel
<i>Oxalis pes-caprae</i>	None	Introduced	Bermuda-buttercup
<i>Phoradendron villosum</i>	None	Native	Oak mistletoe
<i>Plantago lanceolata</i>	None	Introduced	English plantain
<i>Polygonum arenastrum</i>	None	Introduced	Common knotweed
<i>Polygonum sp.</i>	None	Native	Smartweed
<i>Raphanus sativus</i>	None	Introduced	Wild radish
<i>Ricinus communis</i>	None	Introduced	Castor-bean
<i>Romneya coulteri</i>	None	Planted	Matilija poppy
<i>Rubus discolor</i>	None	Introduced	Himalayan blackberry
<i>Rumex acetosella</i>	None	Introduced	Sheep sorrel
<i>Rumex crispus</i>	None	Introduced	Curly dock
<i>Rumex pulcher</i>	None	Introduced	Fiddle dock
<i>Salsola tragus</i>	None	Introduced	Russian-thistle
<i>Santolina incana</i>	None	Planted	Cotton lavender
<i>Silene gallica</i>	None	Introduced	Catchfly
<i>Silybum marianum</i>	None	Introduced	Milk thistle
<i>Sisyrinchium bellum</i>	None	Native	Blue-eyed grass
<i>Solanum douglasii</i>	None	Native	Nightshade
<i>Sonchus asper</i>	None	Introduced	Prickly sow-thistle
<i>Sonchus oleraceus</i>	None	Introduced	Common sow thistle
<i>Spergula arvensis</i>	None	Introduced	Stickwort
<i>Spergularia rubra</i>	None	Introduced	Sand spurrey
<i>Stellaria media</i>	None	Introduced	Common chickweed
<i>Tetragonia tetragonioides</i>	None	Introduced	New Zealand spinach
<i>Trifolium hirtum</i>	None	Introduced	Rose clover
<i>Trifolium incarnatum</i>	None	Introduced	Crimson clover

Scientific Name	Special Status	Origin	Common Name
<i>Trifolium willdenovii</i>	None	Native	Tomcat clover
<i>Typha latifolia</i>	None	Native	Cattail
<i>Urtica urens</i>	None	Introduced	Dwarf nettle
<i>Verbena lasiostachys</i>	None	Native	Verbena
<i>Vicia sativa</i>	None	Introduced	Common vetch
<i>Vicia villosa</i>	None	Introduced	Winter vetch
<i>Zantedeschia aethiopica</i>	None	Introduced	Calla-lily
Grasses – 21 Species			
<i>Aira caryophylla</i>	None	Introduced	Silver European hairgrass
<i>Avena fatua</i>	None	Introduced	Wild oat
<i>Briza maxima</i>	None	Introduced	Rattlesnake grass
<i>Briza minor</i>	None	Introduced	Little quaking grass
<i>Bromus catharticus</i>	None	Introduced	Rescue grass
<i>Bromus diandrus</i>	None	Introduced	Ripgut brome
<i>Bromus hordeaceus</i>	None	Introduced	Soft chess brome
<i>Cortaderia jubata.</i>	None	Introduced	Jubata grass
<i>Cynodon dactylon</i>	None	Introduced	Bermuda grass
<i>Ehrharta calycina</i>	None	Introduced	Veldt grass
<i>Hordeum marinum</i>	None	Introduced	Mediterranean barley
<i>Hordeum murinum</i>	None	Introduced	Foxtail barley
<i>Leymus triticoides</i>	None	Native	Creeping wild rye
<i>Lolium multiflorum</i>	None	Introduced	Italian ryegrass
<i>Lolium perenne</i>	None	Introduced	Perennial ryegrass
<i>Nassella cernua</i>	None	Native	Nodding needlegrass
<i>Pennisetum setaceum</i>	None	Introduced	Fountain grass
<i>Poa annua</i>	None	Introduced	Annual bluegrass
<i>Polypogon monspeliensis</i>	None	Introduced	Rabbitfoot grass
<i>Vulpia myuros</i>	None	Introduced	Annual fescue
<i>Vulpia octoflora</i>	None	Native	Annual fescue

3.5 Wildlife List

Many wildlife species common to the outer Central Coast Range and Central Coast habitats are expected to occur on or near the subject property. Grassland habitat provides foraging habitat for raptors and predators, including red-tail hawk, barn owl, great horned owl, white-tailed kite, American kestrel, fox, coyote, and bobcat. Peregrine falcons are known to hunt on Cold Canyon property. Reptiles likely to occur in all habitats on the property include gopher snake, king snake, alligator lizard, and western fence lizard. Opossum and striped skunk may also forage on the property.

Nesting birds occur in the oak trees and grassland habitats on the property. Raptor nests were not observed on the property; however the large oaks immediately adjacent to the property are potential nesting sites.

The 73 animal species that were observed or could occur on or near the property include 5 amphibians, 7 reptiles, 45 birds, and 16 mammals (Table 5).

TABLE 5. WILDLIFE LIST. The Special Status column contains the listing status of the organism under the Federal Endangered Species Act, the State Endangered Species Act, or by the CDFG (see Appendix D for status definitions). Species observed on the property during our surveys are designated with a check mark (✓) in the fourth column.

Common Name	Scientific Name	Status	Found on the Property	Habitat Type
Amphibians – 5 species				
Black-bellied Slender Salamander	<i>Batrachoseps nigriventris</i>	None		Oak woodlands, moist areas
California Toad	<i>Bufo boreas halophilus</i>	None		Grassland, woodland
Pacific Chorus Frog	<i>Pseudacris regilla</i>	None	✓	Many habitats near water
California Red-legged Frog	<i>Rana aurora draytonii</i>	FT		Streams, creeks, and ponds
Bullfrog	<i>Rana catesbeiana</i>	None	✓	Perennial streams, ponds
Reptiles – 7 species				
Silvery legless lizard	<i>Anniella pulchra pulchra</i>	CSC		Sandy soils in dunes, woodlands, coastal scrub
Southwestern Pond Turtle	<i>Clemmys marmorata pallida</i>	CSC		Lakes, ponds, streams
California Alligator Lizard	<i>Elgaria multicarinata</i>	None	✓	Open grassland, woodland, chaparral
California Kingsnake	<i>Lampropeltis getulus</i>	None		Woodland, grassland, streams
Gopher Snake	<i>Pituophis melanoleucus</i>	None		Woodland, grassland
Western Fence Lizard	<i>Sceloporus occidentalis</i>	None	✓	Wide range
Side-blotched Lizard	<i>Uta stansburiana</i>	None		Dry habitats

Common Name	Scientific Name	Status	Found on the Property	Habitat Type
Birds – 45 species				
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	None	✓	Marshes, fields
Mallard	<i>Anas platyrhynchos</i>	None	✓	Lakes, ponds, streams
Western Scrub Jay	<i>Aphelocoma californica</i>	None		Oak and riparian woodlands
Great Blue Heron	<i>Ardea herodias</i>	None	✓	Water habitats, grasslands
Great Horned Owl	<i>Bubo virginianus</i>	None	✓	Varied habitats
Red-tailed Hawk	<i>Buteo jamaicensis</i>	None	✓	Open, semi-open country
Red-shouldered Hawk	<i>Buteo lineatus</i>	None		Oak and riparian woodlands
California Quail	<i>Callipepla californica</i>	None		Oak, riparian woodlands
Anna’s Hummingbird	<i>Calypte anna</i>	None	✓	Oak, riparian woodland, scrub
Lesser Goldfinch	<i>Carduelis psaltria</i>	None	✓	Riparian, oak woodlands
American Goldfinch	<i>Carduelis tristis</i>	None	✓	Weedy fields, woodlands
House Finch	<i>Carpodacus mexicanus</i>	None	✓	Wide habitat range
Turkey Vulture	<i>Cathartes aura</i>	None	✓	Open country, oak woodlands
Killdeer	<i>Charadrius vociferous</i>	None	✓	Mud flats, stream banks
Lark Sparrow	<i>Chondestes grammacus</i>	None	✓	Grasslands, edge habitats
Northern Flicker	<i>Colaptes auratus</i>	None		Woodlands
Rock Dove	<i>Columba livia</i>	None		Urban areas
American Crow	<i>Corvus brachyrhynchos</i>	None	✓	Open oak, riparian woodland,
Yellow-rumped Warbler	<i>Dendroica coronata</i>	None		Riparian, oak woodlands
Townsend’s Warbler	<i>Dendroica townsendii</i>	None		Riparian, oak woodlands
Brewer’s Blackbird	<i>Euphagus cyanocephalus</i>	None	✓	Open habitats
American Kestrel	<i>Falco sparverius</i>	None		Open, semi-open country
Peregrine falcon	<i>Falco peregrinus</i>	SE²	✓	Nests on cliffs, banks, dunes, mounds near water
Barn Swallow	<i>Hirundo rustica</i>	None	✓	Open country, farmyards
Dark-eyed Junco	<i>Junco hyemalis</i>	None		Oak woodlands
Loggerhead Shrike	<i>Lanius ludovicianus</i>	CSC	✓	Nests in shrubs, trees near open areas
Song Sparrow	<i>Melospiza melodia</i>	None	✓	Oak, riparian woodland
Savannah Sparrow	<i>Passerculus sandwichensis</i>	None		Open habitats, marshes, grasslands

² SE: State Endangered

Common Name	Scientific Name	Status	Found on the Property	Habitat Type
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	None	✓	Urban; open areas near water
California Towhee	<i>Pipilo crissalis</i>	None	✓	Brushy habitats
Bushtit	<i>Psaltriparus minimus</i>	None	✓	Woodlands, chaparral
Ruby-crowned Kinglet	<i>Regulus calundula</i>	None		Oak and riparian woodlands
Black Phoebe	<i>Sayornis nigricans</i>	None	✓	Near water
Say's Phoebe	<i>Sayornis saya</i>	None		Open country, grassland
Western Bluebird	<i>Sialia mexicana</i>	None		Riparian woodland, ranch land
Western Meadowlark	<i>Sturnella neglecta</i>	None		Grasslands
European Starling	<i>Sturnus vulgaris</i>	None	✓	Agricultural, urban
Tree Swallow	<i>Tachycineta bicolor</i>	None		Wooded habitats, water
American Robin	<i>Turdus migratorius</i>	None	✓	Streamsides, woodlands
Western Kingbird	<i>Tyrannus verticalis</i>	None	✓	Open country with scattered trees, farms, roadsides
Barn Owl	<i>Tyto alba</i>	None	✓	Agricultural, woodlands
Hutton's Vireo	<i>Vireo huttonii</i>	None	✓	Oak, riparian woodlands
Mourning Dove	<i>Zenaida macroura</i>	None		Open and semi-open area
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	None		Shrubby, weedy areas
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	None		Shrubby, weedy areas
Mammals – 16 species				
Coyote	<i>Canis latrans</i>	None		Open woodlands, brushy areas, wide ranging
Opossum	<i>Didelphis marsupialis</i>	None		Woodlands, streams
Feral Cat	<i>Felis catus</i>	None	✓	Varied
Bobcat	<i>Lynx rufus</i>	None		Chaparral and woodlands
Striped Skunk	<i>Mephitis mephitis</i>	None	✓	Mixed woods, chaparral
California Vole	<i>Microtus californicus</i>	None		Grassland meadows
Mule Deer	<i>Odocoileus hemionus</i>	None	✓	Many habitats
Deer Mouse	<i>Peromyscus maniculatus</i>	None	✓	All dry land habitats
Western Harvest Mouse	<i>Reithodontomys megalotis</i>	None		Grassland, dense vegetation near water
Broad-footed Mole	<i>Scapanus latimanus</i>	None	✓	Moist soils with ample food (insects, worms, etc.)
California Ground Squirrel	<i>Spermophilus beecheyi</i>	None	✓	Grasslands
Desert Cottontail	<i>Sylvilagus audubonii</i>	None	✓	Brushy areas
American Badger	<i>Taxidea taxus</i>	CSC		Open grasslands

Common Name	Scientific Name	Status	Found on the Property	Habitat Type
Valley Pocket Gopher	<i>Thomomys bottae</i>	None	✓	Variety of habitats
Gray Fox	<i>Urocyon cinereoargenteus</i>	None		Chaparral and forest
Red Fox	<i>Vulpes fulva</i>	None		Forest and open country

3.6 Special status Species

The CNDDDB and the CNPS On-line Inventory of Rare and Endangered Plants of California contain records for 73 special status species and five sensitive natural communities known to be present in the designated search area (Table 6). Three additional special status species were added to the list from our knowledge of the area. These species are marked with an asterisk (*). The search area included all USGS 7.5 minute quadrangles within five miles of the property: Arroyo Grande NE, Lopez Mountain, Pismo Beach, and San Luis Obispo. Appropriate habitat conditions are found on the property for nine special status animals and ten rare plants. One rare plant was identified during our spring field surveys of the property.

3.6.1 Introduction to CNPS Lists

Plant species are considered rare when their distribution is confined to localized areas, when there is a threat to their habitat, when they are declining in abundance, or are threatened in a portion of their range. The listing categories range from species with a low threat (List 4) to species that are presumed extinct (List 1A). The 1043 plants of List 1B are rare throughout their range. All but a few species are endemic to California. All of them are judged to be vulnerable under present circumstances, or to have a high potential for becoming vulnerable. Most of the plants of List 1B have declined significantly over the last three centuries in California. For an explanation of the CNPS listing scheme and CNDDDB status codes, see Appendix D.

3.6.2 Introduction to CNDDDB definitions

"Special plants" is a broad term used to refer to all the plant taxa inventoried by the CNDDDB, regardless of their legal or protection status. Special plants include vascular plants and high priority bryophytes (mosses, liverworts, and hornworts).

"Special Animals" is a general term that refers to all of the animal taxa inventoried by the CNDDDB, regardless of their legal or protection status. These taxa may be listed or proposed for listing under the State and/or Federal Endangered Species Acts, but they may also be species deemed biologically rare, restricted in range, declining in abundance, or otherwise vulnerable. Animals listed as California Special Concern (CSC) species are not listed under State or Federal Endangered Species Acts, but are considered rare or declining in abundance. The Special Concern designation is intended to provide the Department of Fish and Game, consulting biologists, land planners and managers with lists of species that require special consideration during the planning process in order to avert continued population declines and potential costly listing under federal and state endangered species laws.

3.6.3 Potential occurrence of special status species

Table 6 lists all 73 special status species and five sensitive natural communities known to occur in 7.5' quadrangles within five miles of the project site. Federal and state status, global and state rank, CNPS listing status (plants), and the California Department of Fish and Game (CDFG) designation (animals) for each species is given. Typical blooming period, habitat preference, potential habitat on site, whether or not the species was observed on the property, and the effect of the proposed activity are also provided.

TABLE 6. POTENTIAL RARE SPECIES LIST. The CNDDDB and CNPS database search for special status species in the Arroyo Grande NE, Lopez Mountain, Pismo Beach, and San Luis Obispo quadrangles found 73 special status species and five sensitive natural communities. Ten rare plants and nine special animals have the potential to occur on the subject site. One rare plant was documented on the property in May 2006. Predicted impacts are outlined in section 5.0, and mitigation recommendations are provided in section 6.0.

Plants						
Common and Scientific Names	Fed/State Status Global/State Rank CNPS List	Blooming Period	Habitat Preference	Potential Habitat?	Observed on Site?	Effect of Proposed Activity
1. Hoover's Bent Grass <i>Agrostis hooveri</i>	None/none G3/S2.2 List 1B.2	April - July	Sandy soil in oak woodland habitat. <600 m. s CCo, s SCoRO (SLO, SB Counties)	Yes. Appropriate soils and habitat are present in mature coast live oak woodland.	No	Not Significant
2. Arroyo de la Cruz Manzanita <i>Arctostaphylos cruzensis</i>	None/none G2/S2.2 List 1B.2	December - March	Sandy bluffs; <150 m. s CCo (s Monterey, nw SLO Counties)	No. Species typically restricted to coast. Appropriate soil and habitat not present.	No	Not Significant
3. Santa Lucia Manzanita <i>Arctostaphylos luciana</i>	None/none G2/S2.2 List 1B.2	February - March	Shale outcrops, slopes, chaparral, 500-700 m. SCoRO (SE of Cuesta Pass, SLO County)	No. Typical substrate not present; south of known range of species.	No	Not Significant
4. Morro Manzanita <i>Arctostaphylos morroensis</i>	Threatened/none G2/S2.2 List 1B.1	December - March	Sand dunes; <200 m. s CCo (Morro Bay, SLO County)	No. Outside known range of species.	No	Not Significant
5. Pecho Manzanita <i>Arctostaphylos pechoensis</i>	None/none G2/S2.2 List 1B.2	November - March	Shale outcrops, chaparral, coniferous forest; <850 m. s CCo (Pecho Hills, SLO)	No. Appropriate substrate and habitat not present.	No	Not Significant
6. Santa Margarita Manzanita <i>Arctostaphylos pilosula</i>	None/none G2/S2.2 List 1B.2	December - March	Shale outcrops, slopes, chaparral; 300-1100 m. s SCoRO (near Santa Margarita, SLO)	No. Appropriate habitat and substrate not present; outside known range of species.	No	Not Significant

	Common and Scientific Names	Fed/State Status Global/State Rank CNPS List	Blooming Period	Habitat Preference	Potential Habitat?	Observed on Site?	Effect of Proposed Activity
Plants							
7.	Wells' Manzanita <i>Arctostaphylos wellsii</i>	None/none G2/S2.1? List 1B.1	December - May	Sandstone outcrops in chaparral, oak woodland. <400 m. s CCo (hills se of San Luis Obispo)	Yes. Shallow soil from sandstone provide potential habitat in oak woodland and scrub.	No	Not Significant
8.	Marsh Sandwort <i>Arenaria paludicola</i>	Endangered/ Endangered G1/S1.1 List 1B.1	May - August	Boggy meadows, marshes <300 m. s CCo (Nipomo Mesa, SLO County, Santa Ana River, SCo)	No. Appropriate habitat not present on the subject site.	No	Not Significant
9.	Miles' Milk-vetch <i>Astragalus didymocarpus</i> var. <i>milesianus</i>	None/none G5T2/S2.2 List 1B.2	March - June	Clay or serpentine soils in coastal scrub, grassy areas near coast. 0-90 m. Endemic to SLO County	No. Appropriate soils not present.	No	Not Significant
10.	San Luis Mariposa Lily <i>Calochortus obispoensis</i>	None/none G2/S2.1 List 1B.2	May - July	Dry serpentine gen in chaparral; 100-500 m. SCoRO Endemic to SLO County	No. Appropriate substrate not present.	No	Not Significant
11.	San Luis Obispo Mariposa Lily <i>Calochortus simulans</i>	None/none G2/S2.3 List 1B.3	April - May	Grassland, oak woodland & pine forest, on sand, granite, or serpentine; <1100 m. Endemic to SLO County	Yes. Potential habitat occurs in grazed annual grassland and patches of coast live oak woodland.	No	Not Significant
12.	Dwarf Calycadenia <i>Calycadenia villosa</i>	None/none G2/S2.1 List 1B.1	May - October	Dry, rocky hills, ridges, in chaparral, woodland, meadows and seeps; <1100 m. c&s SCoRO	No. Appropriate habitat type not present on site.	No	Not Significant

	Common and Scientific Names	Fed/State Status Global/State Rank CNPS List	Blooming Period	Habitat Preference	Potential Habitat?	Observed on Site?	Effect of Proposed Activity
Plants							
13.	Cambria Morning Glory <i>Calystegia subacaulis</i> ssp. <i>episcopalis</i>	None/none G3T1/S1.2 List 1B.2	April - May	Dry, open scrub, woodland, or grassland; <500 m. c SCoRO Endemic to SLO County	Yes. Potential habitat occurs in annual grassland and agrestal habitat.	No	Not Significant
14.	Dwarf Calycadenia <i>Calycadenia villosa</i>	None/none G2/S2.1 List 1B.1	May - October	Dry, rocky hills, ridges, in chaparral, woodland, meadows and seeps; <1100 m. c&s SCoRO	No. Appropriate habitat not present.	No	Not Significant
15.	San Luis Obispo Sedge <i>Carex obispoensis</i>	None/none G2/S2.2 List 1B.2	April - June	Serpentine springs, stream sides; <600 m. Endemic to SLO County	No. Appropriate substrate not present.	No	Not Significant
16.	Obispo Indian Paintbrush <i>Castilleja densiflora</i> ssp. <i>obispoensis</i>	None/none G5T2/S2.2 List 1B.2	April	Coastal grassland, <100 m. Endemic to SLO County.	Yes. Annual grassland onsite is adequate for this species.	Yes	Not Significant with Mitigation
17.	Congdon's Tarplant <i>Centromadia parryi</i> ssp. <i>congdonii</i>	None/none G4?T1/S1.1 List 1B.2	May - (November)	Mesic grassland, open ground; <100 m. CW	No. Seasonally wet areas on site are not appropriately open.	No	Not Significant
18.	Dwarf Soaproot <i>Chlorogalum pomeridianum</i> var. <i>minus</i>	None/none G5T1/S1.2 List 1B.2	May - August	Serpentine outcrops in chaparral; gen <750 m. NCoRI, SnFrB, SCoRO	No. Appropriate substrate not present onsite.	No	Not Significant
19.	Brewer's Spineflower <i>Chorizanthe breweri</i>	None/none G2/S2.2 List 1B.3	May - August	Chaparral, foothill woodland on serpentine; <800 m. Endemic to SLO County	No. Appropriate substrate not present.	No	Not Significant
20.	Straight-awned Spineflower <i>Chorizanthe rectispina</i>	None/none G1/S1.2 List 1B.3	May - July	Chaparral, dry woodland in sandy soil; 200-600 m. Endemic to SLO County	Yes. Moderately appropriate habitat is present on upland slopes.	No	Not Significant

	Common and Scientific Names	Fed/State Status Global/State Rank CNPS List	Blooming Period	Habitat Preference	Potential Habitat?	Observed on Site?	Effect of Proposed Activity
Plants							
21.	Chorro Creek Bog Thistle <i>Cirsium fontinale</i> var. <i>obispoense</i>	Endangered G2T1/S1.2 List 1B.2	February - July	Serpentine seeps and streams; <300 m. c SCoRO Endemic to SLO County	No. Appropriate substrate not present.	No	Not Significant
22.	La Graciosa Thistle <i>Cirsium loncholepis</i>	Endangered/Threatened G2/S2.2 List 1B.1	May - August	Wetlands in dunes; <50 m. s CCo (s SLO, n Santa Barbara Counties)	No. Appropriate dune habitat not present.	No	Not Significant
23.	Surf Thistle <i>Cirsium righthophilum</i>	None/Threatened G2/S2.2 List 1B.2	April - June	Dunes, bluffs; <20 m. s CCo (s SLO, n SB Counties)	No. Dune and bluff habitat are not present.	No	Not Significant
24.	Pismo Clarkia <i>Clarkia spectiosa</i> ssp. <i>immaculata</i>	Endangered/Rare G4T1/S1.1 List 1B.1	May - July	Sandy hills near coast; <100 m. s CCo (+/- Pismo to Edna, SLO County)	Yes. Upland slopes with annual grassland in sandy soils are adequate habitat.	No	Not Significant
25.	Leafy Tarplant <i>Deinandra increscens</i> ssp. <i>foliosa</i>	None/none G4G5T2/S2.2 List 1B.2	June - September	Sandy soils in valley and foothill grassland; 300-500 m. s SCoR	Yes. Grazed annual grassland onsite provides appropriate habitat.	No	Not Significant
26.	Dune Larkspur <i>Delphinium parryi</i> ssp. <i>blochmaniae</i>	None/none G4T2/S2.2 List 1B.2	April - May	Coastal chaparral, sand. 0-200 m. s CCo	No. Appropriate habitat not present on site.	No	Not Significant
27.	Beach Spectaclepod <i>Dithyrea maritima</i>	None/Threatened G2/S2.1 List 1B.1	March - May	Sea shores, sandy soils on dunes near the shore; <50 m s CCo, SCo, Baja CA.	No. Outside known range of species.	No	Not Significant
28.	San Luis Obispo Serpentine Dudleya <i>Dudleya abramsii</i> ssp. <i>betinae</i>	None/none G3T1/S1.2 List 1B.2	May - July	Rocky outcrops in serpentine grassland; <50-180 m. Endemic to SLO County	No. Appropriate serpentine substrate not present.	No	Not Significant

	Common and Scientific Names	Fed/State Status Global/State Rank CNPS List	Blooming Period	Habitat Preference	Potential Habitat?	Observed on Site?	Effect of Proposed Activity
Plants							
29.	San Luis Obispo Dudleya <i>Dudleya abramsii</i> ssp. <i>murina</i>	None/none G3T2/S2.3 List 1B.3	May - June	Serpentine outcrops; 120-300 m. Endemic to SLO County	No. Appropriate serpentine substrate not present.	No	Not Significant
30.	Dudleya's Dudleya <i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i>	None/none G2T2/S2.1 List 1B.1	April - June	Open, rocky slopes, often serpentine or clay soils; <450 m. s CCo, SCo	No. Appropriate soils and habitat not present.	No	Not Significant
31.	Blochman's Leafy Daisy <i>Eriogonum blochmaniae</i>	None/none G2/S2.2 List 1B.2	July - August	Sand dunes and hills; <30 m. s CCo	No. Outside known range of species.	No	Not Significant
32.	Indian Knob Mountain Balm <i>Eriodictyon altissimum</i>	Endangered/ Endangered G2Q/S2.2 List 1B.1	March - June	Sandstone ridges, chaparral; +/- 250 m. Endemic to SLO County	No. Appropriate habitat not present.	No	Not Significant
33.	Hoover's Button-celery <i>Eryngium aristulatum</i> var. <i>hooveri</i>	None/none G5T2/S2.1 List 1B.1	July	Vernal pools, lagunas; 0-1000 m. s SnFrB, SCoR	No. Appropriate habitat not present.	No	Not Significant
34.	San Francisco Gumplant <i>Grindelia hirsutula</i> var. <i>maritima</i>	None/none G5T2/S2.1 List 1B.2	August - September	Sandy or serpentine slopes, sea bluffs; <400 m. n CCo	No. Moderately appropriate habitat may be present, but the property is outside the known range of this rare variety.	No	Not Significant
35.	San Benito Fritillary <i>Fritillaria viridea</i>	None/none G3/S3.2 List 1B.2	March - May	Serpentine slopes; 200-1500 m. SCoR (San Benito, SLO Counties)	No. Appropriate serpentine substrate not present.	No	Not Significant
36.	Mesa Horkelia <i>Horkelia cuneata</i> ssp. <i>puberula</i>	None/none G4T2/S2.1 List 1B.1	February - September	Dry, sandy coastal chaparral; gen 70-700 m. SCoRO, SCo.	No. Appropriate habitat not present.	No	Not Significant

	Common and Scientific Names	Fed/State Global/State Rank CNPS List	Blooming Period	Habitat Preference	Potential Habitat?	Observed on Site?	Effect of Proposed Activity
Plants							
37.	Jones's Layia <i>Layia jonesii</i>	None/none G1/S1.1 List 1B.2	March - May	Open serpentine or clay slopes; <400 m. Endemic to SLO County	No. Appropriate serpentine substrate not present.	No	Not Significant
38.	San Luis Obispo County Lupine <i>Lupinus ludovicianus</i>	None/none G2/S2.2 List 1B.2	April - July	Open, grassy limestone in oak woodland; 50-500 m. Endemic to SLO County	Yes. Moderate habitat is present in oak woodland on sandy soils from calcareous sandstone.	No	Not Significant
39.	Carmel Valley Bush Mallow <i>Malacothamnus palmeri</i> var. <i>involutus</i>	None/none G3T2Q/S2.2 List 1B.2	May - October	Chaparral, cismontane woodland, coastal scrub; 30-1100 m. s CCo, SCoRO	No. Appropriate habitat is not present on site.	No	Not Significant
40.	Palmer's Monardella <i>Monardella palmeri</i>	None/none G2/S2.2 List 1B.2	June - August	Serpentine soils in chaparral, forest; 200-800 m. SCoRO	No. Appropriate serpentine substrate not present.	No	Not Significant
41.	California Spineflower* <i>Mucronea californica</i>	None/none G3/S3.2 List 4.2	March - August	Sandy soil in coastal scrub, chaparral; 0-1400 m. CW, SW	No. Appropriate habitat not present.	No	Not Significant
42.	White Rabbit-tobacco <i>Pseudognaphalium leucocephalum</i>	None/None G4/S3.2 List 2.2	August - November	Chaparral, woodland, coastal scrub, with sandy, gravelly soils. < 150 m. SCo.	No. Appropriate habitat not present.	No	Not Significant
43.	Adobe Sanicle <i>Sanicula maritima</i>	None/Rare G2/S2.2 List 1B.1	February - May	Coastal, grassy, open wet meadows, ravines; +/- 150 m. CCo (SLO County)	No. Appropriate clay soils not present.	No	Not Significant
44.	Black-flowered Figwort <i>Scrophularia atrata</i>	None/none G2/S2.2 List 1B.2	March - July	Calcareous (Sometimes diatomaceous) soils; <500 m. s SCoRO	Yes. Moderately appropriate habitat is present on site.	No	Not Significant

	Common and Scientific Names	Fed/State Status Global/State Rank CNPS List	Blooming Period	Habitat Preference	Potential Habitat?	Observed on Site?	Effect of Proposed Activity
Plants							
45.	Rayless Ragwort <i>Senecio aphanactis</i>	None/none G3?/S1.2 List 2.2	January - April	Drying alkaline flats, chaparral, cismontane woodland, coastal scrub; <400 m. CW, SCo, ChI	No. Appropriate substrate and habitat not present.	No	Not Significant
46.	Cuesta Pass Checkerbloom <i>Sidalcea hickmanii</i> ssp. <i>anomala</i>	None/Rare G3T1/S1.2 List 1B.2	May - June	Closed-cone-conifer forest, gen serpentine; 600-800 m. Endemic to SLO County	No. Appropriate serpentine substrate not present.	No	Not Significant
47.	Most-beautiful Jewel-flower <i>Streptanthus albidus</i> ssp. <i>peramoenus</i>	None/none G2T2/S2.2 List 1B.2	April - June	Open, grassy or +/- barren slopes, often serpentine; +/- 150-800 m. c SCoRO	No. Appropriate substrate not present.	No	Not Significant
48.	Saline Clover <i>Trifolium depauperatum</i> var. <i>hydrophilum</i>	None/none G5T2?/S2.2? List 1B.2	April - June	Salt Marshes, open areas in alkaline soils; <300 m. ScV, CW.	No. Appropriate habitat not present.	No	Not Significant
49.	Caper-fruited Troidocarpum <i>Troidocarpum capparideum</i>	None/none G1/S1.1 List 1B.1	March - April	Alkaline clay soils in valley and foothill grassland; <200 m. SCoRO, nw SnJV	No. Appropriate soil type not present.	No	Not Significant

Abbreviations:

CCo: Central Coast
 ChI: Channel Islands
 CW: Central West
 NCoRI: Inner North Coast Range
 SB: Santa Barbara
 SLO: San Luis Obispo
 SCo: South Coast

SCoR: South Coast Ranges
 SCoRO: Outer South Coast Ranges
 ScV: Sacramento Valley
 SnFRB: San Francisco Bay
 SnJV: San Joaquin Valley
 SW: South West

	Common and Scientific Names	Fed/State Status Global/State Rank DFG Rank	Nesting/Breeding Period	Habitat Preference	Potential Habitat?	Observed on Site?	Effect of Proposed Activity
Animals							
50.	Tricolored Blackbird <i>Agelaius tricolor</i>	None/none G2G3/S2 CSC	March 1 through August 31	Requires open water, protected nesting substrate, & foraging area with insect prey near nesting colony.	No. Appropriate colonial nesting habitat not present.	No	Not Significant
51.	California Tiger Salamander <i>Ambystoma californiense</i>	Threatened/none G2G3/S2S3 CSC	Rainy season	Need underground refuges, ground squirrel burrows & vernal pools or other seasonal water for breeding.	No. Appropriate habitat not present.	No	Not Significant
52.	Silvery Legless Lizard <i>Amniella pulchra pulchra</i>	None/none G3G4T3T4Q/S3 CSC	May - September	Sandy or loose loamy soils under sparse vegetation. Soil moisture essential.	Yes. Moderate habitat and appropriate sandy soils are present on site.	No	Not Significant with Mitigation
53.	Pallid Bat <i>Antrozous pallidus</i>	None/none G5/S3 CSC	Spring - Summer	Rock crevices, caves, tree hollows, mines, old buildings, and bridges.	Yes. Cavities and loose bark in oak trees as well as old buildings on site are appropriate habitat.	No	Not Significant with Mitigation
54.	Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i>	Threatened/none G3/S2S3 None	Rainy Season	Clear water sandstone depression pools, grassed swale, earth slump, or basalt flow depression pools.	No. Appropriate vernal pool habitat not present.	No	Not Significant
55.	Western Snowy Plover <i>Charadrius alexandrinus nivosus</i>	Threatened/none G4T3/S2 CSC	March 1 through August 31	Sandy beaches, salt pond levees, & shorelines of large alkali lakes. Needs friable soils for nesting.	No. Appropriate habitat not present on site.	No	Not Significant
56.	Sandy Beach Tiger Beetle <i>Cicindela hirticollis gravida</i>	None/none G5T4/S1 None	n/a	Adjacent to non-brackish water near the coast from San Francisco to N. Mexico. Clean, dry, light-colored sand in the upper zone.	No. Appropriate soil type and habitat not present on site.	No	Not Significant

	Common and Scientific Names	Fed/State Status Global/State Rank DFG Rank	Nesting/Breeding Period	Habitat Preference	Potential Habitat?	Observed on Site?	Effect of Proposed Activity
Animals							
57.	Southwestern Pond Turtle <i>Clemmys marmorata pallida</i>	None/none G3G4T2T3Q/S2 CSC	April - August	Permanent or semi-permanent streams, ponds, lakes.	Yes. A small perennial reservoir and seasonal pools in the drainage provide moderate habitat.	No	Not Significant with Mitigation
58.	Western Yellow-billed Cuckoo (nesting) <i>Coccyzus americanus occidentalis</i>	Candidate/ Endangered G5T2Q/S1 None	March 1 through August 31	Nests in riparian jungles of willow, cottonwood, w/ blackberry, nettles, or wild grape understory. Typically found in larger river systems.	No. Appropriate nesting habitat not present.	No	Not Significant
59.	Monarch Butterfly <i>Danaus plexippus</i>	None/none G5/S3 None	September - March (aggregations)	Roosts located in wind-protected tree groves with nectar and water nearby.	No. Appropriate roosts not present on property.	No	Not Significant
60.	White-tailed Kite <i>Elanus leucurus</i>	None/none G5/S3 Fully Protected	March 1 through August 31	Nests in dense tree canopy near open foraging areas	Yes. Dense patches of remnant oak woodland provide adequate nesting habitat.	No	Not Significant
61.	Horned Lark <i>Eremophila alpestris actia</i>	None/none G5T3/S3 CSC	Spring - Summer	Nests on the ground in open habitats. More common in the interior.	No. Tall, dense weeds and ongoing disturbances have degraded potential nesting habitat.	No	Not Significant
62.	Tidewater Goby <i>Eucyclogobius newberryi</i>	Endangered/none G3/S2S3 CSC	n/a	Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	No. Appropriate habitat not present.	No	Not Significant

	Common and Scientific Names	Fed/State Status Global/State Rank DFG Rank	Nesting/Breeding Period	Habitat Preference	Potential Habitat?	Observed on Site?	Effect of Proposed Activity
Animals							
63.	Western Mastiff Bat <i>Eumops perotis californicus</i>	None/None G5T4/S3? CSC	Spring-Fall	Roots in crevices in cliff faces, high buildings, trees, and tunnels. Inhabits many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral.	Yes. Could roost in existing trees and buildings.	No	Not Significant With Mitigation
64.	Prairie Falcon <i>Falco mexicanus</i>	None/none G5/S3 CSC	March 1 through August 31	Inhabits dry, open terrain. Nests on cliffs near open areas for hunting.	No. Potential foraging habitat, but no nesting habitat present.	No	Not Significant
65.	Peregrine Falcon* <i>Falco peregrinus</i>	De-listed/ Endangered G4T3/S2 Fully Protected	March 1 through August 31	Nests on cliffs, banks, dunes, mounds, and human-made structures, especially near water.	Yes. Falcons forage in open areas in Carpenter Canyon, including the subject property. Nesting habitat is not present on the property.	Yes (Not nesting on site)	Not Significant
66.	Loggerhead Shrike* <i>Lanius ludovicianus</i>	None/none G4/S4 CSC	March 1 through August 31	Open areas with appropriate perches, near shrubby vegetation for nesting.	Yes. Appropriate foraging and nesting habitat present on site.	Yes	Not Significant
67.	California Linderiella <i>Linderiella occidentalis</i>	None/none G2G3/S2S3 None	Rainy season	Seasonal pools in unplowed grasslands with alluvial soils.	No. Vernal pool habitat not found on site.	No	Not Significant
68.	Steelhead Trout South/Central ESU <i>Oncorhynchus mykiss</i>	Threatened/none G5T2/S2 None	February - April	Fed listing refers to runs in coastal basins from Pajaro River south to, but not including, the Santa Maria River.	No. Appropriate habitat not present.	No	Not Significant

	Common and Scientific Names	Fed/State Status Global/State Rank DFG Rank	Nesting/Breeding Period	Habitat Preference	Potential Habitat?	Observed on Site?	Effect of Proposed Activity
Animals							
69.	Coast (California) Horned Lizard <i>Phrynosoma coronatum (frontale)</i>	None/none G4T3T4/S3S4 CSC	May - September	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	No. Appropriate habitat not present on site.	No.	Not Significant
70.	Atascadero June Beetle <i>Polyphylla nubila</i>	None/none G1/S1 None	n/a	Known only from sand dunes in Atascadero and San Luis Obispo, San Luis Obispo County.	No. Appropriate soil type and habitat not present.	No	Not Significant
71.	Purple Martin <i>Progne subis</i>	None/none G5/S3 CSC	March 1 through August 31	Inhabits woodlands, coniferous forests. Nests in woodpecker cavities on dead snags.	No. Appropriate woodland habitat is not present.	No	Not Significant
72.	San Luis Obispo Pyrg <i>Pyrgulopsis taylori</i>	None/none G1/S1	n/a	Freshwater. Known from San Luis Obispo county streams and springs.	No. This specie requires permanent flowing fresh water.	No	Not Significant
73.	California Red-legged Frog <i>Rana aurora draytonii</i>	Threatened/none G4T2T3/S2S3 CSC	January - March	Lowlands and foothills in or near sources of deep water with dense, shrubby or emergent riparian vegetation.	Yes. Moderate habitat is present in the reservoir and drainages on site.	No	Not Significant
74.	Coast Range Newt <i>Taricha torosa torosa</i>	None/none G5T4/S4 CSC	December - May	Slow moving streams, ponds, and lakes with surrounding evergreen/oak forests along coast.	No. Appropriate clear water habitat not present.	No	Not Significant
75.	American Badger <i>Taxidea taxus</i>	None/none G5/S4 CSC	February – May	Needs friable soils in open ground with abundant food source such as California ground squirrels.	Yes. Moderately appropriate habitat is present on site.	No	Not Significant with Mitigation

Habitat descriptions are from the Jepson Manual and the CNDDB.

Common Name	Federal/State Status Global/State Rank	Potential Habitat?	Effect of Proposed Activity
Sensitive Natural Communities			
1. Central Foredunes	None/none G1/S1.2	No. Dune habitat is not found on site.	Not Significant
2. Central Maritime Chaparral	None/none G2/S2.2	No. Chaparral habitat is not found on the property.	Not Significant
3. Coastal and Valley Freshwater Marsh	None/none G3/S2.1	No. Marsh habitat is not found on site.	Not Significant
4. Northern Interior Cypress Forest	None/none G2/S2.2	No. Cypress trees do not occur naturally on site.	Not Significant
5. Serpentine Bunchgrass	None/none G2/S2.2	No. Serpentine rock and soil do not occur on site.	Not Significant

3.6.4 Rare plants that could occur on the property

Appropriate habitat for ten rare plants occurs on the property. One rare plant, Obispo Indian paintbrush, was identified on the property in May 2006. Habitat for one federally listed endangered plant subspecies is present; however, no state or federally listed species were observed on the property during appropriately timed spring surveys conducted in 2006. All rare plant locations identified on the property are plotted on the habitat overlay provided (Appendix B).

- A. **Hoover's Bent Grass** (*Agrostis hooveri*) is a CNPS List 1B.2 species known only from San Luis Obispo and Santa Barbara Counties. It occurs in dry sandy soils in open chaparral and oak woodlands below 600 meters in the coastal zone and south coastal outside range of San Luis Obispo and Santa Barbara Counties. Occurrence #10 in the CNDDDB is from Indian Knob, approximately four miles northwest the subject property; occurrence #7 is from Arroyo Grande Valley, approximately 4.75 miles southeast of the subject property. Potential habitat for this perennial species is present in oak woodland on the subject site. This species was not observed during spring floristic surveys conducted in May through July 2006. Based on appropriately timed surveys, this species does not occur on the property.
- B. **Wells' Manzanita** (*Arctostaphylos wellsii*) is a CNPS List 1B.1 species that is endemic to San Luis Obispo County. It is considered rare due to its local range and specific soil requirements. Wells' manzanita is found in sandy soils and sandstone outcrops on stabilized sand dunes, in chaparral, and open oak woodland habitats. The distribution of *Arctostaphylos wellsii* is centered in eastern Arroyo Grande, extending from Squire Canyon and Indian Knob Hill south through the foothills of Arroyo Grande. The closest occurrence to the subject property is about one mile southeast, near the junction of Noyes Road and Highway 227, at approximately 400 feet in elevation (CNDDDB occurrence #6). Moderate habitat is present on sandy soils in grazed annual grassland and among scattered coast live oaks on site. However, Wells' manzanita does not occur on the subject property.
- C. **San Luis Obispo Mariposa Lily** (*Calochortus simulans*) is a CNPS List 1B.3 species endemic to San Luis Obispo County. It tolerates a wide range of soil conditions, occurring on serpentine outcrops and granitic or sandy soils in habitats ranging from grassland to pine forest. Most occurrences of this species are in eastern San Luis Obispo County, although the species has been observed on the coastal side of the mountains. Its rarity status is due to its limited distribution, even within its natural range. The nearest occurrence is approximately 7 miles northwest of the subject property, in serpentine soils at South Hills in San Luis Obispo (CNDDDB occurrence #16). Potential habitat is present on the subject property, but San Luis Obispo mariposa lily was not found during spring floristic surveys in 2006. Based on appropriately timed surveys, this species does not occur on the property.
- D. **Cambria morning-glory** (*Calystegia subacaulis* ssp. *episcopalis*) is a CNPS List 1B.2 subspecies known only from San Luis Obispo County. CNPS

considers the plant fairly endangered with 20 to 80 percent of occurrences threatened. It occurs in coastal grassland, open scrub, and woodland habitats. Its rarity status is due to the limited distribution of this subspecies, although it may be found commonly within its range and habitat type. The plant forms a small rosette and a conspicuous cream colored flower. Cambria morning-glory was not observed on the property during surveys conducted in May and June 2006. Based on appropriately timed surveys, this species does not occur on the property.

- E. Obispo Indian paintbrush** (*Castilleja densiflora* ssp. *obispoensis*) is a CNPS List 1B.2 subspecies known only from San Luis Obispo County. CNPS considers the plant fairly endangered with 20 to 80 percent of occurrences threatened. It is an annual wildflower that occurs in coastal grasslands in sandy or clay soils. Approximately 1000 individuals of this subspecies were observed in annual grassland and mapped on the subject property in May and June 2006. The site was revisited in April and May of 2007, a drought year, and fewer than 50 individuals were observed.
- F. Straight-awned spineflower** (*Chorizanthe rectispina*) is a CNPS List 1B.3 species known only from Monterey, San Luis Obispo, and Santa Barbara Counties. It occurs on sandy or gravelly soils in open areas of chaparral and woodland. In San Luis Obispo County it occurs in fine sands from eastern Arroyo Grande through Lopez Canyon, in decomposed granite in the Santa Margarita and Creston areas, and in shales in western Atascadero. The closest reported occurrence (CNDDDB #19) is approximately 2.5 miles southeast of the property, in northeastern Arroyo Grande. Moderate habitat for this species is present in grazed annual grassland on the subject property. Althouse and Meade, Inc. surveyed the site in June and July 2006, concurrent with the blooming period for straight-awned spineflower, and did not encounter this species. Based on appropriately timed surveys, this species does not occur on the property.
- G. Pismo Clarkia** (*Clarkia speciosa* ssp. *immaculata*) is a federally listed endangered subspecies endemic to southern San Luis Obispo County. CNPS places this subspecies on List 1B.1, and considers it seriously endangered in California. It is an annual wildflower that occurs in grassland near oak woodland in sandy soils near the coast. The closest reported occurrence is from approximately 1 mile west of the subject property on both sides of Price Canyon Road (CNDDDB occurrence #5). The agrestal/annual grassland habitat is moderately appropriate for Pismo clarkia; however, the dense weed growth and history of ongoing disturbance on site makes occurrence of this species unlikely. Althouse and Meade, Inc. surveyed the property in May and June 2006, concurrent with the blooming period for Pismo clarkia at occurrences nearby, and did not encounter this species. Based on appropriately timed surveys, this species does not occur on the property.
- H. Leafy tarplant** (*Deinandra increscens* ssp. *foliosa*) is a is a CNPS List 1B subspecies known from Monterey, San Luis Obispo, and Santa Barbara Counties. (This taxon was included in the genus *Hemizonia* in the Jepson

manual.) CNDDDB occurrence #1 is from a 1998 report from northeast of Lopez Lake. CNDDDB occurrences #3 and 4 are from the vicinity of Pozo. Common tarplant (*Deinandra increscens* ssp. *increscens*) was identified in grasslands on the property in the summer of 2006. Leafy tarplant is not known from Carpenter Canyon and is not expected to occur on the property. This rare subspecies was not observed on the subject property during floristic surveys conducted in June and July 2006. Based on appropriately timed surveys, this species does not occur on the property.

- I. **San Luis Obispo County Lupine** (*Lupinus ludovicianus*) is a CNPS List 1B species endemic to San Luis Obispo County. Its showy inflorescences prompted it to become the official flower of SLO County. It is now known by relatively few occurrences from east Arroyo Grande to High Mountain Road and Santa Margarita. The species was known from the old Oak Park School site in Tiber Canyon approximately 1.5 miles from the subject property. Appropriate habitat for this species is found on the subject property. No perennial lupines were observed within the subject property during spring surveys conducted in 2006. Based on appropriately timed surveys, this species does not occur on the property.
- J. **Black flowered figwort** (*Scrophularia atrata*) is a CNPS List 1B species known from Santa Barbara and San Luis Obispo Counties. It reaches its northernmost limit in Price Canyon and the vicinity of Indian Knob ridge (CNDDDB #29, 30). This species typically occurs on diatomaceous earth or coarse soils derived from sandstone or shale. Appropriate soils and habitat conditions are present on the subject property. Black-flowered figwort was not found on the subject property in May through July 2006. Based on appropriately timed surveys, this species does not occur on the property.

3.6.5 *Special animals that could occur on or near the property*

Appropriate habitat for nine special animals occurs on the property. Peregrine falcon and loggerhead shrike were observed foraging on the property in 2006, although nesting habitat for peregrines is not present on the property. Potential habitats for California red-legged frogs, southwestern pond turtles, silvery legless lizards, white-tailed kites, pallid bats, and American badgers are present on the subject property, although these species were not observed during site visits conducted in May through July 2006.

- A. **Southwestern pond turtle** (*Actinemys* [=*Emys*] *marmorata pallida*) is a California Special Concern species that inhabits ponds and slow moving streams with adequate pools. Pond turtles will move up seasonal streams during the winter months, and will over-summer in burrows or under deep ground cover when ponds dry out. The perennial reservoir in the northern drainage is poor turtle habitat because of frequent daily disturbances, small pond size, and no haul-out sites such as logs or rocks.. The ruderal and anthropogenic habitats surrounding this pond are poor upland habitat for pond turtles. Pond turtles are not found on the property and are unlikely to occur.

- B. Silvery legless lizard** (*Anniella pulchra pulchra*) is a California Special Concern (CSC) species that inhabits friable soils in a variety of habitats from coastal dunes to oak woodlands and chaparral. Silvery legless lizard is known from both coastal and inland habitats in San Luis Obispo County. The sandy soils in oak woodlands on the property are adequate for silvery legless lizard. This species is not likely to occur in open grasslands and heavily disturbed areas on the subject site. Legless lizards were not found on the property, however detection of this species is difficult due to its burrowing habit. Legless lizard could occur in the oak woodlands.
- C. Pallid bat** (*Antrozous pallidus*) is a California Special Concern species. This is a large, long-eared bat occurring throughout the state from deserts to moist forests. *Antrozous pallidus* is primarily a crevice roosting species and selects roosts where they can retreat from view. They frequently occur in oak woodlands where they roost in tree cavities, or in attics or rafters of buildings. These roosts are generally day or night roosts for one or a few bats. Communal wintering or maternity colonies are more common in rock crevices and caves. This species has been recorded at 22 localities in San Luis Obispo County (Pierson, 2002). In 2000, 20 pallid bats were observed in a tunnel under downtown San Luis Obispo, approximately 7.5 miles from the subject property. Pallid bat could occur in oak tree cavities and small abandoned buildings on the Cold Canyon property.
- D. White-tailed kite** (*Elanus leucurus*) is a California Special Concern species that nests in dense woodlands near meadows, marshes, or grasslands. Appropriate nesting habitat is present in stands of live oak trees on the subject property, although dense, continuous oak woodland on a neighboring property is likely to be more appealing. Kites were not observed on the property during site surveys in May through August 2006.
- E. Western mastiff bat** (*Eumops perotis californicus*) is a California Special Concern species that roosts in crevices in a variety of materials, including buildings, tunnels, boulders, and trees. This species could occur in existing buildings and in trees with loose bark on the subject site. Western mastiff bats were not observed during our site surveys.
- F. Peregrine falcon** (*Falco peregrinus*) is a state-listed Endangered Species (SE). Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except collecting permits for scientific research and relocation permits for the protection of livestock. This raptor was removed from the federal threatened and endangered species list in 1999 (Elphick et al., 2001). Peregrine falcons are known to nest in Carpenter Canyon on steep rocky cliffs. A peregrine falcon was observed foraging on the subject site. No potential nesting habitat is present on the subject property.

- G. Loggerhead shrike** (*Lanius ludovicianus*) is a California Special Concern (CSC) species. It requires open areas with appropriate perches for hunting, and shrubby trees or bushes for nesting. One shrike was observed foraging on the property in August 2006. Appropriate nesting habitat occurs in dense willow riparian habitat on the property.
- H. San Luis Obispo Pyrg** (*Pyrgulopsis taylori*) is an uncommon freshwater snail known from streams near the City of San Luis Obispo. It is reported from small streams and springs, including Brizzolari Creek, the headwaters of San Luis Obispo Creek, and unnamed springs north of San Luis Obispo. This species is not reported from the Carpenter Canyon area, but could occur in Pismo Creek and its tributaries. Pyrgulopsis are gill-breathing snails that have an entirely aquatic life cycle and require permanent fresh water. This species will not occur on the subject property.
- I. California red-legged frog** (*Rana aurora draytonii*) is a federally listed threatened species with sporadic occurrences documented throughout San Luis Obispo County. It generally requires seasonal pools or streams that hold water until late summer for successful breeding. Bullfrogs and introduced fish are detrimental to its breeding success, and have severely reduced many populations in larger watercourses and perennial ponds. The drainage on the property connects to Cañada Verde Creek (the east fork of Pismo Creek) about 300 feet downstream, just west of Highway 227. Cañada Verde then joins Pismo Creek approximately 1.25 miles downstream. The Pismo Creek watershed is known to harbor red-legged frogs. A single adult was observed in a tributary to Pismo Creek in 2005, approximately 2.5 miles from the subject property (Occurrence #843). Although most of the drainage was dry by July 2006, potential perennial habitat is present in the reservoir on site. A California red-legged frog protocol survey by Althouse and Meade, Inc. will be completed in 2007. (As of May 31, 2007 two day surveys and four night surveys have been completed.)
- J. American badger** (*Taxidea taxus*) is a California Special Concern species known from open grassland habitats throughout San Luis Obispo County and elsewhere in California. Appropriate habitat for badger is found in grazed annual grassland on the subject property, and plentiful ground squirrel prey occur in this pasture as well. We searched the property for dens or sign of digging that would indicate the presence of American badger, and did not find evidence of badger activity. Although this species could occur on the property, the current landfill activities make it unlikely that badgers will enter or use the property.

3.6.6 *Special status species not expected to occur on or near the property*

The remaining 53 special status species and 5 sensitive natural communities known to be present in the vicinity of the project are not expected to occur in the property due to the absence of required soil type, lack of appropriate habitat, or because the project site is substantially outside the known range of the species.

4.0 Discussion

4.1 General Discussion of Property Conditions

The property consists of a mosaic of habitats: agrestal, ruderal, annual grassland, remnant oak woodland, anthropogenic, and a complex of wetland, ephemeral drainage, and riparian habitat are present. The site has experienced ongoing disturbance, both from past agricultural operations and landfill activity. Agricultural operations included irrigation, harvest, and weed control. Daily landfill operation includes noise and vibrations from heavy equipment (bulldozers, trucks, etc.), measures to deter seagulls (such as explosions, flares, and falcons), and ongoing human presence. These discourage wildlife from using habitats on the property. Existing grazing practices on the property include late-season grazing in the drainage, which decreases potential for wildlife and aquatic species to use available habitats.

Nine special animals and ten rare plants have the potential to occur on the subject property. Two special animals, peregrine falcon and loggerhead shrike, were observed on the property during site surveys in 2006. Loggerhead shrike could nest in shrubby trees and willows on the property. Peregrine falcons forage on the property, but nesting habitat for this species is not present on site. One rare plant subspecies, Obispo Indian paintbrush, was observed in annual grassland and agrestal habitats. Approximately 1000 individuals were mapped on the property in May 2006. No other rare plant species were observed on the property during spring floristic surveys in 2006. In 2007, a drought year, less than 50 individuals of Obispo Indian paintbrush were observed on the subject site.

The landfill expansion is proposed for a location that is currently anthropogenic, agrestal, annual grassland habitats, with one patch of oak woodland and small areas of state and federal wetland. The abandoned vineyard, a portion of current composting area, and disturbed annual grassland west of the ephemeral stream on site would be removed from their current uses by expansion of the landfill. The abandoned vineyard is dominated by unkept grapevines and ruderal plants. A small patch of coast live oak woodland, intermixed with occasional cultivated trees, shrubs, and vines, occurs between the vineyard and grazed annual grassland, and would also be removed.

Over eighty oak trees in moderate to good condition occur on the property, and many species of birds were observed among the trees. A patch of woodland with 38 oak trees over 6 inches dbh (diameter at breast height) would be removed by the proposed landfill expansion. An additional six to ten oak trees would be impacted and one to five trees would be removed by development of support facilities and widening of Highway 227 at the new entrance. A patch of oak woodland on a knoll near the southern property boundary is proposed for preservation. This patch of disturbed oak woodland would be enhanced by removal of invasive non-natives and additional plantings of young oaks. Other habitat enhancement activities proposed for this location include planting of native understory species.

Direct impacts to the ephemeral stream onsite are not anticipated; however, activities on adjacent land could affect habitats within the drainage. An open space management plan

should be designed to manage and improve habitat quality and include appropriate grazing strategies.

4.2 Regulatory Framework

The California Environmental Quality Act (CEQA) requires the lead agency (in this case, the County of San Luis Obispo) to determine potential environmental effects of the project. The lead agency must also identify other involved agencies that become responsible or trustee agencies.

All of the plants constituting List 1B meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to the CEQA (CEQA section 15065).

Rare plants protected under the California Rare Plant Protection Act must be fully considered under CEQA (CEQA sections 15380, 15386). Proposed impacts that affect more than 10 percent of a given population generally require mitigation at a minimum 2:1 ratio.

Rare plants and special animals protected under the Federal Endangered Species Act (FESA) are protected. The United States Fish and Wildlife Service is the agency that regulates activities affecting federally listed species.

Nesting birds are protected from disturbance by The Migratory Bird Treaty Act of 1918, as regulated by the United States Fish and Wildlife Service (USFWS) and by the California Department of Fish and Game code sections 3503, 3503.5, and 3800.

"Special Animals" is a general term that refers to all of the taxa the CNDDDB is interested in tracking, regardless of their legal or protection status. These taxa may be listed or proposed for listing under the State and/or Federal Endangered Species Acts, but they may also be species deemed biologically rare, restricted in range, declining in abundance, or otherwise vulnerable.

Animals listed as California Special Concern (CSC) species are not listed under State or Federal Endangered Species Acts, but are considered rare or declining in abundance. The Special Concern designation is intended to provide the Department of Fish and Game, consulting biologists, land planners and managers with lists of species that require special consideration during the planning process in order to avert continued population declines and potential costly listing under federal and state endangered species laws.

Wetlands and waters of the United States are protected by the Clean Water Act section 401 and section 404 as regulated by state Regional Water Quality Control Boards (RWQCB) and the U.S. Army Corps of Engineers (USACE) respectively. Any activity that affects jurisdictional federal wetlands must be authorized by the USACE and certified by the RWQCB. Wetlands of the State of California, as defined by CDFG standards (Cowardin methodology), are regulated by the lead agency under CEQA.

5.0 Potential Impacts

The effect of the proposed project on biological resources depends in part on specific design and placement of proposed roads and structures. Analysis of impacts to biological resources is based on the proposed location of landfill expansion, and conceptual design of entrance roads and support facilities using August 2006 and May 2007 excavation plans from Shaw Environmental. A biological resource map showing locations of biological resources on the subject property is provided in Appendix A. Mitigation measures for potential impacts to biological resources are provided in Section 6.0.

5.1 Habitat Impacts

5.1.1 *Agrestal*

The proposed landfill expansion would result in the loss of approximately 12 acres of agrestal habitat occurring on moderate slopes. Agrestal habitat on the property harbors one rare plant species, Obispo Indian paintbrush, and has the potential to support one special animal, American badger. Impacts to these two special status species occurring within agrestal/annual grassland habitat are considered separately below (see section 5.4). Predicted impacts are shown on the biological constraints map in Appendix A.

5.1.2 *Ruderal*

The proposed enlargement of the recycling sort facility would result in the loss of approximately 10 acres of ruderal habitat occurring on moderate slopes. Loss of 10 acres of ruderal habitat dominated by non-native herbaceous weeds would not be a significant impact.

5.1.3 *Annual Grassland*

The proposed expansion of the landfill would result in the loss of approximately 11.7 acres of annual grassland habitat. Annual grassland habitat on the property harbors one rare plant species, Obispo Indian paintbrush, and has the potential to support one special animal, American badger. Impacts to special status species occurring within agrestal/annual grassland habitat are considered separately below (see section 5.4).

5.1.4 *Coast live oak woodland*

The proposed project would result in the loss of approximately 1.3 acre of remnant coast live oak woodland habitat. Within this woodland, a total of 34 to 38 trees coast live oak trees greater than 6 inches dbh would be removed, depending on final plans for widening Highway 227. Impacts to individual isolated oak trees occurring within annual grassland habitat are considered separately below (see section 5.2).

5.1.5 *Wetlands, waters, and riparian habitats*

Wetlands, other waters, and riparian habitats occur within and adjacent to the proposed landfill expansion area. Potential impacts to all these habitats include removal, equipment operation in sensitive areas, damage to vegetation, increased trash and debris in sensitive habitats, and increased sediment deposition due to nearby soil disturbance. Potential impacts to individual wetland, riparian, and aquatic habitats are discussed below.

State jurisdictional slope wetlands

Approximately 0.25 acre of slope wetlands would be removed by the proposed project. The impacted slope wetlands consist of isolated patches of seasonally wet soil supporting a single hydrophytic species, flat stem rush. These wetlands receive water from saturated return flow through the soil, over shallow bedrock, and are not hydrologically connected to the ephemeral stream on the property.

Federal jurisdictional channel wetlands

The proposed landfill expansion would remove approximately 0.31 acre of jurisdictional wetlands in shallow swales that feed the ephemeral stream on site. The impacted wetlands consist of seasonally wet channels fed by a combination of stormwater and subsurface flow. The impacted areas of the jurisdictional wetland are dominated by a single hydrophytic species, flat-stem rush. More diverse wetlands in the main drainage will not be removed by the proposed project.

The proposed project would require construction of a new entrance road and turn lanes on Highway 227. During construction of the new entrance, Highway 227 would be widened, and existing culverts under Highway 227 would be replaced with oversized culverts to improve the hydrology and drainage of water onto neighboring property. This would require temporary disturbance of wetland waters, and permanent removal of up to 7500 square feet (0.2 acre) of jurisdictional wetland.

Non-wetland waters

The project is not expected to introduce new impacts to the existing perennial reservoir or stormwater detention basin. However, the proposed new access road, road widening, and replacement of culverts under Highway 227 would require temporary impacts to non-wetland waters.

Riparian habitat

The proposed project will occur in the vicinity of willow riparian habitat. Potential impacts from the proposed landfill expansion include equipment use in the riparian corridor, removal of riparian vegetation, and increased amounts of trash and debris in the riparian habitat and channel. Close proximity to large areas of bare soil could result in increased sediment deposition in the drainage. Road widening of Highway 227 and culvert replacement would require removal of approximately 7500 square feet of willow riparian.

5.1.6 Sensitive natural communities

No habitats listed by the Department of Fish and Game as sensitive natural communities occur on the subject property.

5.2 Oak Tree Impacts

Impacts to oak trees occurring in closed canopy woodland remnants are considered under habitat impacts (Section 5.1.4). An additional five isolated individual coast live oak trees scattered in annual grassland would be removed and up to 6 more oaks would be impacted by the proposed project. A tree inventory and map detailing the size, condition, habitat value, location, and potential project impacts to coast live oak trees on the subject property has been prepared (Appendix F). The oaks proposed for removal are in

moderate to poor health, and average 25 inches sum diameter at breast height (that is, diameters of all trunks added together).

5.3 Common Wildlife Impacts

5.3.1 Nesting habitat

Nesting birds may be impacted if grading or vine and shrub removal/trimming is conducted during nesting season (March 1 through August 31). Take of nesting birds could occur if grassland habitat is graded or if existing grape vines and small shrubs are removed during nesting season. Take of common nesting birds is prohibited by federal and state code.

5.3.2 Reduction of movement corridors

The site is located adjacent to an active landfill and highway that effectively block transit of wildlife across the property. Landfill expansion on the property is not expected to significantly affect wildlife movement.

5.3.3 Displacement and/or take

Common wildlife species currently living on the property or using the property as transients will be displaced by development of the site. Take of common species may occur during construction activities.

5.4 Special Status Species Impacts

Nine special animals and ten rare plants have the potential to occur on the property. Special animals with potential to occur include three special mammals, two reptiles, one amphibian, and three birds. Of the ten rare plant species noted as having the potential to occur, only Obispo Indian paintbrush was identified on the property in May and June 2006, and spring 2007.

5.4.1 Special animals

- A. **Silvery legless lizard** (*Anniella pulchra pulchra*) has potential to occur in patches of oak woodland within the project site. Approximately 1.3 acre of potential habitat for this reptile would be removed by the proposed project. Oak tree removal and grading activities could result in take of this California Special Concern (CSC) species.
- B. **Pallid bat** (*Antrozous pallidus*) and **Western mastiff bat** (*Eumops perotis*) could occur in oak tree cavities and small abandoned buildings on the Cold Canyon property. Removal of oak trees and abandoned buildings could result in disturbance or take of special status bats.
- C. **Southwestern pond turtle** (*Clemmys marmorata pallida*) do not presently occur on the property, but could enter the drainage, or the perennial reservoir from outside source populations. Project activities that disturb the drainage could result in disturbance or take of pond turtles. Turtles are also known to over-summer in underground burrows; therefore, grading activities conducted adjacent to potential turtle habitat could also result in take of pond turtles.

- D. White-tailed kite** (*Elanus leucurus*) was not observed on the property, but could nest in stands of live oak trees within the project site. Removal of oak trees during the nesting season could result in take of white tailed kites and their young.
- E. Peregrine falcon** (*Falco peregrinus*) forage on the subject site, but no potential nesting habitat is present on the subject property. The local falcons currently forage successfully above and near the existing landfill, and are accustomed to equipment operation in the vicinity. Therefore, this project is not expected to have a significant impact on this species.
- F. Loggerhead shrike** (*Lanius ludovicianus*) was observed foraging on the property in August 2006, and could nest in dense willow riparian habitat on the property. Removal or disturbance of willow riparian habitat during the nesting season could result in take of loggerhead shrike and their young.
- G. California red-legged frog** (*Rana aurora draytonii*) is known from the Pismo Creek watershed, and could potentially occur on the subject site. The species is most likely to occur outside the project area, in a ephemeral drainage or a small reservoir. At the time of this report, red-legged frogs had not been observed on the subject site. A California red-legged frog protocol survey by Althouse and Meade, Inc. will be completed in August 2007. The protocol survey will establish presence or absence and assess potential project impacts on this species.
- H. American badger** (*Taxidea taxus*) could use annual grasslands, ruderal, and agrestal habitats on the subject site. Approximately 33.8 acres of habitat usable by badgers would be removed. Indirect impacts to badgers include the loss of foraging and denning habitat. Direct impacts could occur if a badger takes up residence on the site prior to grading activities.

5.4.2 Rare plants (*Obispo Indian paintbrush*)

Obispo Indian paintbrush was identified during our spring floristic surveys of the property (see Biological Resource Map in Appendix A). In wet years, approximately 1000 individuals occur in patches scattered through agrestal and grassland habitats; in a dry year fewer than 50 individuals were counted. The proposed project would remove approximately 90 percent (up to 900 individuals) of the Obispo Indian paintbrush on site.

6.0 Mitigation Recommendations

We recommend the following mitigation measures to reduce project impacts to biological resources to a less than significant level.

6.1 Habitat Mitigations

6.1.1 Agrestal

Impacts to agrestal habitat are not significant except where occurrences of special status species are involved. Mitigation for special status species is addressed in section 6.4. Other mitigation for loss of approximately 12 acres of agrestal habitat is not required.

6.1.2 Ruderal

Impacts to ruderal habitat are not significant. Mitigation for loss of ruderal habitat is not required.

6.1.3 Annual grassland

Impacts to annual grassland habitat are not significant except where special status species are involved. Mitigation for special status species is addressed in section 6.4. Additionally, several small discontinuous patches of native perennial bunchgrasses would be removed. We recommend use of these species in revegetation and landscaping plans. Other mitigation for loss of approximately 12 acres annual grassland habitat is not required.

6.1.4 Remnant oak woodland

The loss of oak woodland is a significant impact, and requires mitigation. Approximately 1.3 acres of oak woodland with almost 40 oaks greater than five inches dbh would be removed. Between 34 and 38 oak trees over five inches dbh would be removed, dependent on final design of road widening for Highway 227 at the new entrance. Loss of these trees and woodland habitat requires mitigation to compensate for loss of oak trees and oak woodland habitat function. The following measures will reduce project impacts to remnant oak woodland habitat to a less than significant level.

- BR-1.** Trees shall be clearly marked in the field such that their status as trees to be removed, impacted, or preserved is immediately evident to workers. A qualified tree trimmer or certified arborist shall oversee trimming and care of trees to be impacted but not removed.
- BR-2.** Each oak greater than five inches dbh that is removed shall be replaced in kind at a 4:1 ratio. Replacement trees shall be of local origin, the same species as removed trees, of minimum 1-gallon or 10-inch tree tube size. Planted trees shall be provided with irrigation and browse protection and shall be monitored and maintained for a minimum of seven years after planting.
- BR-3.** Each oak greater than five inches in diameter that is impacted shall be replaced in kind at a 2 to 1 ratio. Replacement trees shall be of local origin, the same

species as removed trees, of minimum 1-gallon or 10-inch tree tube size. Planted trees shall be provided with irrigation and browse protection and shall be monitored and maintained for a minimum of seven years after planting.

- BR-4.** A monitoring report shall be prepared annually during the mitigation period and submitted to the county. This report will summarize survival and growth of mitigation trees on the subject site.
- BR-5.** Prior to trimming and/or removal of any trees, preconstruction surveys for nesting birds and special-status bats, shall be completed by a qualified biologist (See below).
- BR-6.** Alternatively, if an appropriate mitigation bank or fund approved by the lead agency becomes available for San Luis Obispo County, the applicant may opt to pay mitigation fees into the bank in lieu of performing onsite planting. This option may be used alone or in combination with onsite planting to satisfy mitigation requirements for oak woodland impacts.

6.1.5 Wetlands, waters, and riparian habitats

Mitigation requirements for impacts to wetlands, other waters, and riparian habitats are dependent on which agencies have regulatory authority over the habitat. Impacts to wetlands, waters, and riparian habitats usually require permits from regulatory agencies. We anticipate that the proposed project will require permits from the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWCQB), and the California Department of Fish and Game (CDFG) for activities associated with widening Highway 227 and expanding the landfill. The regulatory agencies have their own mitigation requirements to activities that affect wetlands and riparian habitats. At a minimum, the following measures to reduce impacts to wetlands, waters, and riparian habitats on site the following measures are recommended:

- BR-7.** Approximately 1.9 acre of seasonal wetland along the ephemeral drainage will be preserved and enhanced. Approximately 0.8 acre of willow riparian habitat in the floodplain will be preserved and enhanced.
- BR-8.** Additional mitigation in the form of wetland creation, restoration, and enhancement shall be conducted onsite in degraded areas of the existing drainage. A complete wetland restoration and management plan that details these activities shall be prepared to meet or exceed County and Agency standards.

Mitigation measures for each type of wetland are detailed below:

State jurisdictional slope wetlands

- BR-9.** Where possible, state wetlands shall be avoided by project activities and provided with protective fencing as appropriate.
- BR-10.** Impacts to state wetlands require mitigation at a 1 to 1 ratio, that is, one square foot of state wetland habitat restored or created for each square foot of wetland habitat removed. Mitigation shall be performed onsite if possible. If sufficient

area is not available on the subject property, the applicant shall participate in a mitigation bank or create wetland within the Pismo Creek watershed.

Federal jurisdictional wetlands

BR-11. Where possible, federal wetlands shall be avoided by project activities and provided with protective fencing as appropriate to prevent accidental damage from daily landfill operations.

BR-12. Impacts to federal wetlands require mitigation at a 3 to 1 ratio, that is, three square foot of state wetland habitat restored or created for each square foot of wetland habitat removed. Mitigation shall be performed onsite.

BR-13. If sufficient area is not available on the subject property, the applicant shall participate in a mitigation bank or create wetland within the Pismo Creek watershed

Non-wetland waters

BR-14. Impacts to non-wetland waters require mitigation at a 1 to 1 ratio, that is, one linear foot of non-wetland waters restored or created for linear foot disturbed or removed.

Riparian habitats

BR-15. Removal of riparian vegetation requires replacement at a one to one ratio. Impacts to riparian habitat shall be mitigated through restoration and enhancement of degraded stream channel and riparian habitat in the upper reach of an ephemeral drainage on the subject site.

6.1.6 Anthropogenic habitat

Impacts to anthropogenic habitat are not significant except where occurrences of special status species are involved. Mitigation for special status species is addressed in section 6.4. Other mitigation for loss of anthropogenic habitat is not required.

6.2 Individual Oak Trees

Impacts to individual oak trees occurring in open savanna or mixed woodland rather than oak woodland require mitigation. Five individual coast live oak trees scattered in annual grassland and at the edged of mixed woodland would be removed by development of support facilities. Up to seven more individual oaks would be impacted but not removed by the proposed project. The following measures are recommended:

BR-16. Trees shall be clearly marked in the field such that their status as trees to be removed, impacted, or preserved is immediately evident to workers. A qualified tree trimmer or certified arborist shall oversee trimming and care of trees to be impacted but not removed.

BR-17. Each oak greater than 6 inches dbh that is removed shall be replaced in kind at a 4:1 ratio. Replacement trees shall be of local origin, the same species as removed trees, of minimum 1-gallon or 10-inch tree tube size. Planted trees

shall be provided with irrigation and browse protection and shall be monitored and maintained for a minimum of seven years after planting.

- BR-18.** Each oak greater than 6 inches in diameter that is impacted shall be replaced in kind at a 2 to 1 ratio. Replacement trees shall be of local origin, the same species as removed trees, of minimum 1-gallon or 10-inch tree tube size. Planted trees shall be provided with irrigation and browse protection and shall be monitored and maintained for a minimum of seven years after planting.

6.3 Common Wildlife Mitigations

6.3.1 Nesting habitat

Migratory non-game native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section 10.13). Sections 3503, 3503.5 and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests including raptors and other migratory non-game birds (as listed under the Federal MBTA).

- BR-19.** Within one week of ground disturbance or tree removal/trimming activities, if work occurs between March 1 and August 31, nesting bird surveys shall be conducted. To avoid impacts to nesting birds, grading and construction activities that affect trees and grasslands shall not be conducted during the breeding season from March 1 to August 31. If construction activities must be conducted during this period, nesting bird surveys shall take place within one week of habitat disturbance. If surveys do not locate nesting birds, construction activities may be conducted. If nesting birds are located, no construction activities shall occur within 100 feet of nests until chicks are fledged. Construction activities shall observe a 300-foot buffer for occupied raptor nests. If special-status bird species nests are observed, the applicant shall confer with the Lead Agency to determine an appropriate buffer distance. A pre-construction survey report shall be submitted to the lead agency immediately upon completion of the survey. The report shall detail appropriate fencing or flagging of the buffer zone and make recommendations on additional monitoring requirements.

6.3.2 Displacement and/or take

Wildlife expected to occur on the property includes common species such as red fox, mule deer, coyote, striped skunk, raccoon, black-tailed jackrabbit, and several species of rodents. Mitigations for impacts to common wildlife species are usually not required.

6.4 Special status Species Mitigations

6.4.1 Special Animals

The subject property provides potential habitat for nine special-status animals. To reduce the potential for impacts on special status animals, both general and species-specific measures are recommended as follows.

BR-20. Prior to all ground-disturbing activities, a qualified biologist shall provide preconstruction training to all workers involved in site activities. This training shall consist of instruction on special status species with potential to occur on the property and their habitats. Workers shall be instructed on who to contact and how to proceed if they observe special status species on the project site.

A. Silvery legless lizard could occur in oak woodlands on site. Removal of oak woodland could result in take of this species.

BR-21. A biological monitor qualified to capture and move legless lizards shall be present during all initial ground-disturbing activities. The monitor shall capture and relocate silvery legless lizards disturbed during tree clearance and initial site grading. In addition, the monitor shall rake loose soil within oak woodlands prior to excavation to find and move legless lizards. Efforts shall focus on relocation of silvery legless lizards to safe habitat outside the project area.

B. Pallid bat and Western Mastiff Bat could occur in oak tree cavities and small abandoned buildings on the property. Removal of trees and abandoned structures could impact special status bats.

BR-22. Prior to trimming or removal of trees and/or removal of existing structures, a qualified biologist shall conduct a preconstruction survey for roosting bats. If bats are not found, tree and/or building removal can proceed. If bats are observed, bat exclusion measures shall be instituted prior to disturbance. If maternal bat colonies are found they shall not be disturbed until young bats have left the site. Then bat exclusion measures shall be instituted prior to disturbance.

C. Loggerhead shrike and white tailed kite could nest onsite. Take could occur during tree and shrub removal. **Implement BR-19** within 7 days prior to tree trimming/tree removal.

D. Peregrine falcon is known to forage onsite; appropriate nesting habitat does not occur on site, therefore no significant impact is anticipated, and no mitigation is required.

E. Southwestern pond turtle is unlikely but possible to occur in drainages and reservoirs when water is present and hidden beneath leaf litter on in burrows during summer. Take could occur if this species is present when initial site grading activities begin.

BR-23. Prior to vegetation removal and grading, a qualified biologist shall conduct a preconstruction survey for turtles to find and relocate to safe habitat any turtles present in the project area.

BR-24. A biological monitor shall be present for initial vegetation removal and grading activities. The monitor shall be qualified to relocate pond turtles to a safe location as necessary.

F. California red-legged frog is unlikely but possible to occur onsite in a small reservoir and seasonal pools onsite. A protocol survey is in progress; as of May 2007, no red-legged frogs have been observed onsite. The proposed completion date for protocol red-legged frog surveys is July 5, 2007. If California red-legged frogs are observed onsite, the applicant will consult with CDFG and USFWS regarding appropriate measures to protect frogs.

G. American badger

American badger could occur in the project areas. The project will result in a net loss of badger habitat. Mitigation is not required for loss of badger habitat. To ensure take of live badgers does not occur, the following mitigation recommendation shall be implemented:

BR-25. A pre-construction survey shall be conducted within thirty days of beginning work on the project to identify if badgers are using the site. The results of the survey shall be sent to the project manager, CDFG, and the County of San Luis Obispo.

If the pre-construction survey finds potential badger dens, they shall be inspected to determine whether they are occupied. The survey shall cover the entire property, and shall examine both old and new dens. If potential badger dens are too long to completely inspect from the entrance, a fiber optic scope shall be used to examine the den to the end. Inactive dens may be excavated by hand with a shovel to prevent re-use of dens during construction. If badgers are found in dens on the property between February and July, nursing young may be present. To avoid disturbance and the possibility of direct take of adults and nursing young, and to prevent badgers from becoming trapped in burrows during construction activity, no grading shall occur within 100 feet of active badger dens between February and July. Between July 1 and February 1 all potential badger dens shall be inspected to determine if badgers are present. During the winter, badgers do not truly hibernate but are inactive and asleep in their dens for several days at a time. Because they can be torpid during the winter, they are vulnerable to disturbances that may collapse their dens before they rouse and emerge. Therefore, surveys shall be conducted for badger dens throughout the year. If badger dens are found on the property during the pre-construction survey, the CDFG wildlife biologist for the area shall be contacted to review current allowable management practices.

6.4.2 Rare plants (Obispo Indian paintbrush)

One rare plant was identified during spring floristic surveys of the property in May and June 2006. Rare plant locations within the property are plotted on the habitat map included with this report (Appendix B).

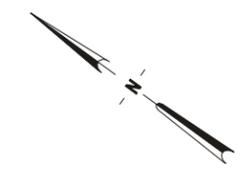
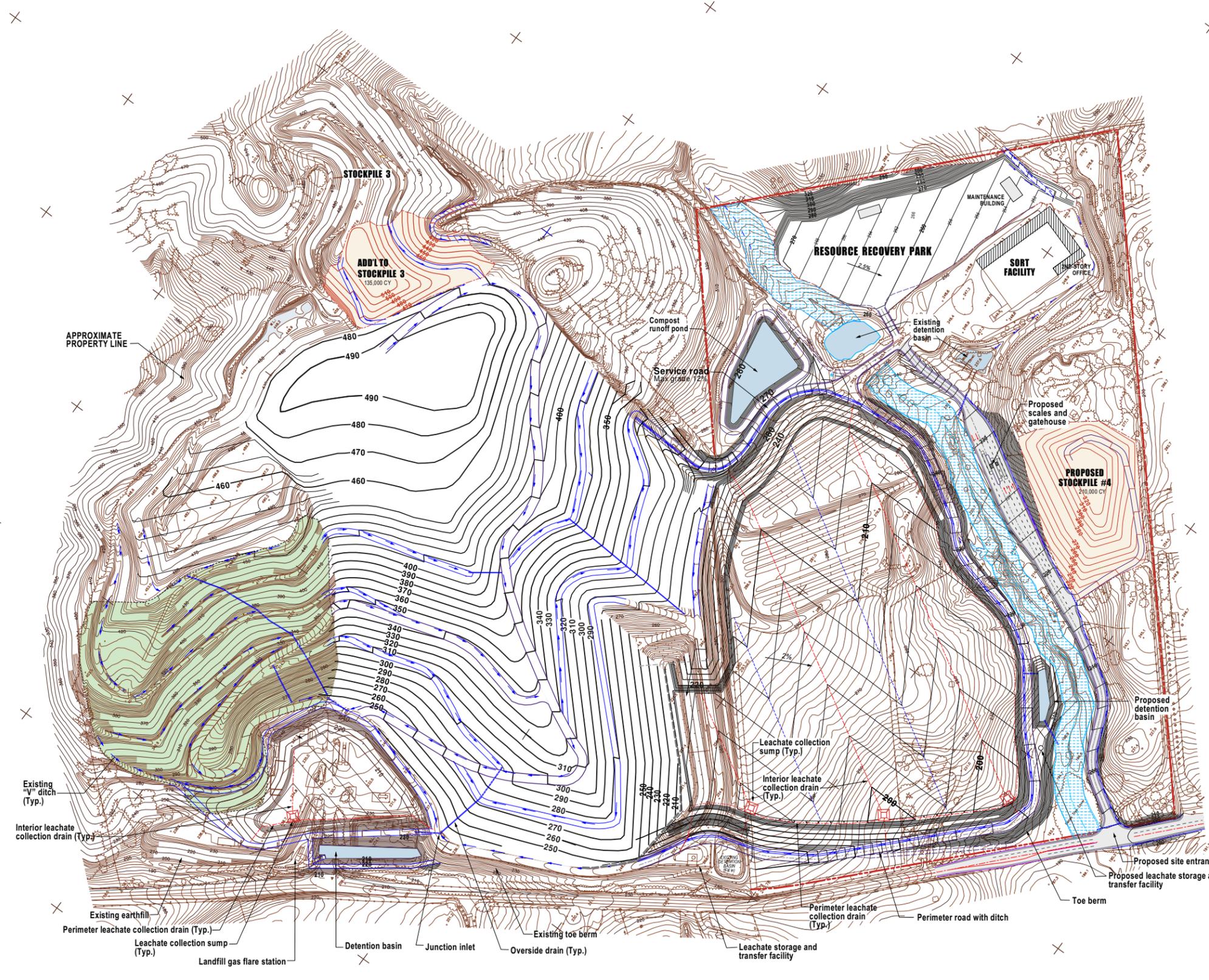
BR-26. Mitigation for loss of Obispo Indian paintbrush will be conducted onsite as per the Obispo Indian Paintbrush Mitigation and Monitoring Plan (MMP) that has been prepared for this project. Mitigation shall consist of seed collection and direct sowing on closed portions of the landfill. Mitigation will be deemed complete when an annual count of Obispo Indian paintbrush reaches levels comparable to original site conditions, adjusted for rainfall.

7.0 References

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APPENDIX A – Plans

- **Landfill Expansion Excavation Plan, May 2007** – by Shaw Environmental with base topographic map prepared by Golden State Aerial Surveys, Inc.
- **Biological Resource Map** – prepared by Althouse and Meade, Inc. over base map by Shaw Group, Inc.
- **Predicted Impacts to Biological Resources** – prepared by Althouse and Meade, Inc. over base map by Shaw Group, Inc.



APPROXIMATE PROPERTY LINE

STOCKPILE 3

ADD'L TO STOCKPILE 3
135,000 CY

RESOURCE RECOVERY PARK

MAINTENANCE BUILDING

SORT FACILITY

EXISTING DETENTION BASIN

EXISTING TOE BERM

PROPOSED SCALES AND GATEHOUSE

PROPOSED STOCKPILE #4
210,000 CY

PROPOSED DETENTION BASIN

PROPOSED SITE ENTRANCE

PROPOSED LEACHATE STORAGE AND TRANSFER FACILITY

TOE BERM

PERIMETER ROAD WITH DITCH

PERIMETER LEACHATE COLLECTION DRAIN (Typ.)

LEACHATE STORAGE AND TRANSFER FACILITY

LEACHATE COLLECTION SUMP (Typ.)

INTERIOR LEACHATE COLLECTION DRAIN (Typ.)

EXISTING DETENTION BASIN

EXISTING EARTHFILL

PERIMETER LEACHATE COLLECTION DRAIN (Typ.)

LEACHATE COLLECTION SUMP (Typ.)

LANDFILL GAS FLARE STATION

DETENTION BASIN

JUNCTION INLET

OVERSIDE DRAIN (Typ.)

EXISTING TOE BERM

LEACHATE STORAGE AND TRANSFER FACILITY

EXISTING "V" DITCH (Typ.)

INTERIOR LEACHATE COLLECTION DRAIN (Typ.)

EXISTING DETENTION BASIN

100'-WIDE RIPARIAN CORRIDOR

CLOSED LANDFILL AREA

SCALE 0 200 400 600 800 FEET

Base compiled by photogrammetric methods by Golden State Aerial Surveys, San Luis Obispo, California
Date of photography - January 3, 2006

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
DATE OF ISSUE		DWN BY	S.E.R.	CHK BY		
MAY 2007		DES BY	S.E.R.	APP BY		

Shaw Environmental, Inc.
2360 Bering Drive
San Jose, California
Phone: (408) 352-5800
Fax: (408) 433-1912

COLD CANYON LAND FILL, INC.
COLD CANYON LANDFILL
SAN LUIS OBISPO COUNTY, CALIFORNIA

EXCAVATION PLAN

DRAWING NO. **2**
PROJECT NO. 108527

C:\Project Files\Cold Canyon\Landfill Expansion\07 Exc Plan\DWG SER 22407

Biological Resources Map

for

88.27 acres at Cold Canyon Landfill
Owned by Corral de Piedra Land Company

APNs 044-261-011, -047, and -048
Carpenter Canyon Road
San Luis Obispo County, California

Surveys conducted by Althouse and Meade, Inc.
in May, June, July, and August 2006

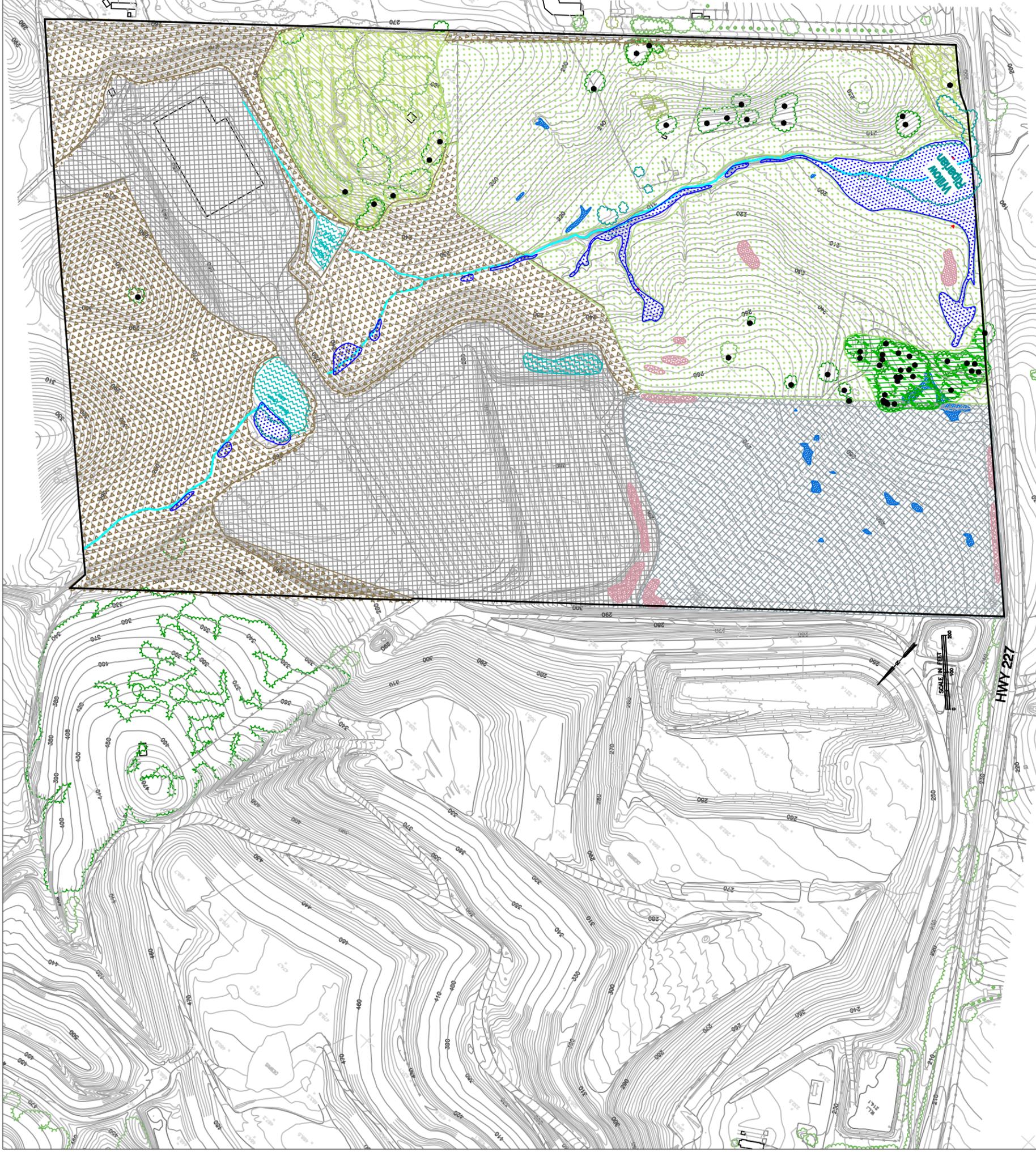
Althouse and Meade, Inc.
1875 Wellsona Road
Paso Robles, CA 93446
(805) 467-1041



Biological Resources Legend

	Limits of 2006 Biological Surveys by Althouse and Meade, Inc.		Ephemeral stream, centerline
	Agricultural habitat (~12.76 acres)		Channel wetlands—federal (~2.23 acres)
	Anthropogenic habitat (~22.76 acres)		Slope Wetlands – state (~0.25 acre)
	Annual grassland (~22.84 acres)		Reservoirs and detention basins (~0.79 acre)
	Coast live oak woodland (~1.29 acres)		Tagged oak trees
	Mixed woodland (~5.39 acres)		Willow Canopy
	Obispo Indian Paintbrush (~1000 individuals in 2006)		Canopy
	Ruderal habitat (~20.95 acres)		

Biological resources map prepared by Althouse and Meade, Inc.



Impact Map

for

Proposed Expansion of Cold Canyon Landfill Owned by Corral de Piedra Land Company, Inc.

APNs 044-261-011, -047, and -048
Carpenter Canyon Road
San Luis Obispo County, California

Approximate limits of disturbance for the proposed expansion of Cold Canyon Landfill are shown as an overlay on habitats and biological resources as mapped in May through August 2006 by Althouse and Meade, Inc. Limits of disturbance for proposed project are from Shaw Environmental plans dated August 2006 and May 2007. Tree impacts are shown separately on a tree impact map.

Topographic survey by Golden State Aerial Surveys, flight date January 3, 2006. Oak trees and wetland boundaries surveyed by Fleming Surveys, Inc.

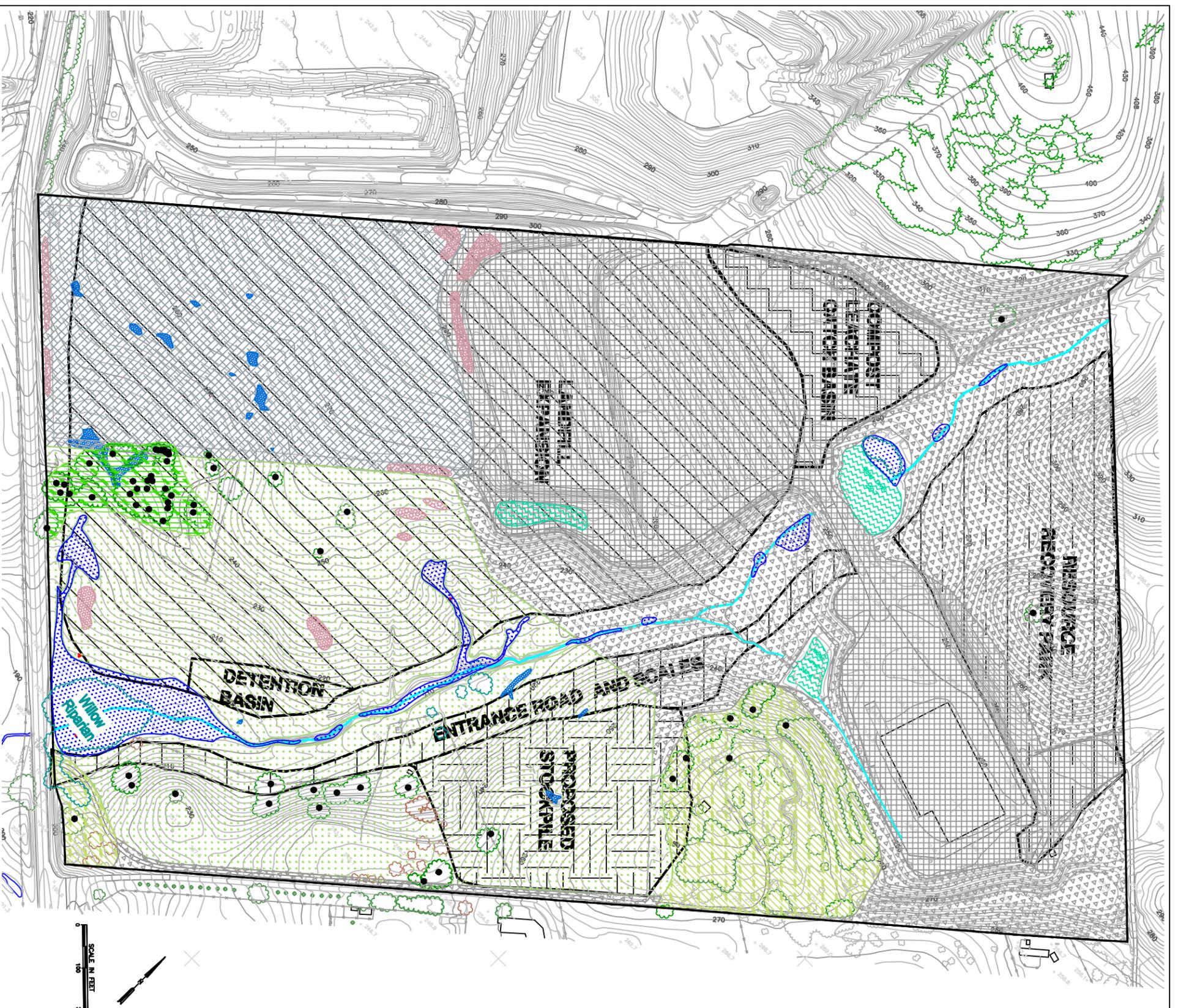


Althouse and Meade, Inc.
1875 Wellsona Road
Paso Robles, CA 93446
(805) 467-1041

Biological Resources Legend

	Limits of 2006 Biological Surveys by Althouse and Meade, Inc.		Epithermal stream, centerline
	Agrestial habitat (~12.76 acres)		Channel wetlands—federal (~2.23 acres)
	Anthropogenic habitat (~22.78 acres)		Slope Wetlands – state (~0.25 acre)
	Annual grassland (~22.84 acres)		Reservoirs and detention basins (~0.79 acre)
	Coast live oak woodland (~1.29 acres)		Tagged oak trees
	Mixed woodland (~5.39 acres)		Willow Canopy
	Obispo Indian Paritruush (~1000 individuals in 2006)		Canopy
	Ruderal habitat (~20.95 acres)		

Biological resources map prepared by Althouse and Meade, Inc.



APPENDIX B – Figures

- **Figure 1. Location Map**
- **Figure 2. USGS Topographic Map**
- **Figure 3. Soils Map**
- **Figure 4. Aerial Photo**

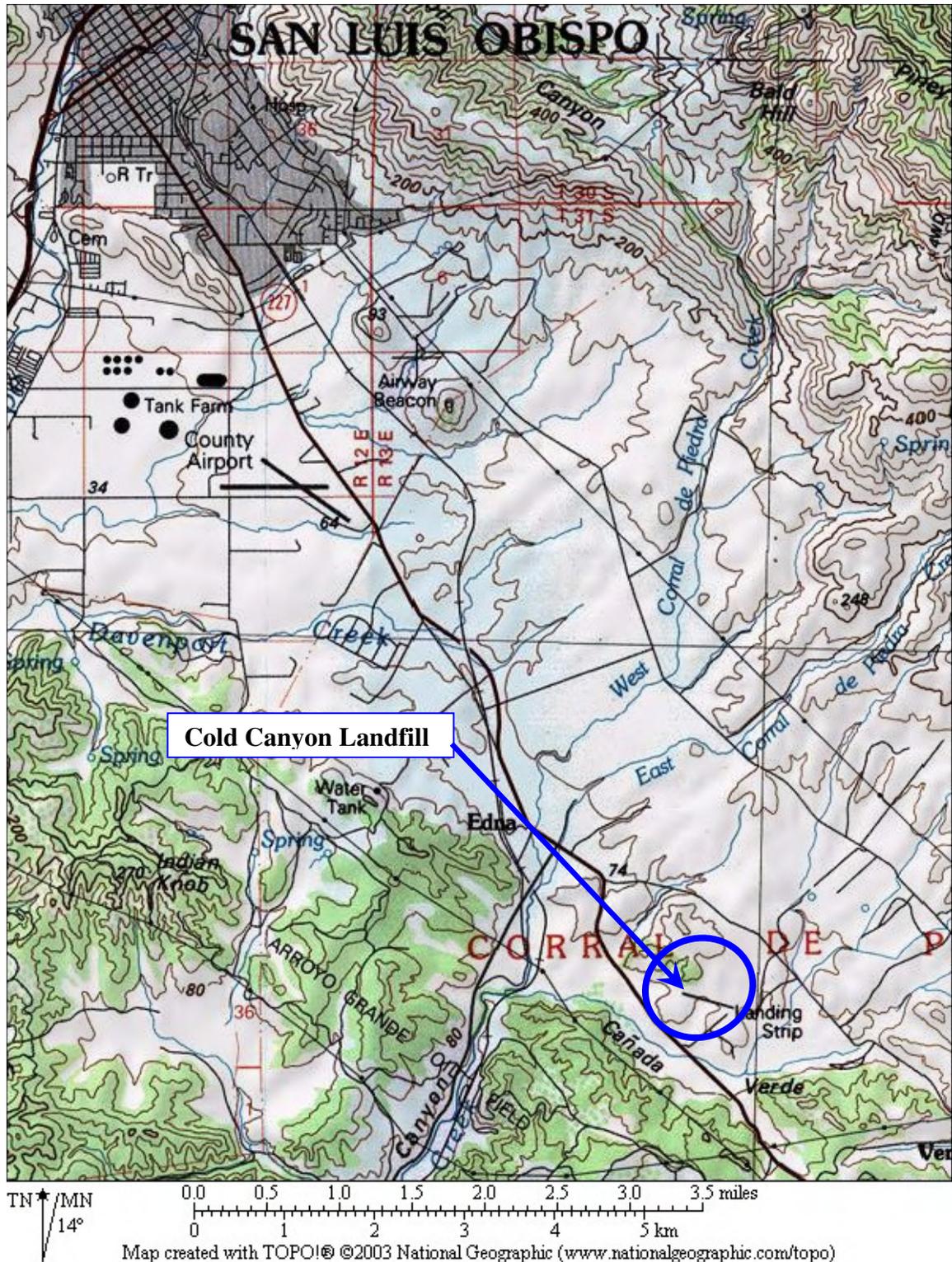


FIGURE 1. LOCATION MAP. The subject property is located at Cold Canyon Landfill, approximately seven miles south of San Luis Obispo on Carpenter Canyon Road, in San Luis Obispo County, California. The property is within the Arroyo Grande NE USGS 7.5 minute quadrangle.

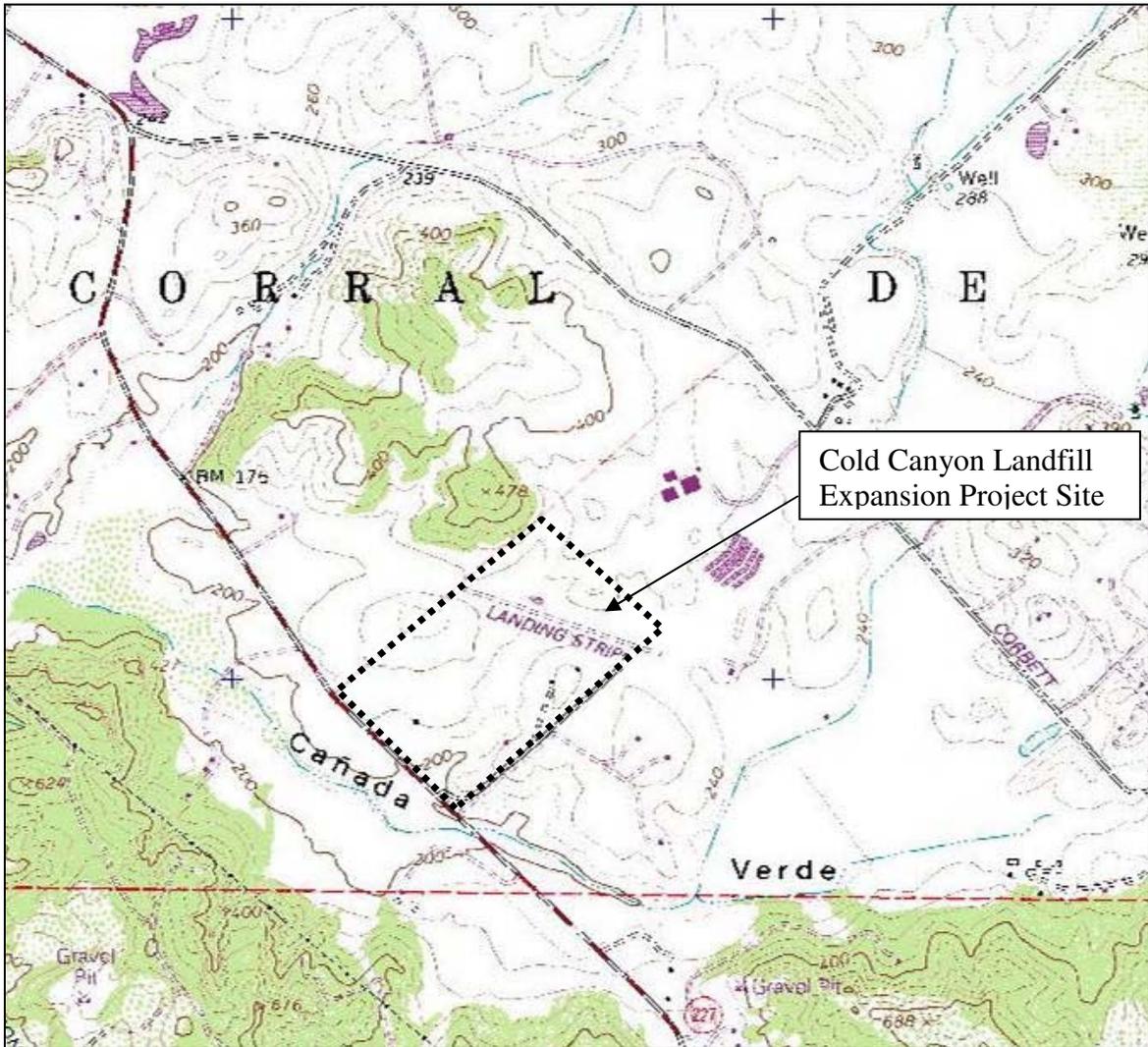


FIGURE 2. USGS TOPOGRAPHIC MAP. The subject property (APNs 044-261-011, -047, and -048) is situated on the east side of Carpenter Canyon Road, southeast of the existing active landfill. Approximate property boundaries are outlined above.

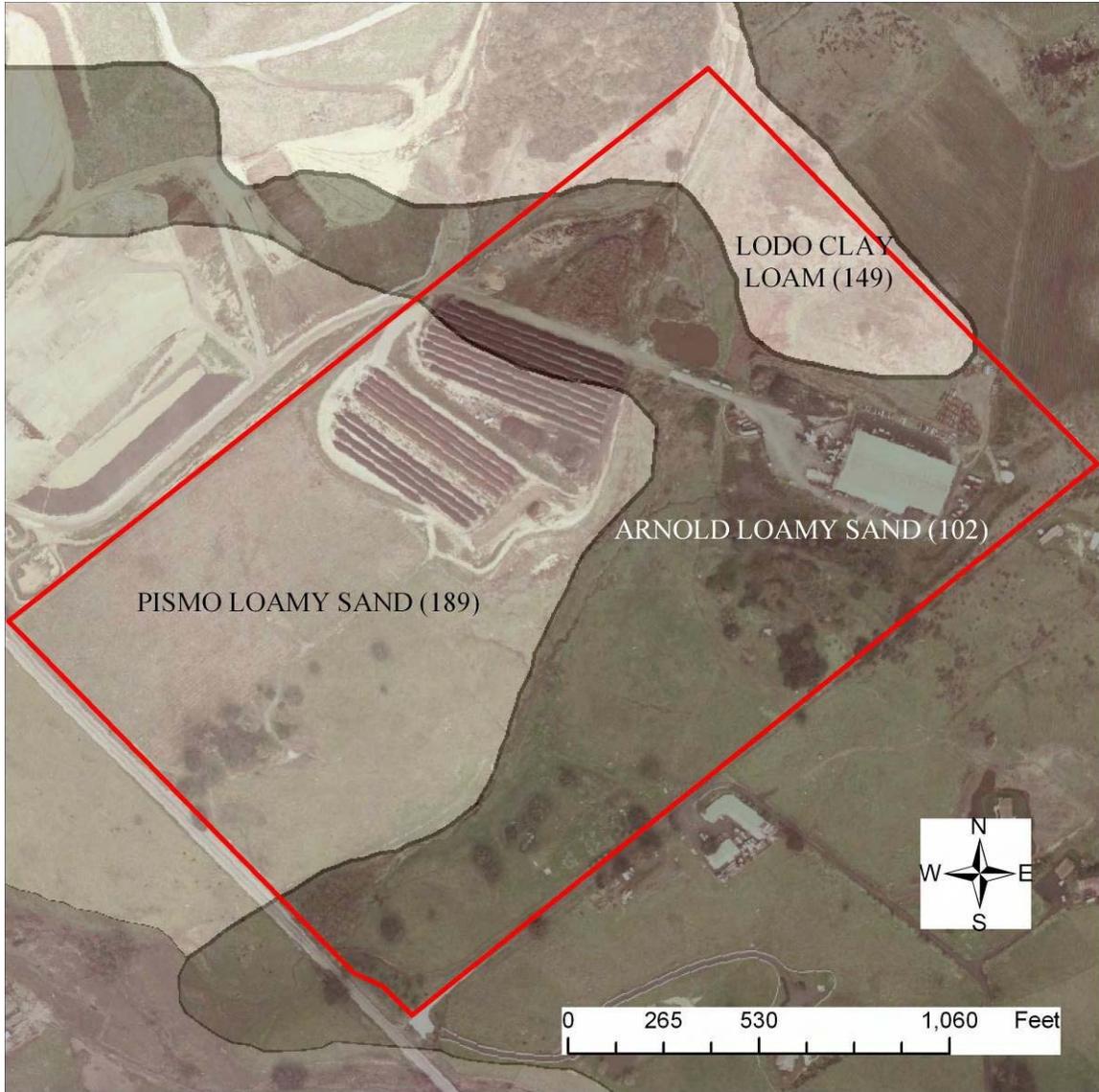


FIGURE 3. SOILS MAP. The approximate property boundaries of the subject property are outlined above. Map units are from the USDA Soil Survey of the San Luis Obispo County Coastal Part (1984). Three map units, Pismo loamy sand, 9 to 30 percent slopes (#189); Arnold loamy sand, 5 to 15 percent slopes (#102); and Lodo clay loam, 30 to 50 percent slopes (#149) are delineated on the property. The base layer of this map is a 2006 aerial photo by the NRCS.



FIGURE 4 . AERIAL PHOTO. The approximate boundaries of the proposed expansion property are outlined above. Aerial photo by Golden State Aerial Surveys, flight date January 3, 2006.

APPENDIX C – Photos



Photo 1. Agrestal habitat on the property consisted of an abandoned vineyard. Grape vines (*Vitis vinifera*) were still alive during initial site surveys in 2006. Between rows of vines, common weeds such as prickly lettuce, black mustard, and ripgut brome were dominant. Grape vines were removed in early 2007.



Photo 2. Obispo Indian paintbrush was observed in bloom on May 15, 2006 in grazed annual grassland, along the perimeters of the abandoned vineyard, and along unpaved roads. Vegetation was less dense in these areas, and weed competition was less vigorous than in other areas of the property.



Photo 3. Closeup photo of Obispo Indian paintbrush along margin of vineyard.



Photo 4. Annual grassland occurs on moderately sloped hills on the subject site. Although non-native annual species are dominant, native bunchgrass and rushes, such as *Nassella cernua* and *Juncus tenuis*, are also present. Some individual coast live oaks are scattered across grassland onsite.

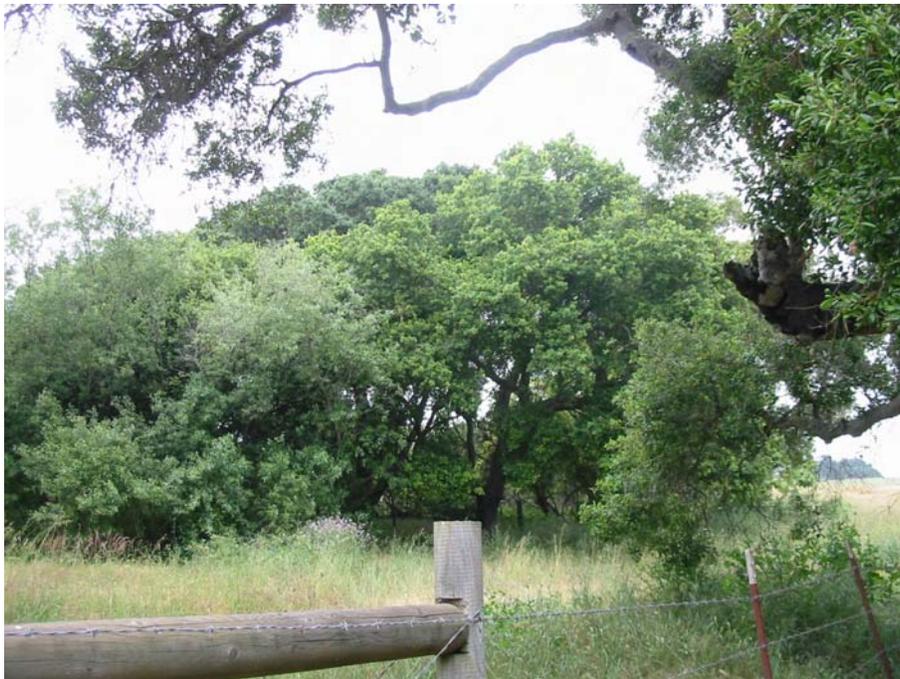


Photo 5. A small oak woodland is present in the southwest corner of the property. Over 35 mature oaks occupy 1.3 acres; arroyo willows and several ornamental and horticultural trees are also present.



Photo 6. Oaks occur with landscape trees, such as *Pittosporum undulatum*, in mixed woodland on a knoll south of the existing sort facility. Old abandoned structures are scattered among the trees. This area would not be removed by the proposed landfill expansion.



Photo 7. Weed-choked northeastern portion of property. This ruderal habitat is dominated by common weeds, including Italian thistle (*Carduus pycnocephalus*), wild radish (*Raphanus sativus*), black mustard (*Brassica nigra*), and prickly lettuce (*Lactuca serriola*). Photo taken July 31, 2006.



Photo 8. Large coast live oak (tree # 9) in moderate condition, located east of the drainage. This tree is expected to remain intact.



Photo 9. Seasonal wetland in a swale that drains into an ephemeral stream on the property. The USACE verbally stated in 2007 that this wetland is under their jurisdiction.



Photo 10. Recently deposited sediment within the ephemeral drainage masks wetland soil conditions beneath willow canopy (near Highway 227). However, this area is a jurisdictional wetland, as verified by the Corps. Photo taken June 13, 2006.



Photo 11. Seasonal pools persist within the ephemeral drainage in wet years. This reach of the drainage includes jurisdictional wetlands of the U.S. Note emergent wetland vegetation along pool margins and lower banks. Photo taken May 15, 2006.



Photo 12. Arroyo willow riparian occurs in the floodplain of an ephemeral drainage on the property. Individual willows are also present near the drainage and seasonal wetlands. This photo was taken from a small oak woodland near Highway 227, facing southeast, in July 2006.



Photo 13. Existing reservoir within the drainage. This reservoir will remain in place.

APPENDIX D – Status codes

Status Codes

Element Ranking

NDDB Codes

Each plant is given a number based on its taxonomy and accession into the natural diversity database (NDDB).

Global Ranking

G1 = Less than 6 viable element occurrences (EO's), OR less than 1,000 individuals, OR less than 2,000 acres.

G2 = 6-20 EO's OR 1,000-3,000 individuals OR 2,000-10,000 acres.

G3 = 21-100 EO's OR 3,000-10,000 individuals OR 10,000-50,000 acres.

G4 = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.

G5= Population or stand demonstrably secure to ineradicable due to being commonly found in the world.

State Ranking

(Same as Global ranking, plus threat designation attached to the S-rank)

S1 = Less than 6 viable element occurrences (EO's), OR less than 1,000 individuals, OR less than 2,000 acres.

S1.1 = very threatened

S1.2 = threatened

S1.3 = no current threats known

S2 = 6-20 EO's OR 1,000-3,000 individuals OR 2,000-10,000 acres.

S2.1 = very threatened

S2.2 = threatened

S2.3 = no current threats known

S3 = 21-100 EO's OR 3,000-10,000 individuals OR 10,000-50,000 acres.

S3.1 = very threatened

S3.2 = threatened

S3.3 = no current threats known

S4 = Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat. NO THREAT RANK.

S5= Population or stand demonstrably secure to ineradicable in California. NO THREAT RANK.

**California Native Plant Society's (CNPS) Lists
and R-E-D Code (Rarity, Endangerment, Distribution)**

The CNPS Ranking Working Group was formed to review the ranking system in the CNPS *Inventory of Rare and Endangered Plants (Inventory)* and discuss needed modifications. This group decided to discontinue the use of the R-E-D (Rarity-Endangerment-Distribution) Code and to instead convey this information in a clearer way by modifying the CNPS List and including other information in the *Inventory*. This decision and the associated modifications were approved by the CNPS Board of Directors at their August 2005 meeting.

A new Threat Code extension has been added following the CNPS List (e.g. 1B.1, 2.2 etc.). This extension replaces the E (Endangerment) value from the R-E-D Code. The main difference is that the number coding is now reversed to reduce confusion and represent this information in parallel with the threat rankings that the California Natural Diversity Database (CNDDB) uses. Therefore, the logic is reversed so that the lower the number, the higher the corresponding threat level.

CNPS Lists

- 1A = Presumed extinct in California.
- 1B = Rare or Endangered in California and elsewhere.
- 2 = Rare or Endangered in California, more common elsewhere.
- 3 = Plants for which we need more information (Review list).
- 4 = Plants of limited distribution (Watch list).

New Threat Code extensions and their meanings:

- .1 - Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- .2 – Fairly endangered in California (20-80% occurrences threatened)
- .3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

APPENDIX E – CNDDDB Reports

- **Obispo Indian Paintbrush** (*Castilleja densiflora* ssp. *obispoensis*)

California Native Species Field Survey Form

Mail to:
 Natural Diversity Database
 California Department of Fish and Game
 1807 13th Street, Suite 202
 Sacramento, CA 95814

For Office Use Only

Source Code _____ Quad Code _____
 Elm Code _____ Occ. No. _____
 EO Index No. _____ Map Index No. _____

Date of Field Work: 5 - 15 - 2006
month (mm) date (dd) year (yyyy)

Scientific Name: Castilleja densiflora ssp. obispoensis

Common Name: Obispo Indian Paintbrush

Species Found? _____
yes no If not, why?

Total No. Individuals 1,000 Subsequent Visit? yes no

Is this an existing NDDDB occurrence? yes no unk.
Yes, Occ. #

Collection? If yes: _____
Number Museum / Herbarium

Reporter: Meg Perry, Jason Dart

Address: Althouse and Meade, Inc.
1875 Wellsona Road Paso Robles, CA 93446

Email Address: meg@althouseandmeade.com

Phone: (805) 467-1041

Plant Information

Phenology: 0.00 100.00 0.00
% vegetative % flowering % fruiting

Animal Information

Age Structure: # adults # juveniles # unknown
 breeding wintering burrow site rookery nesting other

Location (please also attach or draw map on back)

East of Highway 227, Carpenter Canyon south of Edna, San Luis Obispo County

County: San Luis Obispo County Landowner / Mgr.: Cold Canyon Landfill, privately owned by Waste Connections, Inc.

Quad Name: Arroyo Grande NE Elevation: 250 ft

T _____ R _____ 1/4 of _____ 1/4 of Section _____ T _____ R _____ 1/4 of _____ 1/4 of Section _____

UTM: Zone: _____ (10, 11) Datum: NAD27 (NAD83, NAD27, WG584, other)

Source: USGS 7.5' map (GPS, map & type, etc.) Point Accuracy: _____ Meters

UTM Coordinates N35° 11' 0.7" / W120° 35' 32.6"

Habitat Description (plant communities, dominants, associates, substrates/soils, aspects/slope)

Over 1000 Obispo Indian paintbrush plants were observed in grazed annual grassland and an abandoned vineyard adjacent to the Cold Canyon Landfill, adjacent to Carpenter Canyon Road (Highway 227) near Patchett Road (south of the community of Edna, San Luis Obispo County). Associates include Ambrosia psilostachya, Ehrharta calycina, Erodium botrys, Briza minor, and Lotus corniculatus.

Other rare species? None observed.

Site Information Overall site quality: Excellent Good Fair Poor

Current / surrounding land use: Abandoned vineyard and pasture with adjacent active landfill. Single family residences and agriculture in vicinity.

Visible disturbances / possible threats: Grading and soil excavation, expansion of landfill, invasive non-native species (Veldt grass).

Comments: Plants were in full bloom during site visits through May. A voucher specimen was collected and is in preparation for deposit at the Hoover Herbarium at Cal Poly San Luis Obispo.

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): _____
- Compared with specimen housed at: _____
- Compared with photo / drawing in: _____
- By another person (name): _____
- Other: Previous experience with the species

Photographs: (check one or more)

- | | | |
|--------------------|--------------------------|-------------------------------------|
| | Slide | Print |
| Plant / animal | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Habitat | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Diagnostic feature | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
- May we obtain duplicates at our expense? yes no

APPENDIX F – Tree Inventory

Oak Tree Inventory

Cold Canyon Expansion Property

Methods

In 2006, Althouse and Meade, Inc. biologists tagged coast live oak trees over five inches dbh (diameter at breast height) that occurred within 50 feet of the proposed project. An inventory of trunk diameter, approximate height and width, health, aesthetic, and habitat value was conducted. Nests observed in each tree, if any, were noted. Tree ratings were assessed visually, based on general appearance and habitat value. Ratings are assigned as letter grades on a scale from A to F. An A is reserved for trees with particularly good health, good structure, few or no broken and dead limbs, good appearance, and/or high habitat value; an F represents a recently dead tree that is still standing and provides some habitat value. Diameter of trunk(s) was measured with a tree diameter tape at 4.5 feet above the ground. Height and width were estimated visually. Oaks were tagged with aluminum tags except where adverse conditions, such as substantial quantities of poison oak, prevented reasonable access to trunks. Where tagging was not feasible, trees were identified relative to adjacent tagged trees and the lack of physical tags was noted. Trees within 25 feet of the project area were surveyed by a licensed land surveyor. Oaks well outside the project area were not surveyed. Two maps included in this document show locations of the tagged trees and the locations of predicted tree impacts and removals.

Results

Results of the oak tree inventory are presented below (see tables 1–3). Over eighty-five coast live oaks over five inches dbh in poor to good condition are present on the property. These trees occur in oak woodland, disturbed mixed woodland, and as individual trees in open savanna. Coast live oak seedlings, saplings, and young trees less than 5 inches dbh are also present on the property, although they were not inventoried and do not occur in dense groups on site.

Thirty-eight of these oaks are grouped together in a 1.3 acre patch of oak woodland near the western corner of the property, adjacent to an abandoned vineyard. These trees average 16 inches diameter at breast height, and range from 6 to 73 inches sum dbh (that is, dbh of all main trunks added together) with a mean sum dbh of 25 inches. Coast live oak woodland occupies approximately 1.3 acres on the property.

An approximately 5.4 acre knoll adjacent to the existing sort facility supports 31 coast live oaks interspersed with many landscape trees and shrubs, as well as old buildings, foundations, and rubble. Some of the oaks in this mixed woodland area are very large trees over 50 inches dbh. Many of the coast live oaks in this area have multiple large trunks. Mixed woodland on the subject site is not dominated by coast live oaks; instead, abandoned ornamental trees and shrubs are intermixed with mature coast live oaks.

In open habitats, 16 individual oaks scattered across hillsides and along the ephemeral drainage onsite are surrounded by grassland and/or ruderal vegetation. Many of these isolated trees have large holes in the trunks and significant ground squirrel burrowing around the roots. The health of isolated trees on the property is generally poorer than health of trees occurring in woodland habitats.

TABLE 1. Results of an oak tree inventory conducted in 2006 for the proposed landfill expansion property. Diameter in breast height (DBH) was measured with a tree diameter measuring tape at a height of 4.5 feet above the ground.

Tag #	Species	# of Trunks	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4+ (in.)	Height (ft)	Width (ft)	Rating	Location	Impact or Remove?	Nests/ Cavities	Notes
1	<i>Quercus agrifolia</i>	2	36	35			50	60	C	South corner	Impact	Cavities	Wood rat nest
2	<i>Quercus agrifolia</i>	1	33				40	35	B-	South corner		Cavities	Stunted, Ground squirrels
3	<i>Quercus agrifolia</i>	1	23				12	22	D-	South corner		Few Cavities	3 main branches wood rat or other rodent
4	<i>Quercus agrifolia</i>	1	68				70	75	C-	South corner	Impact	Many Cavities	
5	<i>Quercus agrifolia</i>	1	48				55	70	C-	South corner	Impact	Wood Pecker holes, Cavities	
6	<i>Quercus agrifolia</i>	1	45				45	55	D	South corner	Impact	Cavities	
7	<i>Quercus agrifolia</i>	2	38	21			18	30	D-	South corner		Cavities	1 trunk healthy, one trunk poor
8	<i>Quercus agrifolia</i>	1	39				40	60	D	South corner	Impact	Cavities	lots of dead wood
9	<i>Quercus agrifolia</i>	1	51				40	45	D	South corner		Cavities	twisted together old tree house
10	<i>Quercus agrifolia</i>	1	47				35	45	D	South corner	Remove	Few Cavities	leans south
11	<i>Quercus agrifolia</i>	6	20	17	16	16	40	60	B+	South of creek, Patchett Rd.	Impact		Healthy

Tag #	Species	# of Trunks	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4+ (in.)	Height (ft)	Width (ft)	Rating	Location	Impact or Remove?	Nests/ Cavities	Notes
12	<i>Quercus agrifolia</i>	3	6.5	5	4		16	18	B	South of creek, Patchett Rd.			3 main trunks
13	<i>Quercus agrifolia</i>	1	43				35	65	D-	South of creek, Northeast corner	Remove	Wood rat nest, Cavities	under canopy leans south onto ground
14	<i>Quercus agrifolia</i>	1	34				30	40	B	Northeast corner	Remove		north east canopy cover
15	<i>Quercus agrifolia</i>	1	11				35	40	C-	Northeast corner			broken branches
16	<i>Quercus agrifolia</i>	2	16	12			35	30	C-	Northeast corner			leans south west
17	<i>Quercus agrifolia</i>	2	17	10			35	40	B-	Northeast corner			slightly leans w
18	<i>Quercus agrifolia</i>	1	18				25	25	B-	Northeast corner			
19	<i>Quercus agrifolia</i>	1	65				60	80	C	Northeast corner		Cavities	some cavities healthy, but with hollow wood
20	<i>Quercus agrifolia</i>	1	22				20	50	D	Northeast corner			strong lean east
21	<i>Quercus agrifolia</i>	1	25				45	45	C	Northeast corner			old nest
22	<i>Quercus agrifolia</i>	2	12	8			25	30	D-	Northeast corner			strong lean east
23	<i>Quercus agrifolia</i>	1	22				50	50	C	Northeast corner			leans east
24	<i>Quercus agrifolia</i>	1	17				50	50	C	Northeast corner			leans east

Tag #	Species	# of Trunks	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4+ (in.)	Height (ft)	Width (ft)	Rating	Location	Impact or Remove?	Nests/ Cavities	Notes
25	<i>Quercus agrifolia</i>	1	46				60	75	B	Northeast corner		Cavities, splits at 5 feet	
26	<i>Quercus agrifolia</i>	1	14				45	50	C	Northeast corner			leans east
27	<i>Quercus agrifolia</i>	1	29				55	75	B	Northeast corner			
28	<i>Quercus agrifolia</i>	1	29				45	45	B-	Northeast corner			shaded sparse on side
29	<i>Quercus agrifolia</i>	2	22	13			45	45	C	Northeast corner			vigorous, but dead wood, broken branch
30	<i>Quercus agrifolia</i>	1	8				15	16	A	Northeast corner			healthy young tree
31	<i>Quercus agrifolia</i>	1	52				70	60	A-	Northeast corner			splits at dbh tree house
32	<i>Quercus agrifolia</i>	1	8				25	25	B-	Northeast corner			leans west
33	<i>Quercus agrifolia</i>	3	20	18	16		50	50	A-	Northeast corner			
34	<i>Quercus agrifolia</i>	1	9				15	25	A	Northeast corner			healthy
35	<i>Quercus agrifolia</i>	2	6	4			20	25	A-	Northeast corner			healthy
36	<i>Quercus agrifolia</i>	2	9	5			22	22	A-	Northeast corner			healthy
37	<i>Quercus agrifolia</i>	2	7	3			25	20	A-	Northeast corner			healthy
38	<i>Quercus agrifolia</i>	1	16				35	45	A-	Northeast corner		Small bird nest	healthy

Tag #	Species	# of Trunks	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4+ (in.)	Height (ft)	Width (ft)	Rating	Location	Impact or Remove?	Nests/ Cavities	Notes
39	<i>Quercus agrifolia</i>	1	20				40	40	B-	Northeast corner			
40	<i>Quercus agrifolia</i>	1	19				35	35	B-	Northeast corner			vigorous but dead wood
41	<i>Quercus agrifolia</i>	1	21				25	30	B-	Northeast corner			
42	<i>Quercus agrifolia</i>	2	10	8			25	20	B-	Northeast corner			sparse in shade
43	<i>Quercus agrifolia</i>	2	12	10			20	35	C	Northeast corner			shaded by pine
44	<i>Quercus agrifolia</i>	1	26				20	30	D	Single tree on hill, northeast corner	Remove	Cavities	understory weedy
45	<i>Quercus agrifolia</i>	4	19	18	15	14	45	90	A-	Single on hill, north side of pond		small hollows, Cavities	Roosting barn owl
46	<i>Quercus agrifolia</i>	1	30				25	50	C	Southwest corner	Remove		leans south west
47	<i>Quercus agrifolia</i>	1	29				15	18	D-	Southwest corner	Remove		broken, north east sprout from break
48	<i>Quercus agrifolia</i>	1	40				55	55	B-	Southwest corner	Remove	Cavities	large mature tree
49	<i>Quercus agrifolia</i>	1	38				30	45	C	South corner @ Hwy. 227		Cavities	thin canopy
50	<i>Quercus agrifolia</i>	1	23				45	30	A	Near vineyard	Probably Remove		
51	<i>Quercus agrifolia</i>	1	15				25	25	C	Near vineyard	Probably remove		leans north east

Tag #	Species	# of Trunks	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4+ (in.)	Height (ft)	Width (ft)	Rating	Location	Impact or Remove?	Nests/ Cavities	Notes
52	<i>Quercus agrifolia</i>	1	40				35	35	C	Near vineyard	Probably remove	Wood pecker holes, cavities	some hollows
53	<i>Quercus agrifolia</i>	2	16	14			35	35	B-	Near vineyard	Remove		
54	<i>Quercus agrifolia</i>	1	56				55	70	C-	Near vineyard	Remove	Cavities	shelf fungus at base
55	<i>Quercus agrifolia</i>	1	37				50	65	A	Near vineyard	Remove		many saplings near by
56	<i>Quercus agrifolia</i>	1	26				60	50	B-	Near vineyard	Remove	barn owl roost	healthy with some dead wood
57	<i>Quercus agrifolia</i>	1	19				60	50	C	Near vineyard	Remove	old raptor nest	
58	<i>Quercus agrifolia</i>	1	16				55	30	D	Near vineyard	Remove		leans south east, grape vines in canopy
59	<i>Quercus agrifolia</i>	3	18	17	15		60	50	C	Near vineyard	Remove		near massive wood rat nest
60	<i>Quercus agrifolia</i>	2	15	9			60	40	D-	Near vineyard	Remove		two trunks growing together
61	<i>Quercus agrifolia</i>	1	8				18	15	B	Near vineyard	Remove		leans south
62	<i>Quercus agrifolia</i>	1	7				15	18	C-	Near vineyard	Remove		Strong lean east
63	<i>Quercus agrifolia</i>	1	6				20	12	A-	Near vineyard	Remove	large woodrat nest	

Tag #	Species	# of Trunks	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4+ (in.)	Height (ft)	Width (ft)	Rating	Location	Impact or Remove?	Nests/ Cavities	Notes
64	<i>Quercus agrifolia</i>	2	5	4			15	12	A-	Near vineyard	Remove		measured about 12 inches below split
65	<i>Quercus agrifolia</i>	1	6				18	15	A-	Near vineyard	Remove		
66	<i>Quercus agrifolia</i>	1	22				35	50	D-	Near vineyard	Remove	cavities	poor health tag not on tree wrapped in poison oak near trees 65, 67, 68, 69
67	<i>Quercus agrifolia</i>	1	19				50	50	B-	Near vineyard	Remove		
68	<i>Quercus agrifolia</i>	2	18	16			60	55	B-	Near vineyard	Remove	great horned owl roost	
69	<i>Quercus agrifolia</i>	4	30	26	16	12	70	50	C-	Near vineyard	Remove	songbird nest	
70	<i>Quercus agrifolia</i>	1	6				15	16	B	Near vineyard	Remove	songbird nest	
71	<i>Quercus agrifolia</i>	2	9	4			18	12	C-	Near vineyard	Remove	songbird nest	
72	<i>Quercus agrifolia</i>	1	10				20	25	C-	Near vineyard	Remove	songbird nest	
73	<i>Quercus agrifolia</i>	1	6				22	20	C-	Near vineyard	Remove		leans south west tag not on tree no access
74	<i>Quercus agrifolia</i>	4	25	19	18	11	30	35	B-	Near vineyard	Remove	songbird nest	one trunk lies on ground for a few feet

Tag #	Species	# of Trunks	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4+ (in.)	Height (ft)	Width (ft)	Rating	Location	Impact or Remove?	Nests/ Cavities	Notes
75	<i>Quercus agrifolia</i>	1	6				18	15	B-	Near vineyard	Remove		
76	<i>Quercus agrifolia</i>	1	6				20	16	B-	Near vineyard	Remove		closed canopy
77	<i>Quercus agrifolia</i>	2	6	5			22	18	A-	Near vineyard	Remove		closed canopy
78	<i>Quercus agrifolia</i>	2	8	4			22	25	A-	Near vineyard	Remove	songbird nest	isolated tree
79	<i>Quercus agrifolia</i>	3	20	19	18		30	35	B-	Near vineyard	Remove		isolated tree
80	<i>Quercus agrifolia</i>	2	12	9			28	20	B-	Near vineyard	Remove		near monterey cypress
81	<i>Quercus agrifolia</i>	1	22				35	35	B-	Near vineyard	Remove		
82	<i>Quercus agrifolia</i>	1	20				40	40	B-	South west	Remove		tag not on tree - poison oak everywhere leans west
83	<i>Quercus agrifolia</i>	1	34				30	55	C	South west	Remove	cavities	twisted trunk, short
84	<i>Quercus agrifolia</i>	1	31				20	30	D	South west	Remove	cavities	stunted/broken
85	<i>Quercus agrifolia</i>	2	24	14			40	60	A-	Near vineyard @ Hwy. 227	Probably remove		

TABLE 2. PREDICTED TREE REMOVALS. Between 39 and 43 trees will be removed by the proposed landfill expansion and support facilities. Four of these trees, #50–52 and #85, may be impacted but not removed, dependant on final plans for widening Highway 227.

Tag #	Species	# of Trunks	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4 (in.)	Height (ft)	Width (ft)	Rating	Location	Cause of Removal	Nests/ Cavities	Notes
10	<i>Quercus agrifolia</i>	1	47				35	45	D	South Corner	Soil stockpile	Few Cavities	leans south
13	<i>Quercus agrifolia</i>	1	43				35	65	D-	South of Creek, North east corner	Soil stockpile	Wood rat nest, Cavities	under canopy leans south onto ground
14	<i>Quercus agrifolia</i>	1	34				30	40	B	North east corner	Soil stockpile		north east canopy cover
44	<i>Quercus agrifolia</i>	1	26				20	30	D	Single on hill North east corner	Expand resource recovery park	Cavities	understory weedy
46	<i>Quercus agrifolia</i>	1	30				25	50	C	South west corner	Landfill expansion		leans south west
47	<i>Quercus agrifolia</i>	1	29				15	18	D-	South west corner	Landfill expansion		broken, north east sprout from break
48	<i>Quercus agrifolia</i>	1	40				55	55	B-	South west corner	Access road	Cavities	large mature tree
50	<i>Quercus agrifolia</i>	1	23				45	30	A-	North of creek near vineyard	Hwy. 227 widening		
51	<i>Quercus agrifolia</i>	1	15				25	25	C	near vineyard	Hwy. 227 widening		leans north east
52	<i>Quercus agrifolia</i>	1	40				35	35	C	near vineyard	Hwy. 227 widening	Wood-pecker holes, cavities	some hollows

53	<i>Quercus agrifolia</i>	2	16	14			35	35	B-	near vineyard	Landfill expansion		
54	<i>Quercus agrifolia</i>	1	56				55	70	C-	near vineyard	Landfill expansion	Cavities	shelf fungus at base
55	<i>Quercus agrifolia</i>	1	37				50	65	A	near vineyard	Landfill expansion		many saplings adjacent
56	<i>Quercus agrifolia</i>	1	26				60	50	B-	near vineyard	Landfill expansion	barn owl roost	healthy with some dead wood
57	<i>Quercus agrifolia</i>	1	19				60	50	C	near vineyard	Landfill expansion	old raptor nest	
58	<i>Quercus agrifolia</i>	1	16				55	30	D	near vineyard	Landfill expansion		leans south east, grape vines in canopy
59	<i>Quercus agrifolia</i>	3	18	17	15		60	50	C-	near vineyard	Landfill expansion		near massive wood rat nest
60	<i>Quercus agrifolia</i>	2	15	9			60	40	D-	near vineyard	Landfill expansion		two trunks growing together
61	<i>Quercus agrifolia</i>	1	8				18	15	B	near vineyard	Landfill expansion		leans south
62	<i>Quercus agrifolia</i>	1	7				15	18	C	near vineyard	Landfill expansion		Strong lean east
63	<i>Quercus agrifolia</i>	1	6				20	12	A-	near vineyard	Landfill expansion	near large wood rat nest	
64	<i>Quercus agrifolia</i>	2	5	4			15	12	A-	near vineyard	Landfill expansion		about 12 inches below split
65	<i>Quercus agrifolia</i>	1	6				18	15	A-	near vineyard	Landfill expansion		
66	<i>Quercus agrifolia</i>	1	22				35	50	D-	near vineyard	Landfill expansion	cavities	poor health tag not on tree wrapped in poison oak near trees 65, 67, 68, 69
67	<i>Quercus agrifolia</i>	1	19				50	50	B-	near vineyard	Landfill expansion		

68	<i>Quercus agrifolia</i>	2	18	16				60	55	B-	near vineyard	Landfill expansion	great horned owl roost	
69	<i>Quercus agrifolia</i>	4	30	26	16	12	70	50	C-	near vineyard	Landfill expansion	songbird nest		
70	<i>Quercus agrifolia</i>	1	6				15	16	B	near vineyard	Landfill expansion	songbird nest		
71	<i>Quercus agrifolia</i>	2	9	4			18	12	C-	near vineyard	Landfill expansion	songbird nest		
72	<i>Quercus agrifolia</i>	1	10				20	25	C-	near vineyard	Landfill expansion	songbird nest		
73	<i>Quercus agrifolia</i>	1	6				22	20	C-	near vineyard	Landfill expansion		leans south west tag not on tree no access	
74	<i>Quercus agrifolia</i>	4	25	19	18	11	30	35	B-	near vineyard	Landfill expansion	songbird nest	one trunk lies on ground for a few feet	
75	<i>Quercus agrifolia</i>	1	6				18	15	B-	near vineyard	Landfill expansion			
76	<i>Quercus agrifolia</i>	1	6				20	16	B-	near vineyard	Landfill expansion		closed canopy	
77	<i>Quercus agrifolia</i>	2	6	5			22	18	A-	near vineyard	Landfill expansion		closed canopy	
78	<i>Quercus agrifolia</i>	2	8	4			22	25	A-	near vineyard	Landfill expansion	songbird nest	isolated tree	
79	<i>Quercus agrifolia</i>	3	20	19	18		30	35	B-	near vineyard	Landfill expansion		isolated tree	
80	<i>Quercus agrifolia</i>	2	12	9			28	20	B-	near vineyard	Landfill expansion		near planted cypress tree	
81	<i>Quercus agrifolia</i>	1	22				35	35	B-	near vineyard	Landfill expansion			
82	<i>Quercus agrifolia</i>	1	20				40	40	B-	South west	Landfill expansion		tag not on tree - poison oak.	

83	<i>Quercus agrifolia</i>	1	34				30	55	C	South west	Landfill expansion	cavities	twisted trunk, short
84	<i>Quercus agrifolia</i>	1	31				20	30	D	South west	Landfill expansion	cavities	stunted/broken
85	<i>Quercus agrifolia</i>	2	24	14			40	60	A-	along 227 near vineyard	Hwy. 227 widening		

TABLE 3. TREES IMPACTED BUT NOT REMOVED. An estimated seven oak trees will be impacted but not removed. The following table lists these trees in order of tag number.

Tag #	Species	# of Trunks	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4+ (in.)	Ht. (ft)	Width (ft)	Health %	Location	Cause of Impact	Nests/ Cavities	Notes
1	<i>Quercus agrifolia</i>	2	36	35			50	60	C	South corner	access road	Cavities	Wood rat nest
4	<i>Quercus agrifolia</i>	1	68				70	75	C-	South Corner	access road	Many Cavities	
5	<i>Quercus agrifolia</i>	1	48				55	70	C-	South Corner	access road	Wood-pecker holes, Cavities	
6	<i>Quercus agrifolia</i>	1	45				45	55	D	South Corner	access road	Cavities	
8	<i>Quercus agrifolia</i>	1	39				40	60	D	South Corner	access road	Cavities	lots of dead wood
9	<i>Quercus agrifolia</i>	1	51				40	45	D	South Corner	access road	Cavities	limbs twisted together; old tree house
11	<i>Quercus agrifolia</i>	6	20	17	16	16, 16, 15	40	60	B	South of Creek, Patchett Rd.	soil stockpile		Healthy

Tree Map

for

88.27 acres at Cold Canyon Landfill
Owned by Corral de Piedra Land Company, Inc.

APNs 044-261-011, -047, and -048
Carpenter Canyon Road
San Luis Obispo County, California

Trees tagged by Althouse and Meade, Inc.
in July and August, 2006.
Surveyed by Fleming Surveys, Inc.

Final Map prepared by Althouse and Meade, Inc.
September 6, 2006



Althouse and Meade, Inc.
1875 Wellsona Road
Paso Robles, CA 93446
(805) 467-1041

Map Notes

A total of 85 coast live oak (*Quercus agrifolia*) trees were tagged on the project site. Non-native trees and planted trees were not tagged.

Only coast live oak trees occurring within 50 feet of the proposed project were surveyed by a licensed land surveyor (Fleming Surveys). Other tagged trees are not included on this map.

Locations, tree numbers, and diameter at breast height (dbh) are indicated on this map. For example: #2/ 33in indicates tree number two, which is 33 inches dbh. For trees with more than one trunk, the number of trunks is indicated and dbh is given for the largest trunk(s). #7/ (2) 38, 21in indicates tree number 7, which has two trunks, 38 and 21 inches in diameter.

 = trunk location of coast live oak tree



Tree Impact Map

for

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Owned by
Corral de Piedra Land Company Inc.

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Carpenter Canyon Road
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Trees tagged by Althouse and Meade, Inc.
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A total of 85 coast live oak (*Quercus agrifolia*) trees were tagged on the project site. Non-native trees and planted trees were not tagged.

Only coast live oak trees occurring within 25 feet of the proposed project were surveyed by a licensed land surveyor (Fleming Surveys). Other tagged trees are not included on this map.

Trees that would be removed by the project are shown with a red 'x' over the trunk.

Trees that would be impacted but not removed are shown with a magenta slash (/) over the trunk.

 = trunk location of coast live oak tree

 = coast live oak tree to be removed

 = coast live oak tree to be impacted

