
*Initial Study/
Proposed Mitigated Negative Declaration*

**Line 131 Pipeline Replacement at Marsh
Creek**

Prepared for
**Central Valley Regional Water
Quality Control Board**

11020 Sun Center Drive #200
Rancho Cordova, CA 95670

March 2008

Prepared by
CH2MHILL
33 New Montgomery Street, Suite 2000
San Francisco, CA 94105

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|--|--|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities/Service Systems | <input checked="" type="checkbox"/> Mandatory Findings of Significance | |

DETERMINATION:

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature:

28 March 2008

Date:

CEQA Initial Study

1. **Project Title:** Line 131 Pipeline Replacement at Marsh Creek
2. **Lead Agency:** Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670
3. **Contact Person:** Greg Vaughn, P.E.
(916) 464-4742
4. **Project Location:** Southwest of the City of Brentwood, Contra Costa County
5. **Project Sponsor:** Pacific Gas and Electric Company
6. **General Plan Designation:** Southern bore site is designated as Parkland and the northern bore site as Mixed Use in the City of Brentwood General Plan.
7. **Zoning:** Southern bore site is zoned as Parkland and the northern bore site as Mixed Use by the City of Brentwood.
8. **Description of Project**

Project Background

Pacific Gas and Electric Company (PG&E) plans to replace approximately 1,400 feet of its 24-inch natural gas pipeline Line 131, located in Contra Costa County approximately 4 miles southwest of downtown Brentwood (Figure 1). The purpose of the project is to comply with the California Public Utilities Commission's General Order 112E and the Department of Transportation's Federal Regulation CFR 49 Part 192 Safety Regulations. Due to recent and planned developments in the area, the location of this pipeline segment will be changing from class 1 to class 3. Therefore, this pipeline segment will need to be replaced with a pipe with higher safety margins to meet the regulations. This pipeline originates at PG&E's Brentwood station approximately two miles to the north of the project site.

Project Description

The proposed project is the replacement of approximately 1,400 feet of the existing Line 131 natural gas pipeline. The project has been designed to minimize ground disturbance, for example by using horizontal directional drilling (HDD) instead of using an open cut installation method to cross Marsh Creek. Construction of the project is described below. No changes in operation of Line 131 are planned.

To install the new pipeline segment using HDD, two primary construction locations will be used, one on a grazing field approximately 600 feet southwest of the John Marsh house (referred to as the "southern bore site") and one within the disturbed residential construction site to the north of Marsh Creek (referred to as the "northern bore site"; see Figure 2). Within the southern bore site, the drilling contractor will excavate a pit approximately 12 feet wide by 12 feet long by 8 feet deep, or 144 ft² (0.003 acre) located primarily within and centered on PG&E's existing easement.

Excavated soils will be stockpiled adjacent to the pit. This pit will contain the drilling fluids throughout the HDD operation. The 12-foot width is the minimum pit size that can accommodate the boring rig, which will be located south of the pit along PG&E's easement (Figure 3).

Other equipment needed for the HDD operation will be located next to the pit in a staging area. The overall work area, with the staging and boring pit, will be roughly in the shape of a triangle approximately 160 feet by 160 feet by 200 feet, or 12,500 ft² (0.29 acre; see Figure 2). The staging area will be covered with steel plates or similar to protect the ground surface. This area will contain the drilling machine, a small crane, water truck, and an excavator. The drilling machine will be brought in on a semi and is self-leveling. In addition, the project will require 12 truckloads of support equipment including drill pipes, pumps, mud mixing equipment, and generators. Temporary fencing will be erected around the work area to protect grazing livestock that may be present on the ranch. The HDD will be completed parallel to the existing Line 131 pipe and within the existing PG&E easement (Figure 3). The length of the bore will be approximately 1,325 feet with a minimum of approximately 25 feet of clearance under the creek bed.

Boring equipment, trucks, and other equipment will be refueled onsite in the staging area. During boring operations, any groundwater encountered will be pumped out and stored in a tank for reuse for dust control and/or pasture irrigation. The drilling mud, which will be contained in the pit, will be filtered and processed on site during the bore operations to be reused to cool the cutting head, lubricate the bore piping, and stabilize the bore hole. Excess drilling mud will be stored in appropriate containers for hauling and off-site disposal in an appropriate location.

Once the pilot bore is complete, 1,325 feet of the new pipe will be laid out on the north side of Marsh Creek within the residential construction site. This existing, previously-graded site is currently being developed as part of the Vineyards housing development. The installation bore hole, construction office, materials, pipe layout, fabrication, testing, and parking will also be located within this development area (referred to as the northern bore site). The laid-out pipeline will then be pulled through the bore hole by the drilling machine on the south side of Marsh Creek. The new pipeline will be the same size (24 inches in diameter) as the old pipeline.

After the pipe is installed, the bore pit excavation in the southern bore site will be enlarged to approximately 16 feet wide by 20 feet long by 8 feet deep along PG&E's easement in order to complete the new pipeline. This excavation is labeled as "Bellhole A" on Figure 4. From this enlarged pit, a four-foot wide by 100-foot long trench will be excavated to install the remainder of the pipeline (Figure 4). A second pit, referred to as "Bellhole B," will be excavated to tie into the existing pipeline at the south end of the action area (Figure 4). This pit will be 16 feet wide and 36 feet long. The 16-foot width is needed to provide the required workspace on either side of the current and new pipelines. The two bellholes are needed for the field fabrication of the new angles and to tie into the existing line. The total area of excavation for the tie-in, including the original boring pit, is 1,296 square feet (0.03 acres). Excavated soils will be stockpiled adjacent to the excavated areas. Similarly, the new pipe will be tied into the existing pipe at the north end of the action area within the Vineyards housing development.

When the bored pipe is in place and the pit is to be used for tying the new pipe into the existing gas line, any groundwater encountered will be pumped out and stored in a tank for reuse for dust control and/or pasture irrigation. Best management practices (BMPs) will be implemented to protect soil and water quality during construction. BMPs will be described in the project Stormwater Pollution Protection Plan (SWPPP), and may include construction during the dry

season, silt fences or straw wattles on the downstream border of the construction area, stockpiling soils at least 100 feet from drainages, providing secondary containment for hazardous materials stored within 100 feet of a drainage, and installing hydroseed and straw mulch after construction is completed. If needed, the boring pit can be lined.

The old pipeline will be left in place, except for the exposed portion of pipe spanning Marsh Creek (see Figure 5). To remove the pipe that is currently spanning Marsh Creek, a crew will set up equipment, including two welding trucks containing the welding fuel, on the south side of the creek outside of any riparian vegetation. This staging area will be approximately 30 feet by 60 feet, or 1,800 ft² (0.04 acres). Welders will use hoses from the welding trucks on the south side of the creek to reach the north end of the pipe. A "Rough Terrain Crane" will be driven to the same area on the south side of the creek to remove the pipe after it is cut at each end by the welders. The crane will have low-pressure tires and large stabilizing pads to avoid damaging soils. No riparian vegetation or trees will be removed. After the pipe is lifted by the crane, it will be placed on a trailer at the pipe removal staging area and driven off the site. Following removal of the pipe section crossing Marsh Creek, minor hand digging around the remaining pipe will be done to cut the pipe just below ground level. The cut ends of the remaining abandoned pipe will be filled with grout that will be carried from the staging area by hand. After grouting, the ends of the pipe will be covered with soil. Workers will access the south end of the pipe from the staging area and the north side from the existing construction access in the residential development to the north. The pipe removal will be conducted during the dry season (July-October), when spawning fish would not be present in Marsh Creek. No equipment or work will take place on the channel floor.

Following construction, all equipment and materials will be removed and excavated areas will be graded smooth and seeded with appropriate vegetation. The remainder of the existing pipeline will be left in place.

Construction Access

Access to the north staging site will be from existing construction roads in the Vineyards development. Access to the southern bore site will be via the Contra Costa County Flood Control and Water Conservation District access along the Old Marsh Creek Road and then along the PG&E easement (Figure 2). Old Marsh Creek Road is paved; the access route then makes a sharp turn to the northwest along the PG&E easement, which is unpaved, towards the boring pit. The vegetation on this portion of the access route, approximately 750 feet long by 12 feet wide, or 9,000 ft² (0.21 acres), consists of California annual grasslands. Low grade pressure tires or similar will be used to reduce the impacts to the grasslands. Similarly, access from the southern boring pit to the pipe removal staging area, which crosses California annual grasslands, will be along the existing PG&E easement (Figure 2). This portion of the route is approximately 500 feet long by 12 feet wide or 6,000 ft² (0.14 acres). Low grade pressure tires or similar will also be used along this route to reduce the impacts to the grasslands. No grading or other improvements will be done along the PG&E easement.

Construction Schedule

Construction is expected to start in July 2008 and take approximately 4 to 5 months to complete, including site preparation, earthwork, pipe removal, and revegetation. The HDD activities, including earthwork, boring, and pipe installation, will take approximately two months.

Environmental Monitoring

Prior to start of construction, an archaeologist will survey the construction areas and remove/curate any surface artifacts. A biologist will perform pre-construction surveys to verify no endangered species are present in the work areas. During construction, qualified cultural and biological monitors will be present as appropriate to verify that measures to protect cultural and biological resources are being implemented. Work areas will be fenced to avoid injury to ranch animals. Gates will be closed during site ingress and egress to ensure livestock stay within the fenced ranch.

9. Surrounding Land Uses and Setting:

The southern bore site is located within City of Brentwood limits primarily on land owned by California State Parks. Immediately surrounding the primary project site (southern boring area, staging area, and access roads) are approximately four acres of ranch land containing active ranching facilities, occupied residences, and the historic John Marsh House (Figure 2). This area is bounded by Marsh Creek to the north, Marsh Creek Road to the east, and Marsh Creek Reservoir to the southwest (Figures 1 and 2). Just north of Marsh Creek is the Vineyards at Marsh Creek housing development, currently under construction. The northern bore site is located within the development on land that has been graded but will not have houses constructed in 2008. East of Marsh Creek Road are open space and agricultural lands.

10. Required Agency Approvals:

- The line crossing of Marsh Creek is subject to the jurisdiction of the US Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. It is expected that the project will be covered under USACE Nationwide Permit 12 (Utility Line Activities).
- The CVRWQCB must issue a water quality certification required under Section 401 of the Clean Water Act and is also serving as the lead agency under CEQA.
- The California Department of Fish and Game (CDFG) has issued an Operational Law letter for the project and no Streambed Alteration Agreement (SAA) under Section 1600 of the Fish and Game Code will be required for the project, provided the project is implemented as described in the SAA application.
- Activities affecting federally protected species are regulated by U.S. Fish and Wildlife Service (UFWFS) and National Marine Fisheries Service (NMFS) and will be addressed through Section 7 consultation by USACE during the permitting process. Activities affecting state-protected species are regulated by CDFG and will be addressed through the CEQA process.
- Federal activities affecting historic and cultural resources are regulated under Section 106 of the National Historic Preservation Act and will be addressed by USACE during its permitting process.
- A construction stormwater Notice of Intent will be filed with the State Water Resources Control Board and a Stormwater Pollution Prevention Plan prepared by the contractor.
- A Letter of Assurance has been negotiated and signed by PG&E and California State Parks, which owns the land on which PG&E's easement is located for a portion of the project. PG&E's existing easement allows sufficient access to complete the project, so no authorization from California State Parks is required.

- An encroachment permit will be obtained from the Contra Costa County Flood Control and Water Conservation District.

11. Relationship to Local Plans:

The project site was recently annexed into the City of Brentwood. Each city in California is required by State law to prepare and adopt a General Plan (California Government Code Section 65302). The primary function of the General Plan is to allow each city to consciously consider and shape its own future. The Brentwood General Plan sets forth the City's goals, objectives, and policies regarding future growth and development for a range of subject areas, including land use, circulation, housing, open space, conservation, safety, seismic safety, noise, and scenic highways.

The California State Parks is in the process of developing a Master Plan for the John Marsh State Historic Site. The relationship to this plan is discussed in Section 9 Land Use below.

12. References:

The following references were used in completing this Initial Study:

- Bay Area Air Quality Management District website. 2008. Ambient Air Quality Standards and Bay Area Attainment Status. http://www.baaqmd.gov/pln/air_quality/ambient_air_quality.htm. Accessed 29 January.
- CH2M HILL and Garcia & Associates. 2007. *Biological Resources Technical Report for the Line 131 Class Change at Marsh Creek*. Prepared for Pacific Gas & Electric Company. September.
- Jones & Stokes. 2006. *East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan*. Prepared for the East Contra Costa County Habitat Conservation Plan Association. October.
- Contra Costa County Public Works Department. 2005. Capital Road Improvement and Preservation Program: Fiscal Year 2005/6 to 2011/12.
- City of Brentwood. 2006, updated. *City of Brentwood General Plan*. January.
- _____. 2007, updated. City of Brentwood Municipal Code: 9.32.050 (prohibited special noise sources). October.
- Far Western Anthropological Research Group, Inc. 2007. *Summary of Archaeological Records Search, Native American Consultation, and Field Survey*. August 10.
- Garcia & Associates. 2007. *Preliminary Determination of Waters of the United States for the Pacific Gas & Electric Company's Line 131 Class Change at Marsh Creek, Contra Costa County*. Prepared for Pacific Gas & Electric Company. July.
- Pacific Gas & Electric (PG&E). 2007. PG&E Line 131 Project at Cowell Ranch/John Marsh State Historic Park - Letter of Assurance to California State Parks. October.
- RBF Consulting. 2003. *Draft Environmental Impact Report: The Vineyards at Marsh Creek and Annexation Sites*. Prepared for City of Brentwood. November.

13. List of Preparers:

This Initial Study for the Line 131 Pipeline Replacement at Marsh Creek Project was prepared by CH2M HILL staff, as follows:

Debra Crowe/CH2M HILL, Senior Biologist

Pierre Fidenci/Garcia & Associates, Wildlife Biologist

Andrea Gardner/CH2M HILL, Senior Planner

Mary Gerut/CH2M HILL, Associate Planner

Samantha Hillaire/Garcia & Associates, Botanist

Karin Lilienbecker/CH2M HILL, Planner

Cori Lu/CH2M HILL, Biologist

Jack Meyer/Far Western, Principal Geoarchaeologist

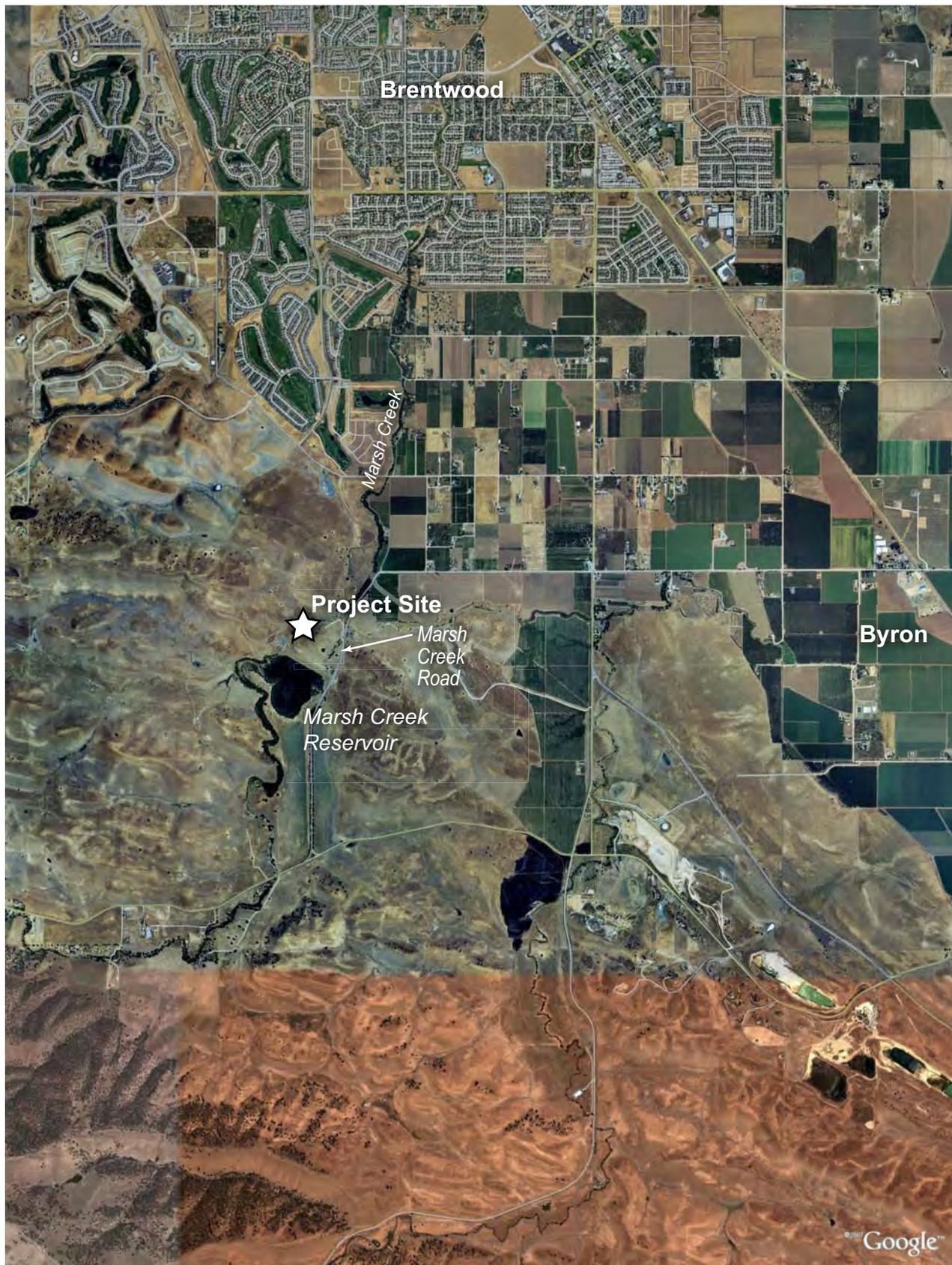


FIGURE 1
Project Location
*Line 131 Pipeline Replacement
at Marsh Creek*

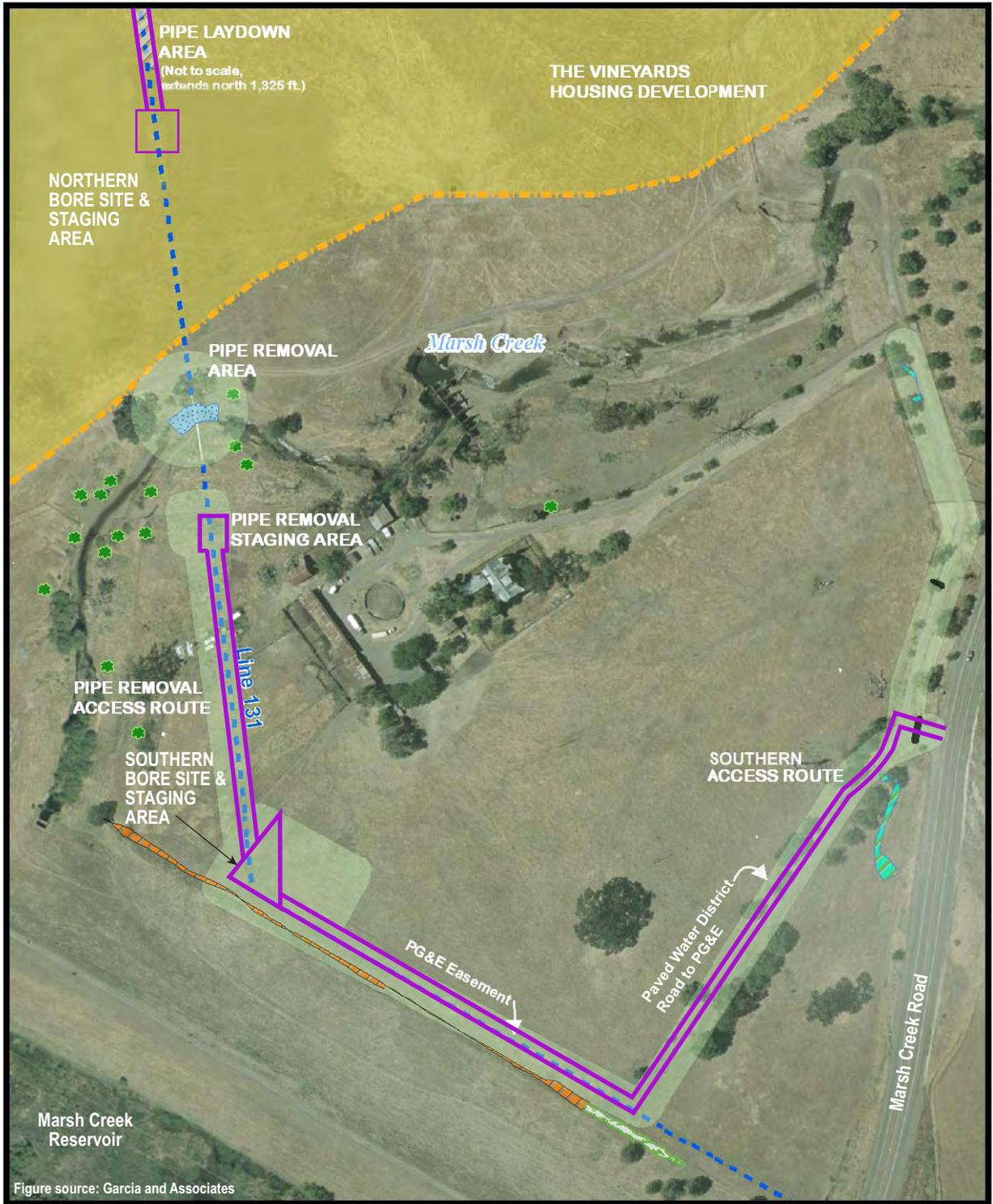


Figure source: Garcia and Associates

Legend

- Impact area
- ✪ Elderberry
- The Vineyards Housing Development (Previously Graded)
- California annual grassland (Surveyed)
- Photo View
- Culvert
- Ditch
- Freshwater marsh
- Seasonal wetlands
- Intermittent drainage

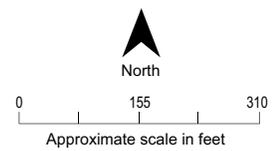


FIGURE 2
Project Site
Line 131 Pipeline Replacement at Marsh Creek

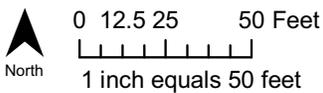
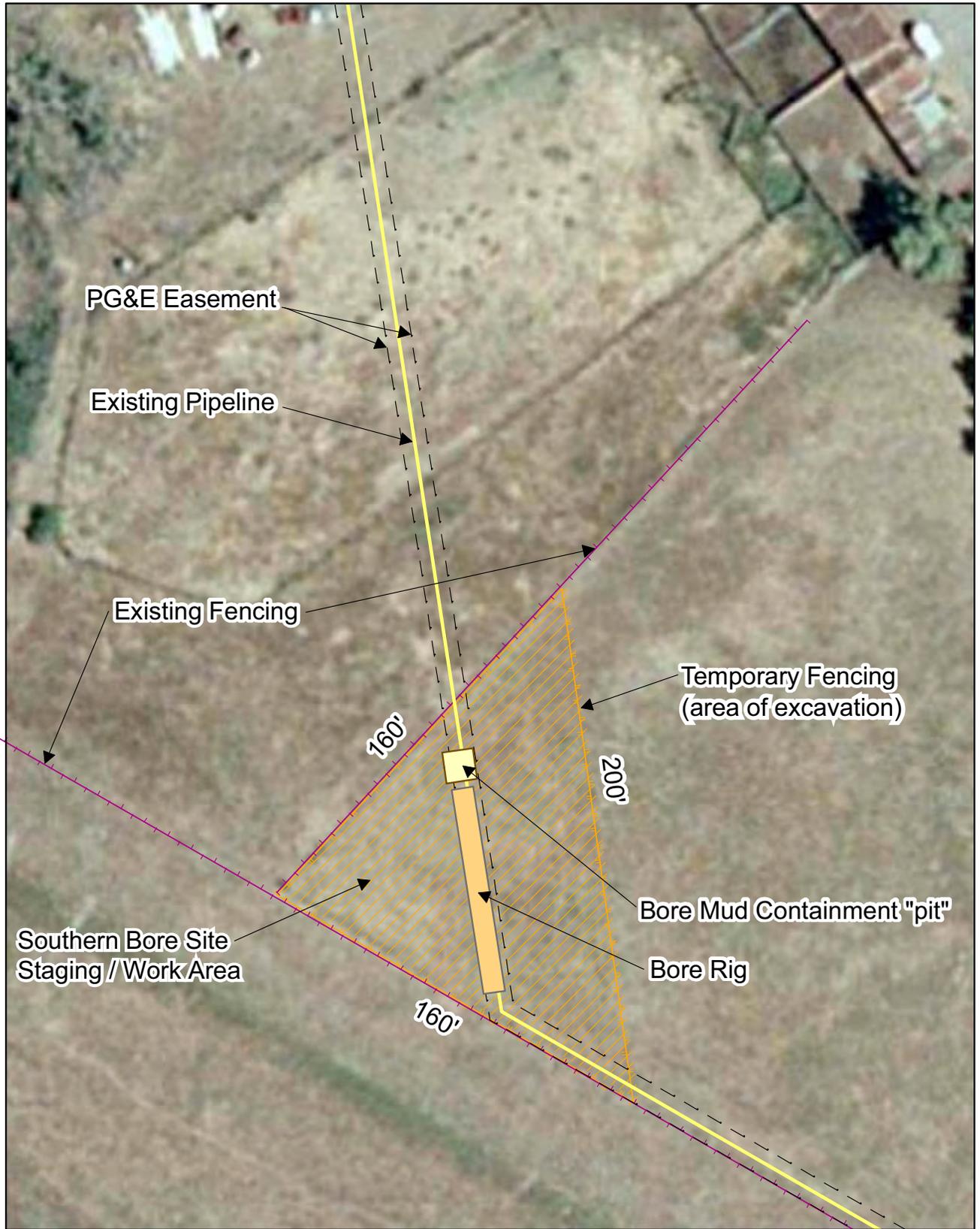
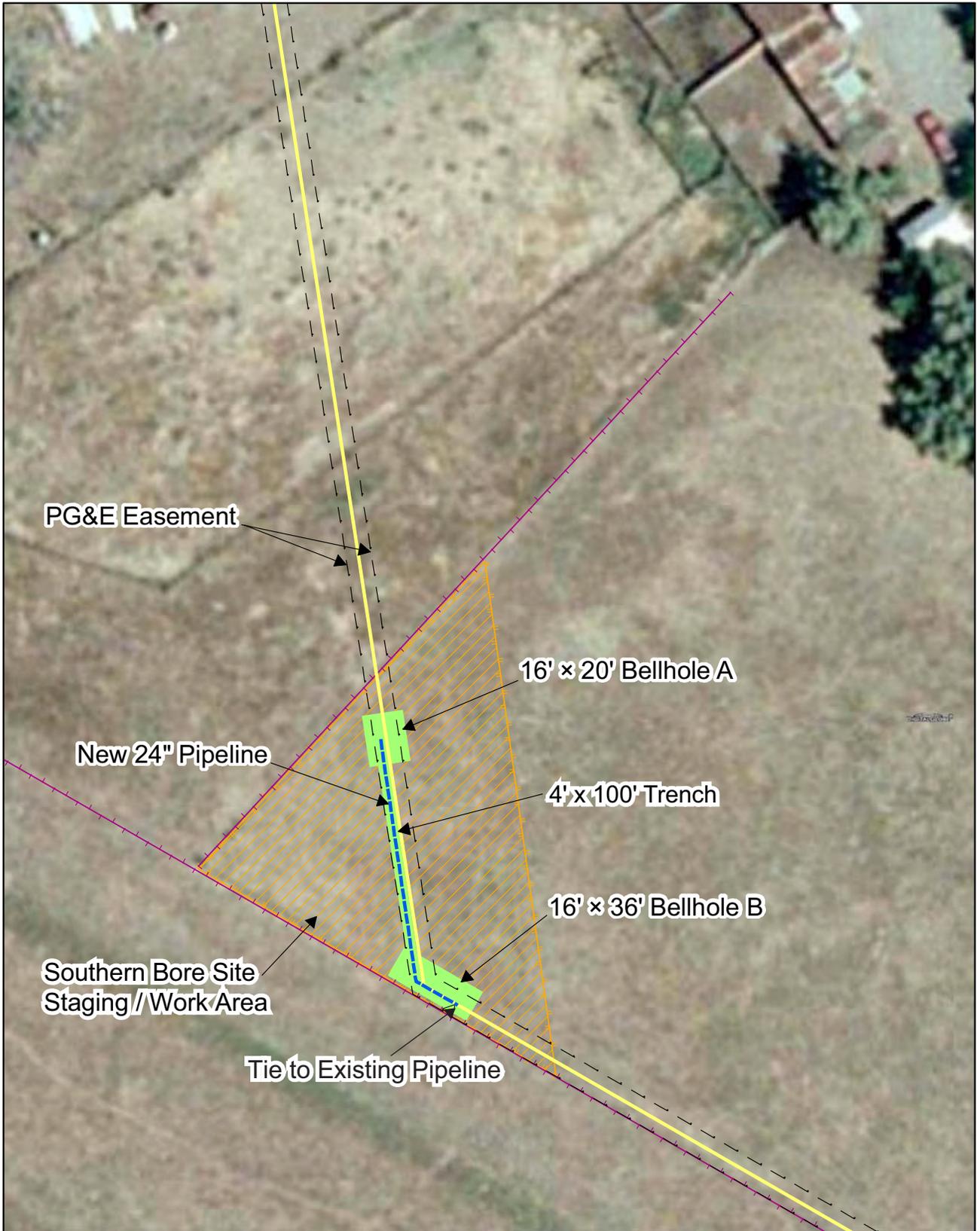


FIGURE 3
 Bore Site
 Line 131 Pipeline Replacement
 at Marsh Creek



Legend Areas of Excavation

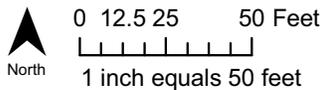


FIGURE 4
 Bore Tie-In
 Line 131 Pipeline Replacement
 at Marsh Creek



Current Line 131 pipeline crossing of Marsh Creek, facing northeast.
Photo date: 05/21/2007

FIGURE 5
Current Pipeline Crossing of Marsh Creek
*Line 131 Pipeline Replacement
at Marsh Creek*

INITIAL STUDY CHECKLIST

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------------|---|-------------------------------------|-------------------------------------|
| 1. AESTHETICS. Would the project: | | | | |
| (a) Have a substantial adverse effect on a scenic vista? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| (b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (c) Substantially degrade the existing visual character or quality of the site and its surroundings? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

The current views of the project site are from Marsh Creek Road and are dominated by open horse pasture covered with grasses and scattered trees, the old John Marsh house, and the ranching facilities. No residences with views of the project site have been built yet in the Vineyards Housing Development. Construction activities would have a temporary minor impact on views from Marsh Creek Road; however, following pipeline installation, construction areas will have pre-project appearance. Views of Marsh Creek itself would be improved by the project with removal of the visible existing pipeline spanning Marsh Creek (see Figure 5). No historic or scenic resources would be damaged by the project. No new permanent sources of light or glare would be added by the proposed project.

2. AGRICULTURE RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

| | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| (a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|------------------------------|-----------|
| The project site is not designated as having prime agricultural soils, as defined by the United States Department of Agriculture and is not designated as farmland in the City of Brentwood General Plan or zoning. In addition, public utilities are not subject to local planning and zoning codes. The southern bore site is currently being used for livestock grazing. Grazing in work areas around the southern bore site, approximately 0.68 acres, would be temporarily halted during construction; however, sufficient grazing areas are available on the remainder of the ranch property to continue ranch operations. Project work areas would be fenced to protect grazing livestock. All ranch gates opened for site access will be closed to prevent livestock from leaving the property. | | | | |

3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

| | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| (a) Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| (c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (d) Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (e) Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

The project site is located within the Bay Area Air Quality Management District (BAAQMD), which is responsible for monitoring and protecting air quality in the Bay Area. The District is in attainment for California and federal standards for carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead (BAAQMD 2008). The District is not in attainment for California standards for particulate matter (PM10 and PM2.5) or California and federal standards for ozone. Construction of the project would result in very minor emissions of particulate matter during excavation activities and of ozone from construction equipment diesel engines. The short construction duration and limited area of ground disturbance would limit any pollutant emissions from construction. Contribution to regional ozone and particulate matter levels would be less than significant. Operation of the project would not emit any pollutants and would not result in any operational air quality impacts.

No objectionable odors would be created by construction or operation of the project.

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
|--|--------------------------------|--|------------------------------|-----------|

4. BIOLOGICAL RESOURCES. Would the project:

- | | | | | |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|
| (a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|

Unless otherwise noted, information presented below was obtained from the *Biological Resources Technical Report for the Line 131 Class Change at Marsh Creek* (CH2M HILL and Garcia & Associates, September 2007, prepared for Pacific Gas & Electric Company).

Setting

Two general plant communities and corresponding wildlife habitat types were identified in the portion of the project site located on the field by Marsh Creek House: California grassland and freshwater marsh. California annual grassland is an extensive habitat type generally found in open areas in valley and foothills throughout much of California. This vegetation type is dominated by non-native annual grasses and weedy annual and perennial forbs, primarily of Mediterranean origin, that have replaced native perennial grasslands and scrub as a result of human disturbance. Characteristic non-native annual grasses commonly found on and near the work area include wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), wild barley (*Hordeum murinum* and *H. marinum* ssp. *gussoneanum*), and Italian ryegrass (*Lolium multiflorum*). Common non-native forbs include yellow star-thistle (*Centaurea solstitialis*), long-fruited stork’s bill (*Erodium botrys*), red-stemmed filaree (*Erodium cicutarium*), bur-clover (*Medicago polymorpha*), wild radish (*Raphanus raphanistrum* and *R. sativa*), lamb’s quarters (*Chenopodium album*), horehound (*Marrubium vulgare*), dwarf nettle (*Urtica urens*), Jim-hill mustard (*Hirshfeldia incana*), and vetch (*Vicia villosa*). Native species include common fiddleneck (*Amsinckia menziesii* var. *intermedia*) and common spikeweed (*Hemizonia pungens* ssp. *pungens*). Most of the project area south of Marsh Creek appears to be moderately to heavily disturbed by human activity and grazing.

Several very shallow seasonal wetlands occur at scattered locations within the non-native grassland community adjoining the paved portion of the southern access route (Figure 2). Seasonal wetlands occur on limited sediment deposits in an otherwise barren streambed within the incised channel of Marsh Creek, an intermittent drainage that is a tributary to the Sacramento-San Joaquin Delta (Garcia & Associates, 2007). The existing pipeline crossing over Marsh Creek is located just downstream of the base of the spillway for the Marsh Creek Reservoir.

In proximity to Marsh Creek where the exposed section of gas line 131 is to be removed, occasional large valley oaks (*Quercus lobata*) and blue elderberry shrubs (*Sambucus mexicana*) are present. In the vicinity of the main access route, blue oak (*Q. douglasii*) and Northern California black walnut (*Juglans hindsii* or *J. californica* var. *hindsii*) are present. The walnut trees appear to have been planted in rows along the paved portion of the access route.

The northern boring area is located within the Vineyards at Marsh Creek housing development, and all vegetation was previously removed as part of that development project.

Methodology

Existing information on biological resources in the vicinity of the property was reviewed prior to conducting field surveys. Information reviewed included results of the California Natural Diversity Database (CNDDDB) and California Native Plant Society (CNPS) database searches; U.S. Fish and Wildlife Service (USFWS) official list of federal endangered and threatened species that occur in the project vicinity; topographic maps and aerial photographs of the property; previous reports prepared on biological resources on and adjacent to the property; and information on special-status species' ranges and occurrence locations. Field site surveys were conducted in Spring 2007 to determine whether special-status species and sensitive biological resources are present or could potentially be present within the project area.

Special-Status Plants

Thirty-eight special-status plant taxa have some potential to occur on the project site because at least marginally suitable habitat exists for these taxa within the work area. However, no special-status plant taxa were identified within the project area based on a search of the California Natural Diversity Database (CNDDDB) and initial site surveys (CH2M HILL and Garcia & Associates, 2007). Protocol surveys were completed for plant species with moderate to high probability of occurrence based on the presence of suitable habitat within the work area and/or reported occurrences on neighboring properties. No special-status plants were found on the project site during protocol surveys. However, because there is potential for special-status species to occur (see Table 1 in the *Biological Resources Technical Report*), Mitigation Measure 4-1 will be implemented as described below so that any impacts to special-status plants would be less than significant.

Special-Status Wildlife

Based on the pre-field review and site assessment, 26 special-status federal and state wildlife species were identified as having at least a low potential to occur on the project site and vicinity (see Table 2 in the *Biological Resources Technical Report*). These species are summarized below. Detailed information about the species is provided in the *Biological Resources Technical Report*. A Biological Opinion (BO) for the project will be issued by USFWS; mitigation measures described below will be updated as needed based on the BO.

Crustaceans

Vernal pool fairy shrimp (*Branchinecta lynchi*) are federally listed as threatened and inhabit rain-filled ephemeral pools that form in depressions, usually in grassland habitats. The longhorn fairy shrimp (*Branchinecta longiantenna*), federally listed as an endangered species, inhabit clear to rather turbid vernal pools. The work area does not fall within critical habitat designated for vernal pool fairy shrimp or longhorn fairy shrimp, and no occurrences onsite were identified in the pre-field review. However, the vernal pool fairy shrimp has a moderate potential to occur in the work area based on the presence of suitable habitat (see wetland features on Figure 2) and the close proximity of known occurrences. Construction vehicles will use the paved road and existing PG&E easement for access. Impacts to adjacent wetlands, the nearest of which is approximately six feet from the access road, are not expected to occur. No suitable habitat for listed branchiopods is present within the areas of temporary impact, including the boring area, staging and laydown areas, pipe removal area and pipe removal staging areas. With the implementation of Mitigation Measures 4-2 and 4-3, the project would not have a substantial adverse affect on vernal pool fairy shrimp or longhorn fairy shrimp.

Insects

The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*, federal threatened) is a medium-sized (about 0.8 inches long) beetle. This beetle is associated with elderberry shrubs and trees (*Sambucus* spp.) in California's Central Valley during its entire life cycle. The work area does not fall within critical habitat designated for the valley elderberry longhorn beetle and there are no documented occurrences of valley elderberry longhorn beetle within 5 miles of the work area. However, a total of 26 elderberry shrubs were mapped in 15 locations in the work area and its vicinity, primarily along Marsh Creek, during spring surveys on May 21, 2007. All of the shrubs had at least one stem greater than 1.0 inch at the ground. Examination of the trunks found holes that are consistent with exit holes of the valley elderberry longhorn beetle. Some of these shrubs are within 100 feet of the pipe removal area and pipe removal staging area, although none are located on the work area itself. Protocol-level surveys were not conducted for this species but due to the presence of its host plant within the species range, this species is assumed to occur. With implementation of Mitigation Measures 4-2 and 4-4, the project would not have a substantial adverse affect on the elderberry beetle.

Two additional special-status insects have a low potential to occur within the vicinity of the project area. The curved-foot hygrotus diving beetle (*Hygrotus curvipes*) and molestan blister beetle (*Lytta molesta*) occupy seasonal ponds, pools, and streams. Marginally-suitable habitat occurs in the project vicinity and these species were considered to have a low potential for occurrence in the project vicinity. The closest known occurrence of the molestan blister beetle is about 1.5 miles northwest of the project area. No CNDDDB occurrences exist for the curved-foot hygrotus diving beetle in or near the project area. No adverse effects on these species would occur.

Amphibians

Two special-status amphibian species have high to moderate potential to occur in the project work area and/or its vicinity. The California tiger salamander (*Ambystoma californiense*), federally listed as a threatened species, is a relatively large, terrestrial salamander that inhabits grasslands and oak savanna habitats in the valleys and low hills of central and northern California. The work area does not fall within critical habitat designated for California tiger salamander. The nearest known breeding locality for California tiger salamander was documented in 1993, approximately 300 feet southeast of the work area. In addition, there are several documented occurrences of adults, juveniles, and breeding sites with larvae present within 5 miles of the work area. Several concentrations of ground squirrel burrows are found on the site, which could provide suitable upland habitat for California tiger salamander. Although protocol-level surveys were not conducted, this species has the potential to occur within the work area and is assumed to be present. Approximately 0.68 acres of California tiger salamander upland dispersal habitat will temporarily be impacted by the project. These areas are located at the southern boring and staging area and the pipe removal area and staging area, and the unpaved portion of the southern access route. With the implementation of Mitigation Measures 4-2, 4-5, and 4-6, the project may affect, but is not likely to have a substantial adverse affect on, the California tiger salamander.

Optimal habitat for the federally-listed as threatened California red-legged frog (*Rana aurora draytonii*, federal threatened) includes ponds, stream courses, permanent pools, and intermittent streams fed by drainage areas no larger than 74,000 acres between sea level and 5,000 ft in elevation. The work area does not fall within designated critical habitat for California red-legged frog, though it does lie immediately adjacent to proposed critical habitat Alameda Unit 1A. The nearest known locality for California red-legged frog is approximately 1.5 miles south of the work area. Potential suitable breeding habitat is present along Marsh Creek and at the Marsh Creek

Reservoir, which is approximately 250 feet to the southwest of the work area. In addition, the work area provides potential refugia and dispersal habitat. Although protocol-level surveys were not conducted, this species has the potential to occur within the action area and is assumed to be present. Approximately 0.68 acres of California red-legged frog upland dispersal habitat will be temporarily impacted during construction. These areas are located at the southern boring and staging area, the pipe removal area and staging area, and the unpaved portion of the southern access route. With the implementation of Mitigation Measures 4-2 and 4-5, the project may affect, but is not likely to have a substantial adverse affect on, the California red-legged frog.

Reptiles

Two special-status reptile species, the San Joaquin whipsnake (*Masticophis flagellum ruddocki*, California Species of Special Concern) and the Western pond turtle (*Actinemys marmorata*, federal and California Species of Special Concern), have potential to occur within the project area or its vicinity.

The San Joaquin whipsnake frequents a variety of habitats including open, dry habitats with no dense vegetation. Potential suitable habitat occurs in the project area. The closest known occurrence is located more than 3 miles from the project area. This species has a moderate potential to occur in the project area and its vicinity. However, with implementation of Mitigation Measure 4-5, the project is not likely to adversely affect the San Joaquin whipsnake.

One Western pond turtle was observed by a GANDA biologist on May 21, 2007 at Marsh Creek Reservoir a few hundred feet south of the project area. Marsh Creek also provides suitable aquatic habitat. The uplands in the project area and its vicinity also offer suitable nesting sites for the western pond turtle. This species has a high potential for occurrence in the project area and its vicinity. However, with implementation of Mitigation Measure 4-7, the project is not likely to adversely affect the western pond turtle.

Birds

Several special-status birds have the potential to occur in the project area and its vicinity, as described below. Potential impacts could occur to these species during construction as a result of nesting disturbance. However, with implementation of Mitigation Measures 4-8 and 4-9, the project is not likely to adversely affect special-status bird species.

A pair of Swainson's hawks (*Buteo swainsoni*), State-listed as threatened, was observed during the reconnaissance survey on May 21, 2007. The birds were using a tree in the project area for perching and appearing to be foraging in the adjacent open fields.

Burrowing owl (*Athene cunicularia*), a California Species of Special Concern, has a high potential to occur in the project area. Burrowing owls usually nest in old burrows of ground squirrels, badger, or other small mammals, although they may dig their own burrows in soft soil. Suitable foraging and nesting habitat is present within project area and its vicinity, including numerous California ground squirrel burrows. Twelve CNDDDB records exist for occurrences within 5 miles of the project area, and five burrowing owls were observed approximately 2,000 feet northwest of the project site in 2003 during focused nesting season surveys at Vineyards at Marsh Creek Project.

Golden eagle (*Aquila chrysaetos*), a California Species of Special Concern, has a high potential to occur in the project area and its vicinity. Suitable foraging and nesting habitat occur in the project vicinity and golden eagles have been observed within 5 miles of the project area.

Suitable foraging and nesting habitat also occurs in the project vicinity for the loggerhead shrike (*Lanius ludovicianus*) and the northern harrier (*Circus cyaneus*), both California Species of Special Concern. They have a high potential to occur in the project vicinity, though no CNDDDB occurrences were identified during pre-field research.

California horned lark (*Eremophila alpestris actia*), a California Species of Special Concern, frequents extensive barren-ground and short grass habitats. Suitable habitat is present and this species has a moderate potential to occur in the project vicinity, though no CNDDDB occurrences were identified during pre-field research.

Bank swallow (*Riparia riparia*), a State threatened species, can be found primarily in riparian and other open lowland habitats during migration. Marginally-suitable foraging habitat occurs in the project vicinity. This species has a low potential to occur in the project vicinity. No CNDDDB occurrences were identified during pre-field research.

Tricolored blackbird (*Agelaius tricolor*), a State Species of Special Concern, frequents fields, wetlands, and pasture. They nest in freshwater cattail and tule marshes. Marginally-suitable habitat occurs in the project vicinity. The tricolored blackbird was previously observed within approximately 3 miles of the project area. This species has a low potential for occurrence in the project area.

Mammals

The project site is within the northern part of the range of the San Joaquin kit fox (*Vulpes macrotis mutica*, federal endangered), although no critical habitat has been designated for this species. The closest reported occurrence is approximately two miles to the east of the work area. An early evaluation for the San Joaquin kit fox was performed for the nearby Vineyards at Marsh Creek project. That evaluation concluded that the Vineyards at Marsh Creek study area provides suitable foraging habitat, some denning opportunities, and potential movement opportunities. No kit fox sign (dens, tracks, scat) or kit fox were detected within project site during reconnaissance surveys and it was presumed unlikely kit fox were residing in the work area. However, because the project location is within the range of the kit fox, this species has the potential to occur within the work area and is assumed to be present. With implementation of Mitigation Measures 4-2 and 4-10, the project is not likely to adversely affect the San Joaquin kit fox.

The following bat species are federal Species of Concern or/and California Species of Special Concern: the pallid bat, the Pacific Western big-eared bat (*Corynorhinus townsendii townsendii*), the long-legged myotis bat (*Myotis volans*), and the small-footed myotis bat (*Myotis ciliolabrum*). These species have low potential to occur in the project vicinity due to lack of suitable roosting habitat on the project site. Those species usually roost in cliff crevices of rock faces, bridges, and occasionally hollow trees and buildings. None of those bats were reported to the CNDDDB within the project area or a five-mile radius. The project would not adversely affect these species.

The Yuma myotis bat (*Myotis yumanensis*), the long-eared myotis bat (*Myotis evotis*), and the fringed myotis bat (*Myotis thysanodes*) -- all federal Species of Concern -- have a moderate potential to occur in the project vicinity due to the presence a few old buildings and roosting spaces under tree bark. None of those species were reported within the project area or a five-mile radius by the CNDDDB. Construction activities will not affect the buildings and trees, and are not likely to adversely affect these species.

Fishes

Three fish species could potentially occur in the project vicinity: Central California coast steelhead (*Oncorhynchus mykiss*, federal threatened), spring-run, winter-run and fall-run Chinook salmon (*Oncorhynchus tshawytscha*, federal endangered, State endangered, and California Species of Special Concern), and Delta smelt (*Hypomesus transpacificus*, federal threatened, State endangered). Delta smelt and Chinook salmon do not have the potential to occur in the work area. Steelhead has a low potential of occurring in the work area.

Marsh Creek flows into Marsh Creek Reservoir, immediately upstream of the project area. From Marsh Creek Reservoir water is released back into Marsh Creek and flows generally northward for about 10 miles to Big Break (Dutch Slough) in the Delta. The segment of Marsh Creek immediately below the reservoir and adjacent to the project area is severely degraded and frequently does not hold water between July and October. In addition, there is a fish barrier about 6 miles downstream of the project area. Although lower Marsh Creek appears to support reproducing runs of Chinook salmon, the fish barrier prevents Chinook salmon from reaching the project area. There is some consideration being given to removing the fish barrier. However, due to the degraded habitat, and the frequent lack of water in Marsh Creek in the project vicinity, Chinook salmon and steelhead trout would not be expected to use this area, even if the fish barrier were removed. The project is not likely to adversely affect steelhead. However, to provide further protection for steelhead, Mitigation Measure 4-11 will be implemented.

Mitigation Measures

Mitigation Measure 4-1. Preconstruction surveys for special-status plants will be completed on the project site prior to start of construction activities. If a special-status species is identified within the project site, the resource agencies will be contacted and standard mitigation measures will be implemented. Mitigation for annual plants could include topsoil salvage after the plants have set seed. Salvaged topsoil would be re-spread following construction in an appropriate on-site location. Mitigation for perennial species could include salvage of the actual plants and relocation to a suitable habitat. All mitigation measures will be pre-approved by the resource agencies, and overseen by a biological monitor.

Mitigation Measure 4-2. The following general protection and mitigation measures will be implemented to minimize impacts to special status species in the action area:

1. A qualified biologist will provide all employees in the work area with a worker awareness program before any ground disturbing activities within the work area begin. ("Employees" as used in these Avoidance Recommendations includes all PG&E employees, consultants, contractors and construction crew personnel.) This program will be used to describe the vernal pool branchiopods, valley elderberry longhorn beetle, California tiger salamander, California red-legged frog and San Joaquin kit fox, their habitats, legal status and required protection and all applicable mitigation measures.
2. PG&E shall appoint a representative who will be the contact source for any employee who might inadvertently kill or injure a vernal pool fairy branchiopod, valley elderberry longhorn beetle, California tiger salamander, California red-legged frog or San Joaquin kit fox or who finds a dead, injured or entrapped individual. The representative shall be identified during the worker-awareness program. The representative's name and telephone number shall be provided to the USFWS prior to the initiation of ground disturbing activities.

3. At all times in which a qualified biologist is not present at the work area, PG&E shall designate a person to monitor onsite compliance with all conservation/minimization/avoidance measures during construction. A USFWS-approved biologist shall ensure that this individual receives training in the identification of vernal pool branchiopods, valley elderberry longhorn beetle, California red-legged frog, California tiger salamander and San Joaquin kit fox. The monitor and the USFWS-approved biologist shall have the authority to halt any action that might result in the death, injury or harassment of vernal pool branchiopods, valley elderberry longhorn beetle, California red-legged frog, California tiger salamander or San Joaquin kit fox. If work is stopped, the USFWS shall be notified immediately by the approved biologist or onsite biological monitor.
4. Do not use plastic mono-filament erosion control matting for erosion control where California red-legged frog and/or California tiger salamander may become entangled or trapped in it.
5. Install exclusion fencing (orange construction fencing) around the dig site (excavation and stockpile areas).
6. Return work area to pre-existing contour, evaluate, and proceed with any necessary restoration measures (including reseeding and/or erosion control).
7. Keep vehicles on established access road and within delineated work area unless off-road access is approved by a qualified biologist.
8. Nighttime construction will be minimized as much as possible.
9. To prevent accidental entrapment of California tiger salamander, California red-legged frog or San Joaquin kit fox during construction, escape ramps and/or fencing as appropriate will be installed at the direction of the biological monitor at all excavated holes and trenches. Trenches will be inspected by the biological monitor prior to work starting each day. Before such holes are filled, they shall be thoroughly inspected for trapped animals. In the event of a trapped animal, ramps or other type of structure shall be installed immediately to allow the animal to escape. The USFWS will be notified in the event a special-status species was identified.

Mitigation Measure 4-3. To protect potential habitat for vernal pool fairy shrimp or longhorn fairy shrimp, establish a minimum 6-foot buffer from the outer edge of all hydric vegetation associated with seasonal wetlands. Buffers will be marked by brightly colored fencing or flagging throughout the construction process.

Mitigation Measure 4-4. To protect the Valley Elderberry Longhorn Beetle, implement the USFWS Conservation Guidelines for the Valley Elderberry Longhorn Beetle, which includes the following measures.

- All construction access, staging areas, and construction vehicle use will be more than 100 feet from elderberry shrubs, and all such areas and equipment will be fenced to prevent access by grazing horses present on the ranch. All human activity, including removal of the pipeline spanning Marsh Creek using hand tools, will be more than 75 feet from elderberry shrubs.
- Erect signs every 50 feet along the edge of the avoidance area with the following information: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be clearly readable from a distance of 20 feet and must be maintained for the duration of construction.

- Restore any damage done to the buffer area during construction. Provide erosion control and re-vegetate with appropriate native plants. No activities for project operation will occur on the ranch following construction, so buffer areas are not needed following construction and revegetation.
- No insecticides, herbicides, fertilizers or other chemicals that might harm the beetle or its host plant should be used in the buffer areas, or within 100 feet of any elderberry plant within one or more stems measuring 1.0 inch or greater in diameter at ground level.
- Mowing of grasses/ground cover may occur from July through April to reduce fire hazard. No mowing should occur within five feet of elderberry plant stems. Mowing must be done in a manner that avoids damaging plants (e.g., stripping away bark through careless use of mowing/trimming equipment).

Mitigation Measure 4-5. To minimize any construction-related impacts to special-status amphibians or reptiles, the following measures will be implemented.

- At least 15 days prior to the onset of activities, the applicant or project proponent shall submit the names(s) and credentials of biologists who would conduct activities specified in the following measures. No project activities shall begin until proponents have received written approval from the USFWS that the biologist(s) is qualified to conduct work.
- A USFWS-approved biologist shall survey the work site two weeks before the onset of activities. If special-status amphibians or reptiles are found at any life stage, the approved biologist shall contact the USFWS to determine if moving any of these life-stages is appropriate. In making this determination, the USFWS shall consider if an appropriate relocation site exists. If the USFWS approves moving animals, the approved biologist shall be allowed sufficient time to move the animals from the work site before work activities begin. Only USFWS-approved biologists shall participate in activities associated with the capture, handling and monitoring of special-status amphibians or reptiles.
- A USFWS-approved biologist shall be present at the work site until such time as all removal of special status amphibians or reptiles, instruction of workers, and habitat disturbance have been completed. After this time, the contractor or permittee shall designate a person to monitor on-site compliance with all minimization measures. The USFWS-approved biologist shall ensure that this individual receives training in the identification of special-status amphibians and reptiles. The monitor and USFWS-approved biologist shall have the authority to halt any action that might result in impacts that exceed the levels anticipated by the Corps and USFWS during review of the proposed action. If work is stopped, the Corps and USFWS shall be notified immediately by the USFWS-approved biologist or on-site biological monitor.
- During project activities, all trash that may attract predators shall be properly contained, removed from the work site and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas. All fueling and maintenance of vehicles and other equipment and staging areas shall occur at least 100 feet from any riparian habitat or water body, or visquene plastic with adequate secondary containment will be used to fuel stationary equipment within 100 feet. The Corps and permittee shall ensure contamination of habitat does not occur during such operations. Prior to the onset of work, the Corps shall ensure that the permittee has prepared a plan to allow a prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

- A USFWS-approved biologist shall ensure the spread or introduction of invasive, exotic plant species shall be avoided to the maximum extent possible. When practicable, invasive exotic plants in the project areas shall be removed. Project sites shall be revegetated with an appropriate assemblage of native riparian and upland vegetation suitable for the area, at the direction of a qualified botanist.
- The number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to achieve the project goal. Routes and boundaries shall be clearly demarcated and these areas shall be outside of riparian and wetland areas. Where impacts occur in these staging areas, restoration shall occur as identified in measure 7 above.
- Work activities shall be completed between April 1 and November 1. Should the proponent or applicant demonstrate a need to conduct activities outside this period, the Corps may authorize such activities after obtaining the USFWS approval.
- To control erosion during and after project implementation, the applicant shall implement best management practices, as identified by the appropriate Regional Water Quality Control Board.
- Burrow complexes along overland access routes will be flagged and avoided to the degree feasible.

Mitigation Measure 4-6. To compensate for the temporary impacts to 0.68 acres of California tiger salamander aestivation habitat, PG&E will provide habitat compensation at a 1.1:1 mitigation ratio (1.1 acres of mitigation per 1 acre of temporary impact) or as specified by the US Fish and Wildlife Service.

Mitigation Measure 4-7. To minimize any construction-related impacts to the western pond turtle, complete pre-construction surveys for western pond turtle. Any individual western pond turtles found on the project site during pre-construction surveys will be relocated by a qualified biologist. Construction zone limits around the project work areas will be set up using fencing to restrict access by turtles into construction areas. Any turtle found in the construction area will be relocated by a qualified biologist outside the construction zone.

Mitigation Measure 4-8. Pre-construction nest surveys will be conducted prior to the start of construction if construction occurs during the breeding season (February 1- August 15). If results of the pre-construction surveys indicate that special-status bird species are nesting on-site, standard mitigation measures will be implemented, such as: Delays in construction in the area of the nest until the young have fledged; passive relocation techniques (e.g. removal of nesting habitat prior to the breeding period); and/or the presence of a biological monitor during construction.

Mitigation Measure 4-9. If appropriate, a pre-construction survey for burrowing owls conducted by a qualified biologist will be completed prior to construction activities within the project area. The pre-construction surveys will be conducted per CDFG guidelines (currently no more than 30 days prior to the start of site grading), regardless of the time of year in which grading occurs. If no burrowing owls are found within the project site or within an additional 250-foot radius, then no further action is warranted. If burrowing owls are present in the project area during the non-breeding season between September 1 and January 31, a 160 foot-buffer will be established around occupied burrows. If burrowing owls are present in the project area during the breeding season between February 1 and August 31, a 250 foot-buffer will be established around the occupied burrows.

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
|--|--------------------------------|--|------------------------------|-----------|

If impacts to occupied burrows are unavoidable, on-site passive relocation by a qualified biologist will be implemented in conjunction with CDFG. Temporary impacts to potential foraging habitat will be mitigated through revegetation of disturbed areas following construction.

Mitigation Measure 4-10. To minimize any construction-related impacts to the San Joaquin kit fox, pre-construction surveys shall be conducted in the work area no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities that are likely to impact the San Joaquin kit fox.

Project-related vehicles shall observe a 10-mph speed limit in project areas deemed to provide kit fox habitat, except as posted on county roads, and state and federal highways. Nighttime construction will be avoided.

All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at the work area for one or more overnight periods will be thoroughly inspected for kit foxes before the pipes are subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe will not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of a qualified biologist, the pipe may be moved once to remove it from the path of construction activity, until the kit fox has escaped.

PG&E shall appoint a representative who will notify the USFWS immediately in the event of an accidental death or injury to a kit fox during project-related activities, and a follow-up letter will be submitted within 3 working days of the accident.

Mitigation Measure 4-11. All in-stream work will be conducted between July and October, when Marsh Creek is dry. Although not known or expected to occur on the Line 131 site, the following measures will be implemented to minimize potential impacts to Central Valley steelhead and Central Valley chinook salmon in the lower reaches of Marsh Creek:

A site specific Storm Water Pollution Prevention Plan will be developed and implemented to limit construction debris and runoff from entering Marsh Creek during Line 131 construction. Silt fence, weed-free hay bales and booms, and other sedimentation and erosion control devices will be placed in strategic locations downstream of the construction area as appropriate to prevent materials from entering Marsh Creek.

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| (b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| (c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
|--|--------------------------------|--|------------------------------|-----------|

A preliminary determination of waters of the U.S. classified 0.18 acre of Marsh Creek within the pipe removal area as intermittent drainage (Garcia and Associates, 2007). Minor impacts could occur to the banks of Marsh Creek during removal of the old pipeline spanning Marsh Creek. Work in the vicinity of Marsh Creek would be done between July and October when the channel is dry. Workers on foot will access the pipe from within the creek banks in order to cut it for removal by crane; no equipment or work will take place on the channel floor. Following removal of the pipe section crossing Marsh Creek, minor hand digging around the remaining pipe will be done to cut the pipe just below ground level. The cut ends of the remaining abandoned pipe will be filled with grout that will be carried from the staging area by hand. After grouting, the ends of the pipe will be covered with soil. These activities could result in a small amount of incidental soils from the adjacent banks falling into the creek channel below the work area. Any impacts would be minor. The removal of the old pipeline would result in an overall improvement to Marsh Creek. The portion of the Marsh Creek channel within the project site is largely unvegetated. No riparian vegetation or trees would be removed as part of the project.

To further protect Marsh Creek, BMPs (silt fencing, straw wattles, etc) will be employed on the downstream side of all stockpiles to minimize the amount of any sediments that may reach Marsh Creek. These will be detailed in the Stormwater Pollution Protection Plan (SWPPP). An Inadvertent Return Contingency Plan will detail measures to remove any drilling fluids that could surface during the HDD boring operation. All work along the upper banks of Marsh Creek, including cutting, minimal excavation and filling of the abandoned pipe area, will be done by hand crews only. All staging areas will be located a minimum of 100 feet from the upper bank of Marsh Creek. Refueling and overnight vehicle and heavy equipment storage will occur at least 100 feet from the upper bank of Marsh Creek.

It is anticipated that the project will be included under a USACE nationwide permit for compliance with Section 404 of the Clean Water Act, and that the RWQCB will issue a Section 401 Water Quality Certification for the project. Any mitigation measures or other requirements included in those authorizations also will be implemented.

Other potential water or wetland features existing within approximately 30 feet the work areas are shown on Figure 2. These include approximately 0.06 acre of seasonal wetlands and 0.05 acre of freshwater marsh. These wetland features are not included in the work area and would not be affected by project implementation.

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| (d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

As discussed in 4(a) above, although lower Marsh Creek appears to support reproducing runs of Chinook salmon, a fish barrier about 6 miles downstream of the project area prevents Chinook salmon and other migratory fish species from reaching the project area. Work in Marsh Creek would be completed between July and October when the channel is dry. Substantial interference with migratory fish is unlikely as a result of the project.

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|-------------------------------------|-------------------------------------|
| (e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

The East Contra Costa County Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) addresses 28 listed and non-listed species identified within a 174,000 acre inventory area (Jones & Stokes, 2006). The mission of the East Contra Costa County HCP/NCCP is to provide comprehensive species, wetlands, and ecosystem conservation and contribute to recovery of endangered species within East Contra Costa County while:

- Balancing open space, habitat, agriculture, and urban development;
- Reducing the cost and increasing the clarity and consistency of federal and state permitting;
- Consolidating and streamlining these processes into one, locally controlled plan;
- Encouraging, where appropriate, the multiple use of protected areas, including recreation and agriculture;
- Sharing the costs and benefits of the habitat conservation plan as widely and equitably as possible; and
- Protecting the rights of private-property owners.

Projects can seek coverage under the HCP/NCCP to streamline the environmental permitting process for impacts to endangered species. The project site is located only partially within the urban development area (that portion of East Contra Costa County covered by the HCP/NCCP). Utility projects outside of the urban development area are addressed on a case-by-case basis by USFWS and CDFG for coverage under the HCP/NCCP. Because no substantial adverse effects to special-status species are expected as a result of the project, and because USFWS will be issuing a separate Biological Opinion for this project, coverage under the HCP/NCCP is not being pursued for this project. Nevertheless, the project is consistent with the mission of the HCP/NCCP. The mitigation measures described in Section 4 of this checklist will help to avoid and minimize impacts to endangered species and contribute to the recovery of the California tiger salamander, one of the species covered by the HCP/NCCP, by funding breeding habitat restoration.

5. CULTURAL RESOURCES. Would the project:

| | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| (a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
|--|--------------------------------|--|------------------------------|-----------|

A records search was completed for a one-mile area in and around the project area to determine the presence of any known historic resources (see discussion in 5(b) below). Only two known historic resources were identified, the John Marsh House and a dam/bridge. The dam/bridge will not be affected by the project. Much of the project site lies in a proposed State Historic Park that contains the historic John Marsh House. The house is depicted on early historical maps and is considered eligible to the National Register of Historic Places as a structure of historical and architectural significance. California State Parks is in the process of developing a master plan for the management of the Marsh Creek property. Project work would not occur near the house, would not remove or modify the John Marsh House, and would not interfere with any activities to protect or restore the house. Removal of the pipeline spanning Marsh Creek will return the ranch to a more historically-accurate appearance.

A pedestrian survey of the site in June 2007 identified a portion of a historical irrigation ditch in part of the boring area, and two previously unidentified historical foundations were located on either side (east and west) of PG&E’s pipeline easement. None of these would be affected by the project. Excavation in the boring area will be sited to avoid the historical irrigation ditch. Construction activity in the vicinity of the historical foundations will be limited to vehicle access on the PG&E easement.

- (b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

In order to verify the location of any previously recorded archaeological resources, a records search was completed for a one-mile area in and around the project area. The results of the records search, provided by the Northwest Information Center of the California Historical Resources Information System, indicates that five previously recorded sites are located in or near the project area, while another five sites are located within one-mile of the project.

Of the recorded sites located in or near the project, one is a historical dam/bridge that would not be affected by the project; one is both prehistoric and historical (the historical John Marsh House is discussed above in 5(a)); and two are prehistoric deposits. A portion of the project site is located within the boundaries of the prehistoric site that includes the John Marsh House.

In order to verify the location of any previously recorded archaeological resources, a records search was completed for a one-mile area in and around the project area. The results of the records search, provided by the Northwest Information Center of the California Historical Resources Information System, indicates that five previously recorded sites are located in or near the project area, while another five sites are located within one-mile of the project. Of those located in or near the project, one is a historical dam/bridge that would not be affected by the project; one is both prehistoric and historical (the historical John Marsh House is discussed above in 5(a)); and two are prehistoric deposits. A portion of the project site is located within the boundaries of the prehistoric site that includes the John Marsh House.

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
|--|--------------------------------|--|------------------------------|-----------|

An intensive pedestrian archaeological survey of the ground surface was performed in the project area and surrounding State Park property in June 2007. A dispersed scatter of prehistoric archaeological materials was found to extend across the project’s proposed southern boring area and across much of the surrounding floodplain. Based on the records search and the pedestrian survey results, it is assumed that surface and subsurface archaeological resources are present on the project site. Project construction could result in a substantial adverse impact to archaeological resources, both on the surface from vehicle access/staging activities and subsurface from excavation or boring.

To better characterize the archaeological sub-surface resources that might be encountered during construction, subsurface archaeological explorations will be conducted prior to construction using a backhoe. A maximum of eight backhoe trenches will be excavated in the area of the southern bore pit and pipeline tie-in. Each trench will be approximately three feet wide and 12 to 24 feet long. The depth of the excavations will be limited to approximately 15 feet, the maximum depth normally reached by a backhoe. Soil will be stockpiled immediately adjacent to the excavations. The deposits will be closely monitored for cultural materials as they are removed from the trenches, and will be periodically raked and/or screened to help ensure that cultural materials or human remains are identified, if present. The soil will be returned to the excavations when the exploration is complete.

To reduce potential impacts to surface and subsurface archaeological resources to a less than significant level, the following mitigation measures will be implemented.

Mitigation Measure 5-1. Prior to start of construction activities, a qualified archaeologist will complete an examination of the ground surface within the construction area to collect visible archaeological materials. These artifacts will be curated for future study. Following the collection of surface artifacts, steel plates or similar will be placed over the staging area to avoid damage to soils and any artifacts located immediately below the surface. Construction vehicles will use low-pressure tires as feasible to minimize their impact on the access roads.

Mitigation Measure 5-2. A qualified archaeological monitor shall be present to monitor all ground-disturbing activities during construction. If archeological resources or human remains are discovered, work will be immediately halted at the location of the discovery while a professional archeologist, California State Parks, and if appropriate the county coroner, are consulted to determine the significance of the find, whether the site should be avoided or a data recovery performed, and how any artifacts or human remains should be treated.

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| (c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

No paleontological resources are known to occur on site.

- | | | | | |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|
| (d) Disturb any human remains, including those interred outside of formal cemeteries? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
| Records indicate that sensitive cultural remains have been recovered from two sites less than a mile from the project. No human remains have been found in the vicinity of the project site; however, given the proximity of the project site to known sensitive cultural resources, human remains could potentially be present on the project site and be affected by the project. The subsurface archaeological investigations described in 5(b) will help to determine whether human remains are present. Even if no human remains are found during the investigations, Mitigation Measure 5-2 described above will be implemented to reduce any impacts to human remains to a less than significant level. | | | | |

6. GEOLOGY AND SOILS. Would the project:

| | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| (a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| (i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| (ii) Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| (iii) Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (iv) Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

The project site is in a seismically active area. Segments of the Brentwood fault have been identified on the Vineyards at Marsh Creek residential development (RBF Consulting, 2003). The Brentwood fault has not experienced movement within the last 70,000 years and is therefore considered to be inactive. The potential for fault rupture under a portion of the pipeline could exist through an unknown fault, or through sympathetic movement resulting from an event on another fault in the region, but the likelihood is considered to be low. The pipeline design will be reviewed by a registered professional engineer to assure compliance with seismic design requirements. Potential impacts from fault rupture or ground shaking would be less than significant.

The proposed project does not include any inhabited buildings or similar structures and would not expose people or structures to seismic or landslide risks. Because the project does not include any above-ground structures, no impacts would occur from seismic-related ground failure or liquefaction. The new pipeline will be located underground well below any areas of potential landslide.

| | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| (b) Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|------------------------------|-------------------------------------|
| (c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Construction of the project includes areas of excavation. Most of the site is relatively flat. In addition, BMPs will be implemented to protect soil and water quality during construction. BMPs will be described in the project Stormwater Pollution Protection Plan (SWPPP), and may include silt fences or straw wattles on the downstream border of the construction area, stockpiling soils at least 100 feet from drainages, and installing hydroseed and straw mulch after construction is completed. As a result, project construction is not expected to be a significant source of erosion of exposed soils due to wind or water.

Because the project does not include any above-ground structures, no impacts would occur from landslides, lateral spreading, subsidence, liquefaction, collapse, or expansive soils.

The project does not include or require septic tanks or other wastewater disposal systems. Construction workers will use contractor-supplied portable toilets, the wastewater from which will be taken off-site to a wastewater treatment facility for processing.

7. HAZARDS AND HAZARDOUS MATERIALS. Would the project:

| | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| (a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| (b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| (c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
|--|--------------------------------|--|------------------------------|-----------|

(d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (2)

The construction activities associated with this project in general do not pose a hazardous materials risk; however, construction equipment will require refueling and maintenance. These activities would be done at the beginning or end of a workday when equipment is located in the staging area, where any accidental spills or releases would be easily contained and addressed through implementation of standard construction Best Management Practices. Operation of the project would not require the transport, use, or disposal of hazardous materials. The replacement of the pipeline will result in greater safety compared to current conditions.

The proposed project is not located on a hazardous materials site pursuant to Government Code Section 65962.5 and is not located within one-quarter mile of any existing or proposed schools.

(e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

(f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

There are no public airports within two miles of the proposed project. There are no private airstrips within the vicinity of the proposed project.

(g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No road closures would be necessary during construction. As a routine construction measure, emergency access and evacuation procedures will be developed and implemented as part of the on-site health and safety plan.

(h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|------------------------------|-----------|
| The project site is in an open grassland area that has the potential to experience wildland fires. During construction, standard measures will be implemented to minimize the potential for construction activities to cause a wildland fire, including mowing vegetation as needed along access routes, designating smoking areas, and maintaining fire extinguishers or similar on the construction site. | | | | |

8. HYDROLOGY AND WATER QUALITY. Would the project:

- (a) Violate any water quality standards or waste discharge requirements?

Excavation and grading activities could lead to wind and water erosion of exposed soils, causing potential siltation and sedimentation in on-site stream courses. The contractor will be required to develop a SWPPP for the project’s construction stormwater permit that complies with the regulations of the State Water Quality Control Board. The measures included in the SWPPP would reduce the impacts associated with project construction as a result of wind or water erosion to a level of insignificance. Measures may include silt fences or straw wattles on the downstream border of the construction area, stockpiling soils at least 100 feet from drainages, providing secondary containment for hazardous materials stored within 100 feet of a drainage, and installing hydroseed and straw mulch after construction is completed. If needed, the boring pit can be lined.

The drilling mud, which will be contained in the boring pit, will be filtered and processed on site during the bore operations to be reused to cool the cutting head, lubricate the bore piping, and stabilize the bore hole. Excess drilling mud will be stored in appropriate containers for hauling and off-site disposal in an appropriate location.

The Project Applicant will submit an application for water quality certification pursuant to Section 401 of the Clean Water Act. The proposed project impact to water quality will be regulated by the Central Valley Regional Water Quality Control Board.

- (b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? (3)

Excavation activities could encounter groundwater. Any groundwater encountered will be pumped out and stored in a tank for reuse for dust control and/or pasture irrigation. Because of the limited size and depth of the excavation, the amount of groundwater pumped out would be minor and would not substantially deplete groundwater supplies. The ground surface will be returned to pre-construction condition. Operation of the project would not affect groundwater.

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|-------------------------------------|-------------------------------------|
| (c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (f) Otherwise substantially degrade water quality? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

The ground surface will be returned to pre-construction grades and revegetated following construction. No changes to the existing drainage pattern of the site would occur as a result of the project. A minor amount of groundwater may be used onsite for dust control or irrigation; this amount of water would not exceed the stormwater capacity of the site. No new permanent sources of stormwater runoff would be created as a result of the project.

Construction activities in Marsh Creek will be done between July and October when the channel is dry. No construction vehicles will work inside the Marsh Creek Channel; all work will be done by construction workers on foot. Minor amounts of soil from the Marsh Creek banks could fall into the channel during removal of the pipeline. No substantial degradation to water quality in Marsh Creek would occur.

| | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| (g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-------------------------------------|
| (j) Inundation by seiche, tsunami, or mudflow? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

The project does not include new housing or other above-ground structures. The project will not affect any dams, including the dam for Marsh Creek Reservoir. The project site is inland and not in an area subject to seiche, tsunami, or mudflow.

9. LAND USE AND PLANNING: Would the project:

| | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| (a) Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

The project does not include any above-ground structures and is not located in or near an established community.

| | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| (b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Public utilities are not subject to local zoning and land use controls; nevertheless, the project is consistent with local general plan requirements and zoning codes. The project site is located on both private property (the northern bore site within the Vineyards at Marsh Creek development) and on public land (the southern bore site within California State Parks and Contra Costa County Flood Control and Water Conservation District).

PG&E holds an easement for the length of the Line 131 pipeline, dating from 1947. The easement predates by many years both the acquisition of the John Marsh State Historic Park by California State Parks and the Vineyards at Marsh Creek development. California State Parks acquired the property subject to the use of the easement, which allows PG&E reasonable access to maintain, replace and operate the pipeline.

The mission of California State Parks is to preserve, protect and interpret California’s natural, cultural, and recreation resources. State Parks is in the process of developing a Park Master Plan for the John Marsh State Historic Park to address the cultural and natural resources present on the site. PG&E had issued a Letter of Assurance, signed by California State Parks, describing avoidance and minimization measures to further California State Parks’ strategic initiatives and plan for the John Marsh State Historic Park (PG&E 2007). All avoidance and minimization measures listed in the Letter of Assurance have been incorporated into the project; these measures include the following.

- PG&E will coordinate with State Parks and the land tenant before PG&E crew persons remove any farm equipment for access along Old Marsh Creek Road and access from the southern bore pit to the pipe span removal site.

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|-------------------------------------|--------------------------|
| <ul style="list-style-type: none"> PG&E will submit weekly progress reports to State Parks detailing the current schedule of construction activities, and immediately notify State Parks in the event of a cultural discovery. PG&E shall have at least one pre-construction meeting and one post-construction meeting with State Parks staff in addition to the weekly progress reports. | | | | |
| (c) Conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

As discussed in Section 4 above, coverage under the East Contra Costa County HCP/NCCP is not being pursued for this project. Nevertheless, the project is consistent with the mission of the HCP/NCCP. The mitigation measures described in Section 4 of this checklist will help to avoid and minimize impacts to endangered species and contribute to the recovery of the California tiger salamander, one of the species covered by the HCP/NCCP, by funding breeding habitat restoration.

10. MINERAL RESOURCES: Would the project:

| | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| (a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

No known mineral resources are located on the project site.

11. NOISE: Would the project result in:

| | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| (a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| (b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| (c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|------------------------------|-------------------------------------|
| Construction activities associated with proposed project will require earth-moving equipment, trucks, and other equipment that could result in temporary increases in noise levels that exceed normal background levels and in temporary groundborne vibration. The daily construction schedule will vary depending on the construction activities being completed. At various times, it will be necessary for drilling activities to continue without stopping. If construction must occur after typical work hours of 7:00 AM to 5:30 PM, Monday through Saturday, PG&E will notify the landowner ahead of time will and accommodate the landowner's concerns by installing sound walls, using low lighting, etc. | | | | |
| No permanent changes in ambient noise levels from implementation of the project would occur. | | | | |
| (e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| The project site is not located within 2 miles of a public airport or in the vicinity of privately operated airstrips. | | | | |

12. POPULATION AND HOUSING: Would the project:

| | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| (a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

The proposed project does not include new housing or businesses or land use changes that would induce population growth in the area. Project construction would last approximately 4 months and only require a small number of workers, and would not increase demand for housing. The new Line 131 pipeline is the same size as the existing pipeline and would not increase gas utility services. No indirect inducement of population growth would occur.

The proposed project would not displace housing or people.

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|-------------------------------------|-------------------------------------|
| 13. PUBLIC SERVICES: Would the project: | | | | |
| (a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | | | | |
| (i) Fire protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| (ii) Police protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (iii) Schools? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (iv) Parks? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (v) Other public facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

The project would not increase demand for police protection, schools, parks, or other public facilities. As discussed above in Section 7(h), the project site is in an open grassland area that has the potential to experience wildland fires, and standard measures would be implemented to minimize any fire potential. Fire protection for the site is provided by East Contra Costa Fire Protection District, established in 2003.

14. RECREATION. Would the project:

| | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| (a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

The project would not create any new demand for public park or recreational facilities or create new recreation facilities. Potential land use impacts associated with the John Marsh State Historic Park are discussed above in Section 9(b).

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
|--|--------------------------------|--|------------------------------|-----------|

15. TRANSPORTATION/TRAFFIC. Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| (a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| (b) Exceed, either individually or cumulatively, a level of service standard established by the County congestion management agency for designated roads or highways? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Construction activities will generate approximately 15 daily vehicle trips over the four-month construction period. Construction vehicles will use county roads to reach the project site. This minor level of trips would not have a significant impact on traffic volumes or level of service on county roads, including Marsh Creek Road.

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| (c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

The proposed project would not affect air traffic patterns.

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| (d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (e) Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (f) Result in inadequate parking capacity? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

The project would not change the design of any existing roads. No road closures would be done during project construction and emergency access would not be affected. Parking for construction workers can be accommodated at the northern and southern staging areas and at the nearby Brentwood Terminal for construction workers. The project would not affect alternative transportation.

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|-------------------------------------|-------------------------------------|
| 16. UTILITIES AND SERVICE SYSTEMS. Would the project: | | | | |
| (a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| (c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| (e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| (g) Comply with federal, state, and local statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

A minor amount of water may be brought to the project site for dust control during construction; existing supplies are sufficient to provide this water. Construction workers will use contractor-supplied portable toilets, the wastewater from which will be taken off-site to a wastewater treatment facility for processing; adequate treatment capacity is available to accommodate this. Drilling muds will be contained in appropriate containers and removed from the project site for disposal at an appropriate facility. No long-term increase in demand for utilities would result from the project.

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
|--|--------------------------------|--|------------------------------|-----------|

17. MANDATORY FINDINGS OF SIGNIFICANCE:

- | | | | | |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|
| (a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|

With the mitigation measures described in Sections 4 and 5 above, the proposed project would not result in a significant impact to or loss of species or habitat, and would not eliminate important examples of California’s history or prehistory.

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| (b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Almost all project impacts are construction-related and temporary. Construction impacts to California tiger salamander would be mitigated by supporting restoration of off-site habitat. Any cultural artifacts found during construction would be curated. Implementation of the project will result in increased safety and improved aesthetics at Marsh Creek.

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| (c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

The project will increase the safety of the Line 131 pipeline. No adverse effects on humans would occur as a result of the project.

Appendix A
Biological Resources Technical Report

Biological Resources Technical Report for the Line 131 Class Change at Marsh Creek

Prepared for
Pacific Gas and Electric Company
Technical Project Services
3400 Crow Canyon Road
San Ramon, CA 94583

September 2007

CH2MHILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

Garcia and Associates
1 Saunders Avenue
San Anselmo, CA 94960
(415) 458-5803
(Job 482-9A)



Contents

| | | |
|------------|---|------------|
| 1.0 | Introduction..... | 1-1 |
| 2.0 | Setting..... | 2-1 |
| 3.0 | Study Methods..... | 3-1 |
| 3.1 | Pre-Field Research..... | 3-1 |
| 3.2 | Site Reconnaissance Surveys..... | 3-2 |
| 4.0 | Plant Communities and Wildlife Habitats..... | 4-1 |
| 4.1 | California Annual Grassland..... | 4-1 |
| 4.2 | Coastal and Valley Freshwater Marsh..... | 4-3 |
| 5.0 | Biological Resources..... | 5-1 |
| 5.1 | Plants..... | 5-1 |
| 5.2 | Wildlife..... | 5-11 |
| 6.0 | Wetlands and Waters of the U.S. | 6-1 |
| 7.0 | References..... | 7-1 |

Figures

| | | |
|----------|---|------|
| Figure 1 | Location Map..... | 2-1 |
| Figure 2 | Project Plan and Biological Resources..... | 2-2 |
| Figure 3 | California Natural Diversity Database Plant Occurrences..... | 5-10 |
| Figure 4 | California Natural Diversity Database Wildlife Occurrences..... | 5-14 |

Tables

| | | |
|---------|---|------|
| Table 1 | Special-Status Plant Species with Potential to Occur in the Work Area..... | 5-3 |
| Table 2 | Special-Status Animal Species with Potential to Occur in the Work Area..... | 5-15 |

Appendices

| | |
|-------------|--|
| Appendix A: | Project Description: Line 131 Class Change at Marsh Creek |
| Appendix B: | USFWS Species Letter and List |
| Appendix C: | Plants and Wildlife Observed During Spring 2007 Surveys, Work Area and Vicinity of Marsh Creek Line 131 Class Change |
| Appendix D: | Avoidance and Minimization Measures |

1.0 Introduction

Garcia and Associates (GANDA) conducted a site reconnaissance survey, rare plant protocol surveys, and assessment of biological resources at the work area for the Pacific Gas and Electric (PG&E) Line 131 class change project south of Brentwood in Contra Costa County, California. The purpose of this assessment was to characterize existing biological resource conditions on the property, identify sensitive habitats and special-status species that occur or potentially occur on the property, and evaluate potential constraints to the proposed project. This report describes our findings. A description of the project is included in Appendix A.

2.0 Setting

PG&E's Line 131 is a gas pipeline that currently bisects the Vineyards at Marsh Creek housing development project in Contra Costa County. The pipeline extends from the PG&E substation at Concord Avenue southward to Marsh Creek Reservoir within the Brentwood United States Geological Survey (USGS) 7.5-minute quadrangle, in Township 1N, Range 2E, in an unsectioned area of Los Meganos (Figure 1).

The work area considered in this assessment consists of approximately four acres of undeveloped ranch land that lie just outside the Vineyards at Marsh Creek housing development (Figure 2). The work area is defined by the construction impact area and a 30-foot buffer area around the construction areas and access roads. The majority of the work area lies on State Park property that is currently used for horse ranching and includes onsite occupied residences and the historic John Marsh house. This portion of the work area is bounded by Marsh Creek to the west, Marsh Creek Road to the east, and Marsh Creek Reservoir to the south (Figures 1 and 2). This area includes the southern boring area, the access road to the boring area, the pipeline removal staging area, and the access road to the pipeline removal staging area. The removal of the existing pipeline crossing Marsh Creek will occur within and on the banks of Marsh Creek.

The northern boring area is located north of Marsh Creek in the southernmost (and already disturbed) part of the Vineyards at Marsh Creek Project development. The pipe laydown area extends approximately 1,400 feet north of the northern boring area. The northern boring area and pipe laydown area occur within the project area addressed as part of the Vineyards at Marsh Creek EIR (RBF Consulting 2003).

Access roads from Marsh Creek currently exist in the work area and general vicinity. The Line 131 work area encompasses natural plant communities including California annual grassland and Coastal freshwater marsh habitat. At the time biological surveys for the Line 131 project took place, the northern boring area had been graded and the vegetation removed. The lands surrounding the work area consist largely of rolling hills and relatively flat grazing pastures dominated by annual grasslands typical of the region. The surrounding undeveloped property to the west, south, and east is part of Cowell Ranch State Park and currently designated as "regional open space."

The vegetation in the majority of the work area is California annual grassland (Sawyer and Keeler-Wolf 1997)¹. Some seasonal wetlands are present within this grassland near the southern access route. A small freshwater marsh exists in a drainage ditch south of the boring area and southern access route. The section of Marsh Creek within the pipe removal area has been delineated as an intermittent drainage.

¹ Holland 1986 refers to this community type as non-native grassland.

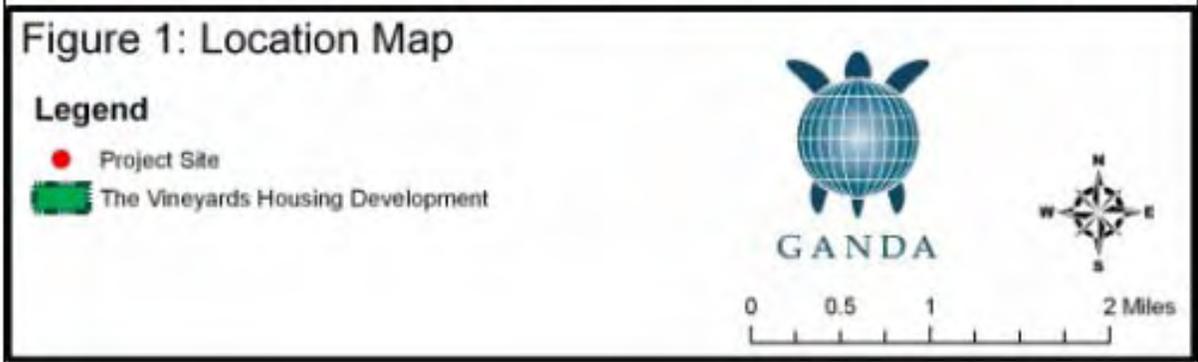
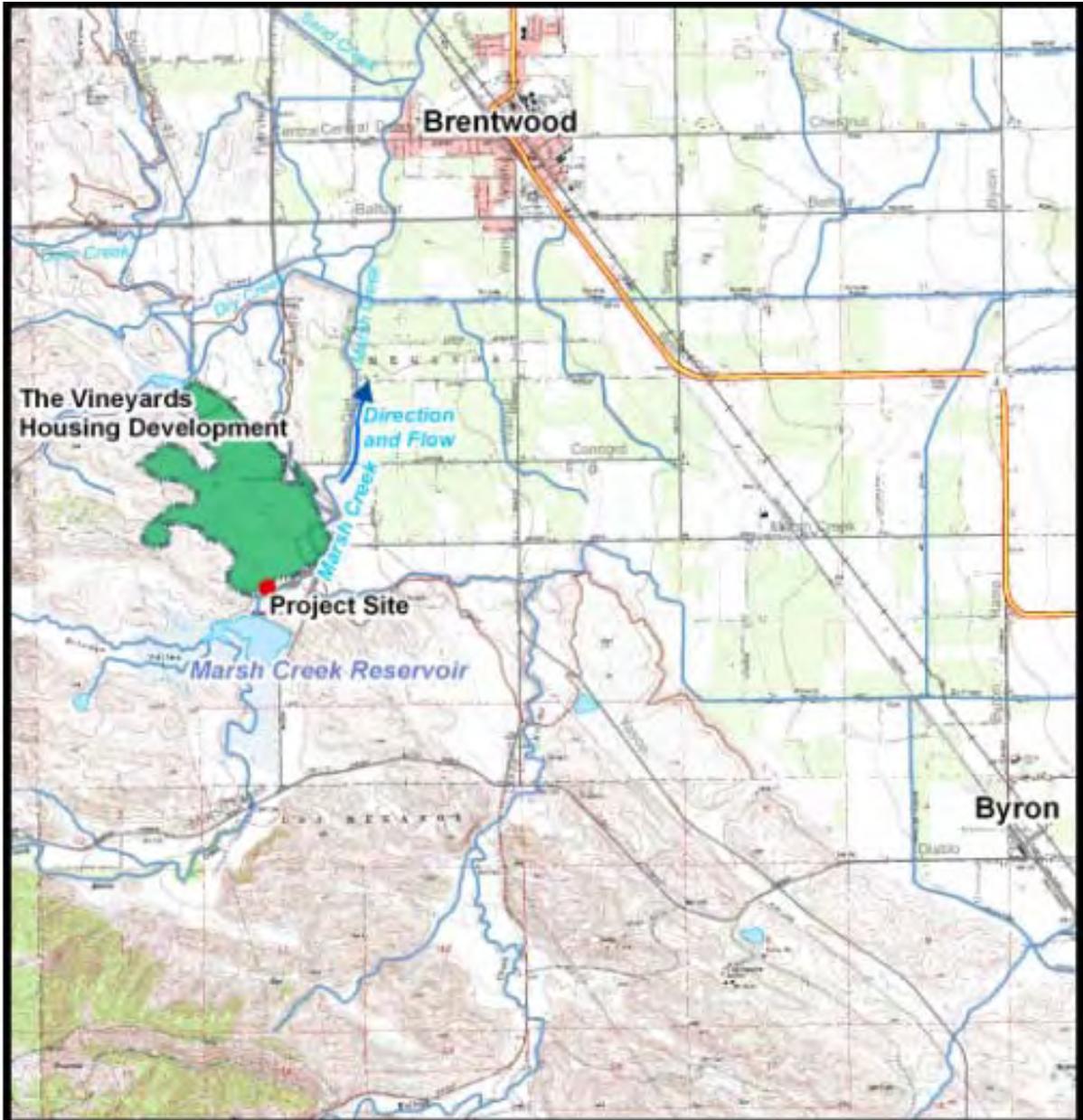


Figure 1. Location Map

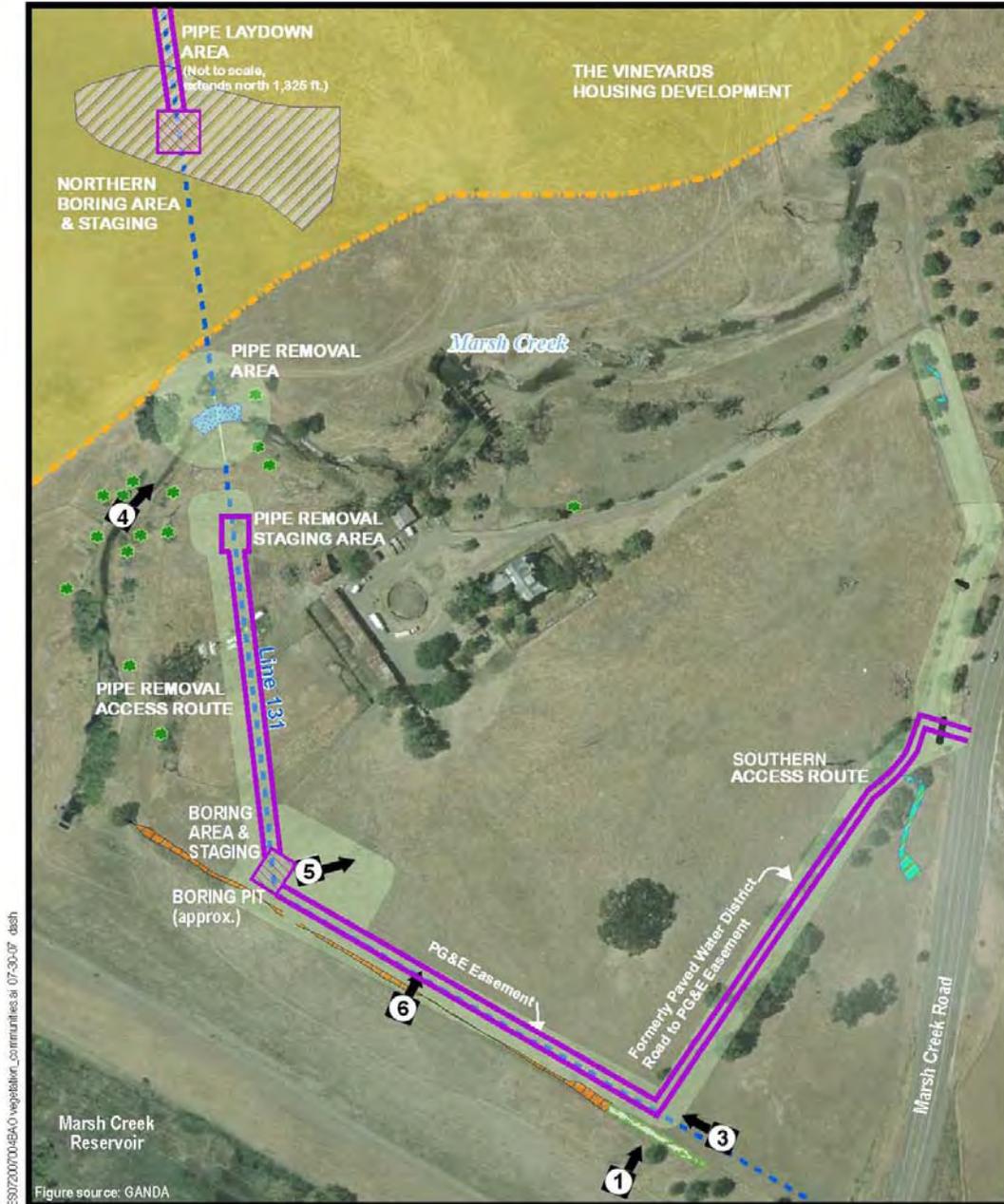
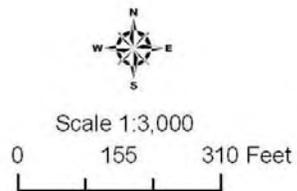


Figure 2: Vegetation Communities and Elderberry in the Work Area and Vicinity

Legend

- Impact area
- Excavation area
- Elderberry
- The Vineyards Housing Development
- Graded
- California annual grassland
- Photo View
- Culvert
- Ditch
- Freshwater marsh
- Seasonal wetlands
- Intermittent drainage



Note: Areas without a vegetation community shown were not included in the survey.

Figure 2. Project Plan and Biological Resources

3.0 Study Methods

3.1 Pre-Field Research

Existing information on biological resources in the vicinity of the property was reviewed prior to conducting the site reconnaissance survey. The purpose of the pre-field research was to identify sensitive resources such as special-status species, wetlands, streams and other potential biological resource constraints. The review included topographic maps and aerial photographs of the property, previous reports prepared on biological resources on and adjacent to the property, and information on special-status species' ranges and occurrence locations. Preliminary target lists were compiled of special-status plant and wildlife species known to occur, or with potential to occur, in the vicinity of the property. Sources reviewed included the following:

- California Natural Diversity Database (CNDDDB) (California Department of Fish and Game [CDFG] 2007a, CDFG 2004b) records search for the U.S. Geological Survey (USGS) 7.5-minute Brentwood quadrangle and the surrounding quadrangles within a 10-mile search radius (Antioch South, Tassajara, Byron Hot Springs, Diablo, Livermore, Altamont, Clifton Court Forebay, Woodward Island, Bouldin Island, Antioch North, and Jersey Island), as well as a CNDDDB overlay map for use with the Brentwood quadrangle.
- California Native Plant Society (CNPS) Electronic Inventory (CNPS 2007) for the Brentwood Quadrangle and eight surrounding quadrangles. The nine-quadrangle search is standard for pre-field rare plant surveys.
- CNPS *Inventory of Rare and Endangered Vascular Plants in California* (Tibor 2001).
- *The Jepson Manual* (Hickman 1993).
- The Jepson Interchange (Jepson Flora Project 2007).
- *Rare, Unusual, and Significant Plants of Alameda and Contra Costa Counties, seventh edition* (Lake 2004).
- Plant specimens at the herbarium at California State University, Chico, as well as online photographs (Calphotos 2007).
- California Wildlife Habitat Relationships (CWHR) version 8.0 personal computer program (CDFG 2002).
- *Vineyards at Marsh Creek and Annexation Sites Environmental Impact Report (EIR)* (RBF Consulting 2003).
- *Early Evaluation for the San Joaquin Kit Fox, Vineyards at Marsh Creek* (Sycamore Associates LLC 2003a).
- Burrowing owl nesting season focused survey for the vineyards at March Creek Project, Brentwood, Contra Costa County, California (Sycamore Associates LLC. 2003b).

On June 6, 2007, GANDA accessed the U.S. Fish and Wildlife Service (USFWS) Sacramento office website (USFWS 2007a) to produce an official list of federal endangered and threatened species that occur within the Brentwood and eight surrounding USGS 7.5 minute quads for the proposed project (Appendix B, Document Number 070604033450). This list covers the Woodward Island, Byron Hot Springs, Clifton Court Forebay, Antioch South, Tassajara, Jersey Island, Bouldin Island, and Antioch North USGS 7.5-minute quadrangles. The USFWS list is included in Appendix B.

3.2 Site Reconnaissance Surveys

Field surveys were conducted to determine whether special-status species and sensitive biological resources are present or could potentially be present within the project area. At the time of survey, the northern boring and staging/pipe laydown area and associated access (see Figure 2) had been previously graded and the vegetation removed for the Vineyards and Marsh Creek Project; therefore, this area was not included in the area surveyed for biological resources. In addition, the pipe removal access route had not been identified at the time of the April and May surveys and was not included in those surveys.

Special-status Plants and Vegetation Communities

The property was visited on April 20, May 21, and July 17, 2007 by GANDA botanist Samantha Hillaire. The project work area, other than the pipe removal access route and the area within the Vineyards at Marsh Creek project site, was surveyed on foot and all plant communities were examined and evaluated for their potential to support special-status plant species, as well as for their potential presence. The pipe removal access route, identified in early July, was included only in the July 17, 2007 survey. The preliminary special-status species list and potential for species occurrence was further refined based on visual assessment of habitat features and microhabitats and the suitability and quality of habitat observed on the property. All features of the work area that were identified and accessible at the time of survey were examined.

Plant surveys were floristic in nature and were seasonally timed to correspond with the blooming times of the taxa on the special-status plant list. Protocol-level surveys for special-status plants were completed for taxa that had moderate to high probability to occur in the work area because of suitable habitat and known presence on neighboring properties (CDFG 2007b, RBF Consulting 2003, Lake 2004). Plants observed during the field surveys are listed in Table C-1 in Appendix C.

All potential species were reviewed with herbarium records and/or photographs prior to survey. A nearby generally-located historical occurrence of round-leaved erodium (*Erodium macrophyllum*, CNDDDB occurrence #46) was not relocated at the time of the April and May surveys. Reference populations for three of the four species with moderate to high probability to occur onsite (San Joaquin spearscale [*Atriplex joaquiniana*, CNDDDB occurrence #43], crownscale [*A. coronata* var. *coronata*, known to be associated with San Joaquin spearscale occurrence #43], and big tarplant [*Blepharionia plumose*, CNDDDB occurrence #9]; see Table 1 below) were visited on July 17, 2007. Reference site visits for brittlescale were not attempted because nearby occurrences were located at an active construction site, but this species was reviewed from the herbarium records at California State University Chico prior

to survey. From the reference site visits and the herbarium records, timing of the July 17, 2007 survey was suitable to identify all four of these plant taxa.

During the April and May surveys, the work area and adjacent areas were also surveyed for potential wetlands and stream corridors, and the characteristics of any that were found were assessed.

The special-status species list and potential for species occurrence was further refined based on visual assessment of habitat features and microhabitats and the suitability and quality of habitat observed on the property.

Special-status Wildlife and Habitats

The project work area was visited on April 17 and May 21, 2007 by GANDA wildlife biologist Pierre Fidenci. The project site was surveyed on foot and all vegetation communities and wildlife habitats were examined and evaluated for their potential to support special-status wildlife species. No protocol-level surveys for special-status wildlife were performed during these visits. Wildlife observed during the surveys are listed in Table C-1 in Appendix C.

Following the field visits, the preliminary special-status species list was refined based on results of visual assessment of habitat features and microhabitats and the suitability and quality of habitat observed on the project site and vicinity.

4.0 Plant Communities and Wildlife Habitats

Two general plant communities and corresponding wildlife habitat types were identified in the project area: California grassland and freshwater marsh. The plant communities described in this section were based on the *Manual of California Vegetation* (Sawyer and Keeler-Wolf 1997) and *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), with some modifications to better describe the plant communities observed.

In the work area, some soils appear to be moderately alkaline. The most common soil type is Sorrento Silty Clay Loam. Sorrento soils are typically weakly acid to moderately alkaline and formed from alluvial weathering of sedimentary sources (NRCS 2007)². Soils in the vicinity of the eastern portion of the southern access route are described as Brentwood Clay Loam and Altamont Fontana Complex. Brentwood soils are moderately alkaline, are moderately well- to well-drained, and are also derived from sedimentary sources (NRCS 2007). Altamont Fontana series soils are weakly acid to moderately alkaline, generally well-drained, and are derived from sedimentary shale and sandstone sources (NRCS 2007).

4.1 California Annual Grassland

California annual grassland (Sawyer and Keeler-Wolf 1997)³ is an extensive habitat type generally found in open areas in valley and foothills throughout much of California (Holland 1986). This vegetation type is dominated by non-native annual grasses and weedy annual and perennial forbs, primarily of Mediterranean origin, that have replaced native perennial grasslands and scrub as a result of human disturbance. Scattered native wildflower species, representing remnants of the original vegetation, may also be common.

Characteristic non-native annual grasses commonly found on and near the work area include wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), wild barley (*Hordeum murinum* and *H. marinum* ssp. *gussoneanum*), and Italian ryegrass (*Lolium multiflorum*). Common non-native forbs include yellow star-thistle (*Centaurea solstitialis*), long-fruited stork's bill (*Erodium botrys*), red-stemmed filaree (*Erodium cicutarium*), bur-clover (*Medicago polymorpha*), wild radish (*Raphanus raphanistrum* and *R. sativa*), lamb's quarters (*Chenopodium album*), horehound (*Marrubium vulgare*), dwarf nettle (*Urtica urens*), Jim-hill mustard (*Hirshfeldia incana*), and vetch (*Vicia villosa*). Native species include common fiddleneck (*Amsinckia menziesii* var. *intermedia*) and common spikeweed (*Hemizonia pungens* ssp. *pungens*).

Seasonal wetlands occur on limited sediment deposits in an otherwise barren streambed within the incised channel of Marsh Creek. The plant species composition on these deposits includes grasses and forbs. Grass species include Bermuda-grass (*Cynodon dactylon*), annual

² Soils at the northern bore area are classified as Kimball Gravelly Clay Loam, but because this area was already graded at the time of this survey, no plant surveys took place at this area.

³ Holland 1986 refers to this community type as non-native grassland.

beardgrass (*Polypogon monspeliensis*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), and perennial ryegrass (*Lolium perenne*). Forbs in the area of Marsh Creek include curly dock (*Rumex crispus*), perennial pepperweed (*Lepidium latifolium*), and nettle-leaved goosefoot (*Chenopodium murale*). Marsh Creek was running with an estimated 3-6 inches of water during the April 20, 2007 survey, but only standing pools of 1-3 inches were present May 21, 2007. No water was present during the July 17, 2007 survey.

Seasonal wetlands occur at scattered locations within the non-native grassland community adjoining the paved portion of the southern access route. These seasonal wetlands are very shallow and none of the features held standing water during the April 20 or May 21, 2007 surveys. In these locations, the species mix is hydrophytic (tolerant of saturated soils), including native forbs such as small-flowered stalked popcorn-flower (*Plagiobothrys stipitatus* var. *micranthus*), rough-fruited popcorn-flower (*P. trachycarpus*), woolly marbles (*Psilocarpus brevissimus* var. *brevissimus*), and alkali-mallow (*Malvella leprosa*). Non-native hydrophytic species in these areas include little hop-clover (*Trifolium dubium*) and subterranean clover (*T. subterraneum*).

During the July 17, 2007 survey, a semi-permanent wetted area, with no hydrophytic vegetation and created by overflow from a small horse watering trough, was observed near the pipe removal access route. On a follow-up site visit on August 23, 2007, it was noted that the wetted area is subject to frequent, significant disturbance by the ranch horses and contained algae but no vegetation.

In proximity to Marsh Creek where the exposed section of gas line 131 is to be removed, occasional large valley oaks (*Quercus lobata*) and blue elderberry shrubs (*Sambucus mexicana*) are present. In the vicinity of the southern access route, blue oak (*Q. douglasii*) and Northern California black walnut (*Juglans hindsii* or *J. californica* var. *hindsii*) are present. The walnut trees appear to have been planted in rows along the paved portion of the southern access route.

Most of the project area south of Marsh Creek appears to be moderately to heavily disturbed by human activity and grazing. The southern boring and pipe staging area, pipe removal access route, and pipe removal staging area appear to be heavily grazed by horses. The land managers also appear to have cleared vegetation and created burn piles in and near the pipe removal staging area.

Grassland habitats, including native and non-native grasslands, attract reptiles and amphibians such as southern alligator lizard (*Elgaria multicarinata*), western fence lizard (*Sceloporus occidentalis*), and Pacific slender salamander (*Batrachoseps attenuatus*) which feed on invertebrates found within and beneath fallen logs in the vegetation community. This habitat also attracts seed-eating and insect-eating species of birds and mammals. California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), and western meadowlark (*Sturnella neglecta*) are a few seed-eaters that nest and forage in grasslands. Insect-eaters such as western scrub-jay (*Aphelocoma californica*), barn swallow (*Hirundo rustica*), and northern mockingbird (*Mimus polyglottos*) use the habitat for foraging only. Grasslands are important foraging grounds for insect-eating bat species as myotis (*Myotis* spp.) and pallid bat (*Antrozous pallidus*). A large number of other mammal species such as California vole (*Microtus californicus*), deer mouse (*Peromyscus maniculatus*), Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Spermophilus beecheyi*) and black-tailed

jackrabbit (*Lepus californicus*) also forage and nest within grasslands. Small rodents attract raptors such as barn owls (*Tyto alba*), which hunt at night, as well as day-hunting raptors such as red-tailed hawk (*Buteo jamaicensis*) and red-shouldered hawk (*Buteo lineatus*). Black-tailed deer (*Odocoileus hemionus californicus*) also use grassland for grazing. California ground squirrels, black-tailed jackrabbits, and foraging bird species have been observed at the project site.

4.2 Coastal and Valley Freshwater Marsh

A small section of freshwater marsh community (Holland 1986) occurs immediately south of the southern access route in a man-made ditch⁴. Only the westernmost section of this ditch held water on the April 20, May 21, and July 17, 2007 survey dates; this westernmost section is the only portion of the ditch to contain freshwater marsh. This community type is typical of areas that have prolonged saturation and/or permanently flooded conditions with fresh water and is often dominated by dense canopy emergent monocots that are fairly tall (4-5 meters). In the westernmost section of the man-made ditch south of the southern access route, common species are mosquito fern (*Azolla* sp.), spikerush (*Eleocharis macrostachya*), cattails (*Typha latifolia*), saltmarsh bulrush (*Scirpus maritimus*), hardstem bulrush (*Scirpus acutus*), curly dock, and annual beardgrass. At this site, the emergent vegetation was approximately 4-5 feet high and provided canopy cover of approximately 75 percent. Although this feature is small and shallow, it provides minimally suitable habitat for native plant species that require freshwater marsh habitat.

⁴ The vegetation in this marsh is not categorized by any series in the *Manual of California Vegetation* (Sawyer and Keeler-Wolf 1997). Instead this area contains components of three series: cattail, spikerush, and mosquito fern series.

5.0 Biological Resources

For the purposes of this report, special-status species are defined as species in one or more of the following categories:

- plants and animals listed, proposed, or candidates for listing as threatened or endangered under the federal Endangered Species Act;
- plants and animals listed or candidates for listing as threatened or endangered by the State of California under the California Endangered Species Act (CDFG 2007b, CDFG 2004a);
- plants designated as rare under the California Native Plant Protection Act;
- plants rated as 1B or 2 in the CNPS *Inventory of Rare and Endangered Plants of California* (CNPS 2007); or
- plants listed as 3 or 4 under CNPS *Inventory of Rare and Endangered Plants of California* (CNPS 2007), which were also considered if they were known from surveys of the Vineyards at Marsh Creek site (RFB Consulting 2003), or had been observed the Marsh Creek/Lone Tree Valley Area from *Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties* (Lake 2004).

Plant and animal species that are federally- or state-listed as endangered or threatened are legally protected under federal and state endangered species legislation and must be considered during the California Environmental Quality Act (CEQA) review process. Species designated with other special-status by resource agencies are not afforded legal protection under endangered species legislation; however, they generally receive consideration as “endangered, rare or threatened species” under CEQA (CEQA Guidelines Section 15380). For plants, this is generally interpreted to include all species on lists 1B and 2 of the CNPS Inventory (Tibor 2001). Some species on lists 3 and 4 of the CNPS Inventory may also be considered under CEQA.

5.1 Plants

Forty-nine special-status plant taxa were identified with potential to occur within the range of the project area (Table 1), based on the pre-field review including primary and secondary sources of documented locations for these species (CDFG 2007a, RFB Consulting 2003, Lake 2004, and CNPS 2007). This list includes seven federal- and/or state-listed taxa and one state rare taxon. All forty-nine taxa have CNPS status; forty-two are on CNPS Lists 1 or 2 (see Table 1 for status definitions). The work area is located within the known range of each of the forty-nine taxa included in Table 1.

Of these forty-nine taxa, thirty-eight have some potential to occur because at least marginally suitable habitat exists for these taxa within the work area. These taxa include the large-flowered fiddleneck (*Amsinckia grandiflora*, federally and state endangered), Delta button-celery (*Eryngium racemosum*, state endangered), Contra Costa goldfields (*Lasthenia*

conjugens, federally endangered), and Mason's lilaepsis (*Lilaeopsis masonii*, state rare). However, none of these plants was observed during surveys.

Suitable habitat does not exist within the work area for eleven of the taxa in Table 1 and these are not expected onsite. These taxa include the State and/or federally listed taxa soft bird's-beak (*Cordylanthus mollis* ssp. *mollis*, federally endangered and State rare), Contra Costa wallflower (*Erysimum capitatum* ssp. *angustatum*, federally and State endangered), Colusa grass (*Neostapfia colusana*, federally threatened and State endangered), and Antioch Dunes evening-primrose (*Oenothera deltoides* ssp. *howellii*, federally and State endangered).

No special-status plant taxa were identified within the project area based on a search of CNDDDB (Figure 3) and plant surveys. Protocol surveys were completed for species with moderate to high probability of occurrence. The probability for occurrence within the work area was determined based the presence of suitable habitat within the work area and/or reported occurrences on neighboring properties (CDFG 2007a, RBF Consulting 2003). Taxa reported from nearby locations include current CNDDDB occurrences of San Joaquin sparscale, brittlescale, crownscale, and big tarplant. The project area also lies on the edge of a known general CNDDDB location of round-leaved filaree that was not relocated during surveys. Based on this information, seasonally-timed surveys were performed in April and May and protocol surveys were performed in July. These surveys were appropriately timed to identify all taxa with probability for occurrence within the work area. The pipe removal access road route, which was identified late in the survey season, was only visited during the July surveys.

Medium-sized California black walnut trees occur adjacent to the paved portion of the southern access route, as well as along the farm road to the John Marsh house; the farm road is outside of the work area. This tree taxon is rated as CNPS List 1B.1 when found in native stands, of which there are few remaining in California. However, the trees near the work area appear to have been planted in rows to border the roadways. This taxon has been widely used throughout northern California as a rootstock for the agricultural crop English walnut (*Juglans regia*), and has now become naturalized throughout northern California. Occurrences that are in agricultural settings or are the result of secondary growth are not typically addressed under CEQA. This species would likely not be given consideration under CEQA in this setting.

Table C-1 in Appendix C contains a list of all plant taxa identified in and around the work areas during spring 2007 surveys.

TABLE 1
 Special-Status Plant Species with Potential to Occur in the Work Area

| Common and Scientific Names | Habitat and Phenology | Federal and/or State Status* | Potential for Occurrence |
|---|--|---------------------------------|---|
| large-flowered fiddleneck <i>Amsinckia grandiflora</i> | Cismontane woodland Valley and foothill grassland Blooms April-May | FE, CE CNPS List 1B.1 | Low to moderate. Minimal amount of disturbed suitable habitat present. Only three natural occurrences known; these are located >5 miles away. Species found on steeper south- or west-facing slopes. Not observed during surveys. |
| Mt. Diablo manzanita <i>Arctostaphylos auriculata</i> | Chaparral with sandstone substrate Perennial shrub, blooms January – March | CNPS List 1B.3 | None. CNDDDB occurrence in 1988 from 4.9 miles away, but no suitable habitat present. No plants observed during surveys. |
| Contra Costa manzanita <i>Arctostaphylos manzanita</i> ssp. <i>laevigata</i> | Chaparral with rocky substrate Perennial shrub, blooms January – Feb. | CNPS List 1B.2 | None. No CNDDDB records from within 5 miles, but known from Marsh Creek/Lone Tree Road area (Lake 2004). No suitable habitat present. No plants observed during surveys. |
| Suisun Marsh aster <i>Aster lentus</i> | Brackish and freshwater marshes and swamps Perennial herb blooms from May-November | CNPS List 1B.2 | Low. Small amount of marginal suitable habitat present. Not known from within 5 miles. No plants observed during surveys. |
| alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i> | Playas Valley and foothill grassland (adobe clay) Vernal pools /alkaline Blooms March-June | CNPS List 1B.2 | Low. Small amount of minimally suitable habitat present. Not known from within 5 miles. No plants observed during surveys. |
| heartscale <i>Atriplex cordulata</i> | Chenopod scrub Meadows and seeps Valley and foothill grassland (sandy)/saline or alkaline Blooms April-October | CNPS List 1B.2 | Low. Marginally suitable vegetation community present, but sandy substrate lacking. Not known from within 5 miles. No plants observed during surveys. |
| crownscale <i>Atriplex coronata</i> var. <i>coronata</i> | Chenopod scrub Valley and foothill grassland Vernal pools /alkaline Blooms March- October. | CNPS List 4.2 | Moderate to high. Disturbed suitable habitat present. Recorded from adjacent Vineyards at Marsh Creek property in 2003 (RBF Consulting 2003). Known from Marsh Creek/Lone Tree Road area (Lake 2004). No plants observed during surveys. |
| brittlescale <i>Atriplex depressa</i> | Chenopod scrub Meadows and seeps Playas Valley and foothill grassland Vernal pools /alkaline, clay Blooms May-October | CNPS List 1B.2 | Moderate to high. Disturbed suitable habitat present. Known from six CNDDDB occurrences between 1.9 and 4.8 miles away, from 1988 and 1990 (CDFG 2007a). No plants observed during surveys. |

TABLE 1
 Special-Status Plant Species with Potential to Occur in the Work Area

| Common and Scientific Names | Habitat and Phenology | Federal and/or State Status* | Potential for Occurrence |
|--|---|---------------------------------|--|
| San Joaquin spearscale <i>Atriplex joaquiniana</i> | Chenopod scrub Meadows and seeps Playas Valley and foothill grassland /alkaline Blooms April-October | CNPS List 1B.2 | Moderate to high. Disturbed suitable habitat present. Known from eleven CNDDDB occurrences within 5 miles found 1988-2005; the closest is 0.8 miles away (CDFG 2007a). Recorded from adjacent Vineyards at Marsh Creek property in 2003. No plants observed during surveys. |
| big tarplant <i>Blepharizonia plumosa</i> | Valley and foothill grassland Blooms July-October | CNPS List 1B.1 | Moderate to high. Degraded habitat present. Known from ten CNDDDB occurrences within 5 miles with nine of these found between 1994 and 2006. The closest is 0.5 miles away. No plants observed during surveys. |
| Mt. Diablo fairy-lantern <i>Calochortus pulchellus</i> | Chaparral Cismontane woodland Riparian woodland Valley and foothill grassland Blooms April-June | CNPS List 1B.2 | Low to moderate. Disturbed marginally suitable habitat present. One CNDDDB occurrence (from 1992) recorded from 4.4 miles away (CDFG 2007a). Not observed during surveys. |
| bristly sedge <i>Carex comosa</i> | Coastal prairie Marshes and swamps (lake margins) Valley and foothill grassland Perennial herb blooms from May-September | CNPS List 2.1 | Low. Only small amount of marginally suitable habitat present. Not known from within 5 miles. No plants observed during surveys. |
| Congdon's tarplant <i>Centromadia parryi</i> ssp. <i>congdonii</i> | Valley and foothill grassland (alkaline) Blooms generally between May-October | CNPS List 1B.2 | Moderate. Disturbed suitable habitat present. Not known from within 5 miles. No plants observed during surveys. |
| small-flowered morning-glory <i>Convolvulus simulans</i> | Chaparral (openings) Coastal scrub Valley and foothill grassland /clay, serpentinite seeps Blooms March-July | CNPS List 4.2 | Low. Marginally suitable habitat present, but preferred serpentine habitat absent. Known from the Marsh Creek/Lone Tree Road area (Lake 2004) but not seen in the county since 1907. Presumed extirpated from the area. Not observed during surveys. |
| soft bird's-beak <i>Cordylanthus mollis</i> ssp. <i>mollis</i> | Marshes and swamps (coastal salt) Blooms July-November | FE, CR CNPS List 1B.2 | None. Not known from within 5 miles. Suitable habitat is not present, and this taxon was not observed during surveys. This taxon is not expected to occur. |

TABLE 1
 Special-Status Plant Species with Potential to Occur in the Work Area

| Common and Scientific Names | Habitat and Phenology | Federal and/or State Status* | Potential for Occurrence |
|--|--|------------------------------|--|
| Hoover's cryptantha <i>Cryptantha hooveri</i> | Inland dunes Valley and foothill grassland (sandy) Blooms April-May | CNPS List 1A | Very low. Marginally suitable grassland community present but no preferred sandy substrate. Not known from within 5 miles. Species presumed extirpated from the state. Two records exist one from 1908 and one from 1983. No plants observed during surveys. |
| recurved larkspur <i>Delphinium recurvatum</i> | Chenopod scrub Cismontane woodland Valley and foothill grassland/alkaline Perennial herb blooms March-June. | CNPS List 1B.2 | Low to moderate. Disturbed marginally suitable habitat present. Not known from within 5 miles. No plants observed during surveys. |
| dwarf downingia <i>Downingia pusilla</i> | Valley and foothill grassland (mesic) Vernal pools Blooms March-May | CNPS List 2.2 | Low. Small amount of marginally suitable habitat present. Not known from within 5 miles. No plants observed during surveys. |
| Mt. Diablo buckwheat <i>Eriogonum truncatum</i> | Chaparral Coastal scrub Valley and foothill grassland/sandy Generally blooms April-December | CNPS List 1B.1 | Low. Disturbed suitable community present but no preferred sandy substrate. Historical occurrences in the Marsh Creek area from 1903 and 1934 (CDFG 2007a, Lake 2004); 1934 occurrence is 2.7 miles away. Presumed extirpated from this area. No plants observed during surveys. |
| round-leaved filaree <i>Erodium (California) macrophylla</i> | Cismontane woodland Valley and foothill grassland /clay Blooms March-May | CNPS List 1B.1 | Moderate. Somewhat suitable habitat present. Known from five CNDDB occurrences within 5 miles. Closest occurrence is a non-specific area that encompasses part of the work area, but plant not seen there since 1929. Three current occurrences (1994-2005) between 4.3-4.8 miles away (CDFG 2007a). No plants observed during surveys. |
| Delta button-celery <i>Eryngium racemosum</i> | Riparian scrub (vernally mesic clay depressions) Blooms from June to September. | CE CNPS List 1B.1 | Very low. Small amount of very marginal suitable habitat in incised channel of Marsh Creek. No occurrences are known within 5 miles. Not observed during surveys. |
| Contra Costa wallflower <i>Erysimum capitatum</i> ssp. <i>angustatum</i> | Inland dunes Perennial herb blooms March-July. | CE, FE CNPS List 1B.1 | None. No occurrences within 5 miles. Not observed during surveys. No suitable habitat. Taxon not expected to occur in the project area. |

TABLE 1
 Special-Status Plant Species with Potential to Occur in the Work Area

| Common and Scientific Names | Habitat and Phenology | Federal and/or State Status* | Potential for Occurrence |
|--|---|------------------------------|--|
| diamond-petaled California poppy <i>Eschscholzia rhombipetala</i> | Valley and foothill grassland (alkaline, clay) Blooms March-April | CNPS List 1B.1 | Low to moderate. Disturbed suitable habitat present. One occurrence 2.5 miles away, thought to be extirpated (not seen since 1888 (CDFG 2007a)). Not observed during surveys. No plants observed during surveys. |
| stinkbells <i>Fritillaria agrestis</i> | Chaparral Cismontane woodland Pinyon and juniper woodland Valley and foothill grassland clay, sometimes serpentinite Blooms March-June | CNPS List 4.2 | Low to moderate. Disturbed moderately suitable habitat present; no serpentine habitat present. Recorded from adjacent Vineyards at Marsh Creek property in 2003 (RBF Consulting 2003). Not observed during surveys. |
| fragrant fritillary <i>Fritillaria liliacea</i> | Cismontane woodland Coastal prairie Coastal scrub Valley and foothill grassland /often serpentinite Blooms February-April | CNPS List 1B.2 | Very low. Only marginally suitable habitat present. No preferred serpentine habitat present. Not known from within 5 miles. Not observed during surveys. |
| serpentine bedstraw <i>Galium andrewsii</i> ssp. <i>gatense</i> | Chaparral Cismontane woodland Lower montane coniferous forest /serpentinite, rocky Blooms April-July | CNPS List 4.2 | None. Known from Marsh Creek/Lone Tree Road area (Lake 2004), but no suitable habitat present. Not observed during surveys. |
| Diablo helianthella <i>Helianthella castanea</i> | Broadleafed upland forest Chaparral Cismontane woodland Coastal scrub Riparian woodland Valley and foothill grassland Blooms March-June | CNPS List 1B.2 | Moderate. Disturbed suitable habitat present. Four CNDDDB occurrences within 5 miles; these from 1996-2003. Closest is 2.0 miles away. Not observed during surveys. |
| Brewer's western flax <i>Hesperolinon breweri</i> | Chaparral Cismontane woodland Valley and foothill grassland/ usually serpentinite Blooms May-July | CNPS List 1B.2 | Low. Disturbed marginally suitable community present, but no preferred serpentine habitat. Three CNDDDB occurrences within 5 miles found between 1988-1991. Closest is 4.2 miles away. Not observed during surveys. |

TABLE 1
 Special-Status Plant Species with Potential to Occur in the Work Area

| Common and Scientific Names | Habitat and Phenology | Federal and/or State Status* | Potential for Occurrence |
|---|--|---------------------------------|--|
| hogwallow starfish <i>Hesperex caulescens</i> | Valley and foothill grassland (mesic, clay) Vernal pools (shallow) Blooms March-June | CNPS List 4.2 | Low to Moderate. Small amounts of marginally suitable habitat present. Recorded from adjacent Vineyards at Marsh Creek property in 2003 (RBF Consulting 2003), and known from Marsh Creek/Lone Tree Road area (Lake 2004). Not observed during surveys. |
| rose-mallow <i>Hibiscus lasiocarpus</i> | Freshwater marshes and swamps Blooms June-September | CNPS List 2.2 | Low. Small amount of marginal suitable habitat present. Not known from within 5 miles. No plants observed during surveys. |
| Carquinez goldenbush <i>Isocoma arguta</i> | Valley and foothill grassland (alkaline) Perennial shrub blooms August-September | CNPS List 1B.1 | Low to moderate. Disturbed suitable habitat present. Not known from within 5 miles. Unknown dates of observation in county and presumed extirpated (Lake 2004). Not observed during surveys. |
| California black walnut <i>Juglans californica</i> var. <i>hindsii</i> | Riparian forest Riparian woodland Tree blooms April-May. | CNPS List 1B.1 in native stands | Observed onsite. Apparently planted in rows bordering existing portions of access routes. Protections/considerations typically not applied to trees in a planted setting. |
| Contra Costa goldfields <i>Lasthenia conjugens</i> | Cismontane woodland Playas (alkaline) Valley and foothill grassland Vernal pools/mesic Blooms March-June | FE CNPS List 1B.1 | Low. Small amount of minimally suitable habitat present. Not known from within 5 miles. This species is known from fewer than fifteen occurrences. Not observed during surveys. |
| Delta tule pea <i>Lathyrus jepsonii</i> var. <i>jepsonii</i> | Freshwater and brackish marshes and swamps Perennial herb blooms May-July. | CNPS List 1B.2 | Low. Small amount of marginally suitable habitat present. Not known from within 5 miles. Not observed during surveys. |
| Mason's lilaepsis <i>Lilaeopsis masonii</i> | Brackish or freshwater marshes and swamps Riparian scrub Blooms April-November | CR CNPS List 1B.1 | Low. Small amount of marginally suitable habitat present. Not known from within 5 miles. Not observed during surveys. |
| Delta mudwort <i>Limosella subulata</i> | Marshes and swamps Perennial herb blooms May through August. | CNPS List 2.1 | Low. Small amount of marginally suitable habitat present. Not known from within 5 miles. Not observed during surveys. |
| showy madia <i>Madia radiata</i> | Cismontane woodland Valley and foothill grassland Blooms March-May. | CNPS List 1B.1 | Low to moderate. Disturbed suitable habitat present. Historical CNDDB occurrence 4.1 miles away from 1938. Not seen in the county since 1941 (Lake 2004). Not observed during surveys. |

TABLE 1
 Special-Status Plant Species with Potential to Occur in the Work Area

| Common and Scientific Names | Habitat and Phenology | Federal and/or State Status* | Potential for Occurrence |
|--|--|---------------------------------|---|
| Hall's bush mallow <i>Malacothamnus hallii</i> | Chaparral Coastal scrub Perennial evergreen shrub blooms May through September. | CNPS List 1B.2 | None. No suitable habitat present. Not known from within 5 miles and not observed during surveys. |
| San Antonio Hills monardella <i>Monardella antonina</i> ssp. <i>antonina</i> | Chaparral Cismontane woodland Perennial herb blooms June-August. | CNPS List 3 | None. No suitable habitat present. Not known from within 5 miles and not observed during surveys. |
| cotula navarretia <i>Navarretia cotulifolia</i> | Chaparral Cismontane woodland Valley and foothill grassland/adobe Blooms May-June | CNPS List 4.2 | Low. Disturbed marginally suitable habitat present, probably no adobe clay present. Known from Marsh Creek/Lone Tree Valley area (Lake 2004). Not observed during surveys. |
| Colusa grass <i>Neostapfia colusana</i> | Adobe vernal pools Blooms May-August | CE, FT CNPS List 1B.1 | None. No suitable vernal pool habitat present. Not known from within 5 miles. Not observed during surveys. This species is not expected to occur. |
| Antioch Dunes evening-primrose <i>Oenothera deltoides</i> ssp. <i>howellii</i> | Inland dunes Perennial herb blooms March-September | CE, FE CNPS List 1B.1 | None. No occurrences within 5 miles. Only known from three dune occurrences. Not observed during surveys. No suitable habitat. Taxon not expected to occur in the project area. |
| bearded popcorn-flower <i>Plagiobothrys hystriculus</i> | Valley and foothill grassland (mesic) Vernal pools margins/often vernal swales Blooms April-May | CNPS List 1B.1 | Low. Small amount of marginally suitable habitat present. Not known within 5 miles. Thought to be extinct, but rediscovered in Montezuma Hills in 2005 (CNPS 2007). Not observed during surveys. |
| eel-grass pondweed <i>Potamogeton zosteriformis</i> | Freshwater marshes and swamps Blooms June-July | CNPS List 2.2 | Low. Small amount of marginally suitable habitat present. Not known from within 5 miles. Not seen in the county since 1949 (Lake 2004). No plants observed during surveys. |
| marsh skullcap <i>Scutellaria galericulata</i> | Lower montane coniferous forest Meadows and seeps (mesic) Marshes and swamps Perennial herb blooms June-September. | CNPS List 2.2 | Low. Small amount of marginally suitable habitat present. Not known from within 5 miles. Not observed during surveys. |

TABLE 1
 Special-Status Plant Species with Potential to Occur in the Work Area

| Common and Scientific Names | Habitat and Phenology | Federal and/or State Status* | Potential for Occurrence |
|---|---|------------------------------|---|
| blue skullcap <i>Scutellaria lateriflora</i> | Meadows and seeps (mesic) Marshes and swamps Perennial herb blooms July-September | CNPS List 2.2 | Low. Small amount of marginally suitable habitat present. Not known from within 5 miles. Not observed during surveys. |
| rayless ragwort <i>Senecio aphanactis</i> | Chaparral Cismontane woodland Coastal scrub /alkaline Blooms January-April | CNPS List 2.2 | None. Suitable habitat not present. Not known from within 5 miles. Not observed during surveys. |
| caper-fruited tropidocarpum <i>Tropidocarpum capparideum</i> | Valley and foothill grassland (alkaline hills). Blooms March-April | CNPS List 1B.1 | Low. Marginally suitable habitat present. Historical CNDDB occurrence 3.9 miles away last updated in 1979. Not seen in the county since 1981 (Lake 2004). No plants observed during surveys. |
| oval-leaved viburnum <i>Viburnum ellipticum</i> | Chaparral Cismontane woodland Lower montane coniferous forest Perennial shrub blooms May-June | CNPS List 2.3 | None. No suitable habitat present. Not known from within 5 miles. Not observed during surveys. |

*Status Codes

FE = Listed as Endangered by the Federal Government
 FT = Listed as Threatened by the Federal Government
 CE = Listed as Endangered by the State of California
 CT = Listed as Threatened by the State of California
 CR = Considered Rare by the State of California

CNPS Lists

1A = Thought to be extinct in California
 1B = Eligible for State listing, mandatory CEQA review
 2 = Eligible for State listing, not rare outside California, mandatory CEQA review
 3 = Review list, more information needed, strongly recommended for CEQA review
 4 = Watch list, strongly recommended for CEQA review

CNPS Extension Codes

1 = seriously endangered in California
 2 = fairly endangered in California
 3 = not very endangered in California

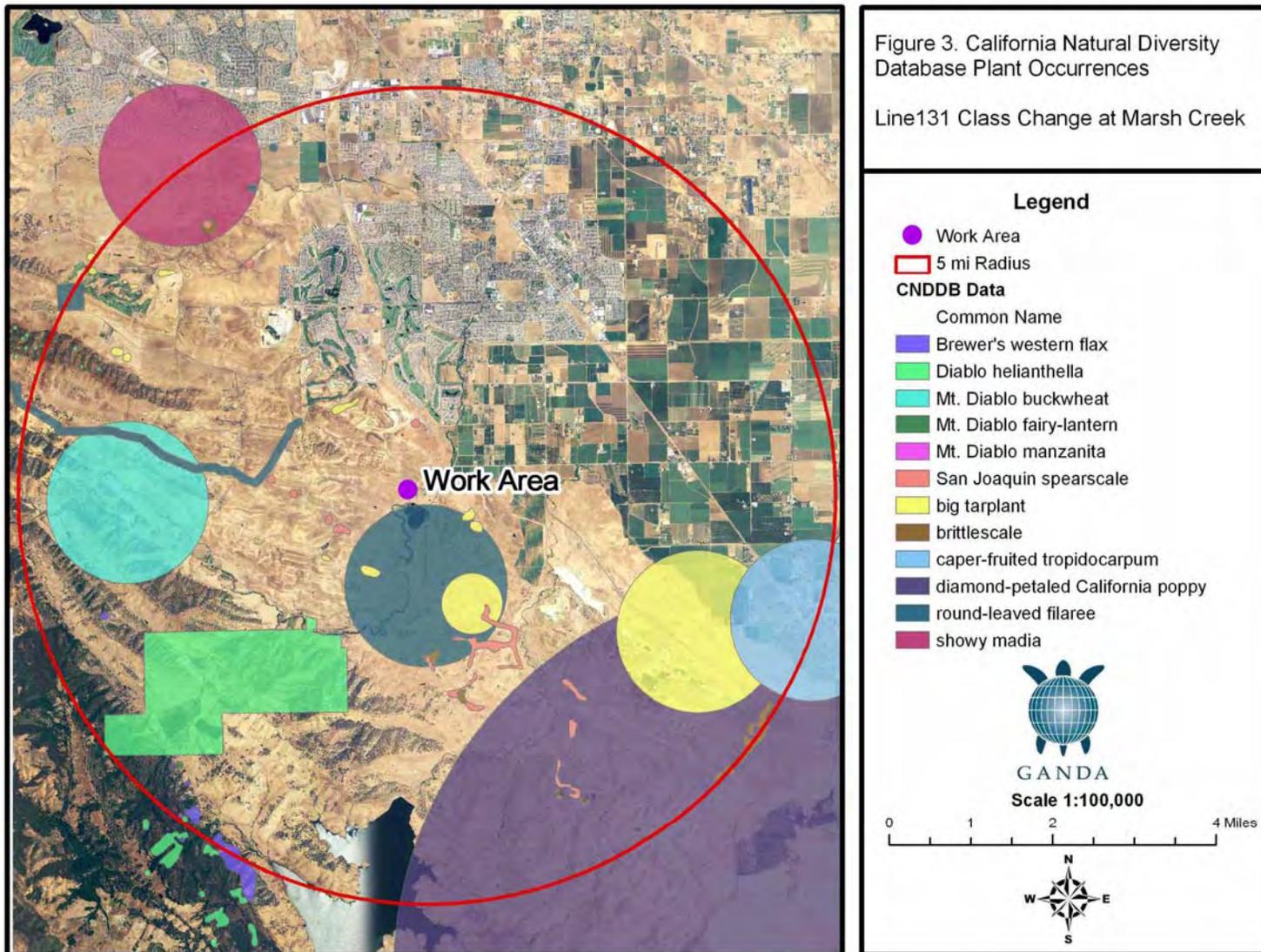


Figure 3. California Natural Diversity Database Plant Occurrences

5.2 Wildlife

During site visits conducted on April 17 and May 21, 2007, GANDA wildlife biologist Pierre Fidenci observed the following wildlife species. These species are also listed in Table C-1 in Appendix C.

- bullfrogs (*Rana catesbeiana*) including numerous second-year tadpoles along Marsh Creek and the intermittent drainage;
- one Western pond turtle (*Actinemys marmorata*) at Marsh Creek Reservoir;
- one racer (*Coluber constrictor*) within the work area;
- several California ground squirrels;
- a pair of Swainson's hawk (*Buteo swainsoni*) foraging and perching within the work area; and
- several red-winged blackbirds (*Agelaius phoeniceus*) at Marsh Creek Reservoir.

Based on the pre-field review and site assessment, 26 special-status federal and state wildlife species were identified as having at least a low potential to occur on the project site and vicinity (see Figure 4 and Table 2). The following describes these special-status species and their potential to occur within the various habitats located on and directly adjacent to the project work areas.

Crustaceans

Vernal pool fairy shrimp (*Branchinecta lynchi*) are federally listed as threatened and inhabit rain-filled ephemeral pools that form in depressions, usually in grassland habitats (Eng et al. 1990). Pools must pond long enough for the species to complete its life cycle. Pools occupied by vernal pool fairy shrimp tend to have grass or mud bottoms and clear to tea-colored water and are often basalt flow depression pools in unplowed grasslands. Water characteristics, such as alkalinity, total dissolved solids, and pH, are important factors in determining the distribution of fairy shrimp (Eriksen and Belk 1999). Vernal pool fairy shrimp also occur in other wetlands that provide habitat characteristics similar to those of vernal pools; these other wetlands include alkaline rain-pools, ephemeral drainages, rock outcrop pools, ditches, stream oxbows, sock ponds, vernal swales, and some seasonal wetlands. Occupied habitat ranges in size from 8.9 ft² to large vernal pools up to 11 acres; the potential ponding depth of occupied habitat ranges from 1 to 48 inches (USFWS 2003).

Vernal pool fairy shrimp have been observed in artificial depressions and drainages where water ponds for a sufficient duration (3 to 4 weeks). Examples of such areas include roadside ditches and ruts left behind by off-highway vehicles or other heavy equipment. Soil compaction resulting from construction activity can sometimes create an artificial hardpan, or restrictive layer, that allows water to pond and form suitable habitat for fairy shrimp. Vernal pool fairy shrimp are omnivorous filter feeders that indiscriminately filter particles of the appropriate size from their environment. Diet consists of bacteria, plant, and animal particles, including suspended unicellular algae and metazoans (Eriksen and Belk 1999).

The longhorn fairy shrimp (*Branchinecta longiantenna*), federally listed as an endangered species, is a small crustacean that ranges in size from 0.5 to 0.8 inches long. They have delicate elongate bodies, large stalked compound eyes, no carapaces, and eleven pairs of swimming legs. They glide gracefully upside down, swimming by beating their legs in a complex, wavelike movement that passes from front to back. Fairy shrimp feed on algae, bacteria, protozoa, rotifers and bits of detritus.

Longhorn fairy shrimp inhabit clear to rather turbid vernal pools. These include clear-water depressions in sandstone outcroppings near Tracy, grass-bottomed pools in Merced County and claypan pools around Soda Lake in San Luis Obispo County. Longhorn fairy shrimp have been collected from late December to late April (Eriksen and Belk 1999). Hatching can begin within the same week that a pool starts to fill. Average time to maturity is forty-three days (Eriksen and Belk 1999).

The longhorn fairy shrimp is known only from disjunct populations along the eastern margin of the central Coast Range from Concord in Contra Costa County south to Soda Lake in San Luis Obispo County.

The work area does not fall within critical habitat designated for vernal pool fairy shrimp or longhorn fairy shrimp (USFWS 2006 and USFWS 2002). Vernal pool fairy shrimp and California linderiella (*Linderiella occidentalis*) were identified in the vicinity of the work area, just north of Marsh Creek in seasonal wetlands previously identified in connection with the Vineyards at Marsh Creek project (Zentner and Zentner 2002). Surveys of standing water were conducted during the 1996-97 and 1997-98 wet seasons by Entomological Consulting Services. The surveys did not include the PG&E work area addressed in this report (Entomological Consulting Services 1998, 2003). These ponds are no longer present since this area has now been graded and is under development.

Suitable wetland areas also are located adjacent to the proposed southern access route (Figure 2). These areas could provide standing water with hydroperiod of at least three to four weeks duration. Other undefined small ditches and ruts left behind by off-highway vehicles or other heavy equipment could also provide suitable habitat.

While protocol surveys were not conducted, the vernal pool fairy shrimp has a moderate potential to occur in the work area based on the presence of suitable habitat and the close proximity of known occurrences. However, construction vehicles will use the paved southern access route for transit only and impacts to adjacent wetlands are not expected to occur. No suitable habitat for listed branchiopods is present within the areas of temporary impact, including the boring area, staging and laydown areas, pipe removal area and pipe removal staging areas. With the implementation of avoidance measures listed in Appendix D, the project is not likely to adversely affect listed branchiopods.

Insects

The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*, federal threatened) is a medium-sized (about 0.8 inches long) beetle. The forewings of the female are dark metallic green with red margins, whereas those of the male are primarily red with dark green spots. This beetle is associated with elderberry shrubs and trees (*Sambucus* spp.) in California's Central Valley during its entire life cycle. The adults emerge from pupation inside the wood of these trees in the spring as their flowers begin to open. The exit holes made by the emerging adults are distinctive small oval openings. Often these holes are the

only clue that the beetles occur in an area. Until about June, the adults eat the elderberry foliage; after June they mate. The females lay eggs in crevices in the bark. Upon hatching the larvae then begin to tunnel into the tree where they will spend 1-2 years eating the interior wood, which is their sole food source.

Use of the elderberry shrubs by the beetle, a wood borer, is rarely apparent. Frequently, the only exterior evidence of the plant's use by the valley elderberry longhorn beetle is an exit hole. However, observations made within elderberry plants along the Cosumnes River, in the Folsom Lake area, and near Blue Ravine in Folsom (USFWS 2007b) indicate that larval galleries can be found in elderberry stems with no evidence of exit holes; the larvae either succumb prior to constructing an exit hole or are not far enough along in the developmental process to construct an exit hole. Larvae appear to be distributed in stems which are 1.0 inch or greater in diameter at ground level (USFWS 1984 and Barr 1991).

Population densities of the valley elderberry longhorn beetle are probably naturally low (USFWS 1984). It has been suggested, based on the spatial distribution of occupied plants (Barr 1991), that the valley elderberry longhorn beetle is a poor disperser. Low density and limited dispersal capability cause the valley elderberry longhorn beetle to be vulnerable to the negative effects of the isolation of small subpopulations due to habitat fragmentation.

In the Central Valley, the elderberry shrub is associated with riparian forests which occur along rivers and streams. Historically, the beetle ranged throughout the Valley. However, recent surveys have revealed the beetle to persist only in scattered localities along the Sacramento, American, San Joaquin, Kings, Kaweah, and Tule rivers and their tributaries. Over 90 percent of these riparian forests have been cleared in the past century for agricultural, as well as urban and suburban development. The wood from these forests has also been used extensively as fuel and building materials. Additionally, extensive use of pesticides, grazing and other mismanagement have severely degraded otherwise undisturbed patches of riparian habitat.

The work area does not fall within critical habitat designated for the valley elderberry longhorn beetle (USFWS 1980), and there are no documented occurrences of valley elderberry longhorn beetle within 5 miles of the work area. However, a total of 26 elderberry shrubs were mapped in 15 locations in the work area and its vicinity, primarily along Marsh Creek, during spring surveys on May 21, 2007. All of the shrubs had at least one stem greater than 1.0 inch at the ground. Examination of the trunks found holes that are consistent with exit holes of the valley elderberry longhorn beetle. Some of these shrubs are within 100 feet of the pipe removal area and pipe removal staging area. Protocol-level surveys were not conducted for this species but due to the presence of its host plant within the species range, this species is assumed to occur. With implementation of the measures in the USFWS' Conservation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS 1999), some of which are listed in Appendix D, the Line 131 project is not likely to adversely affect the elderberry beetle.

Two additional special-status insects have a low potential to occur within the vicinity of the project area. The curved-foot hygrotus diving beetle (*Hygrotus curvipes*) and molestan blister beetle (*Lytta molesta*) occupy seasonal ponds, pools, and streams. Marginally-suitable habitat occurs in the project vicinity and these species were considered to have a low potential for occurrence in the project vicinity. The closest known occurrence of the molestan blister

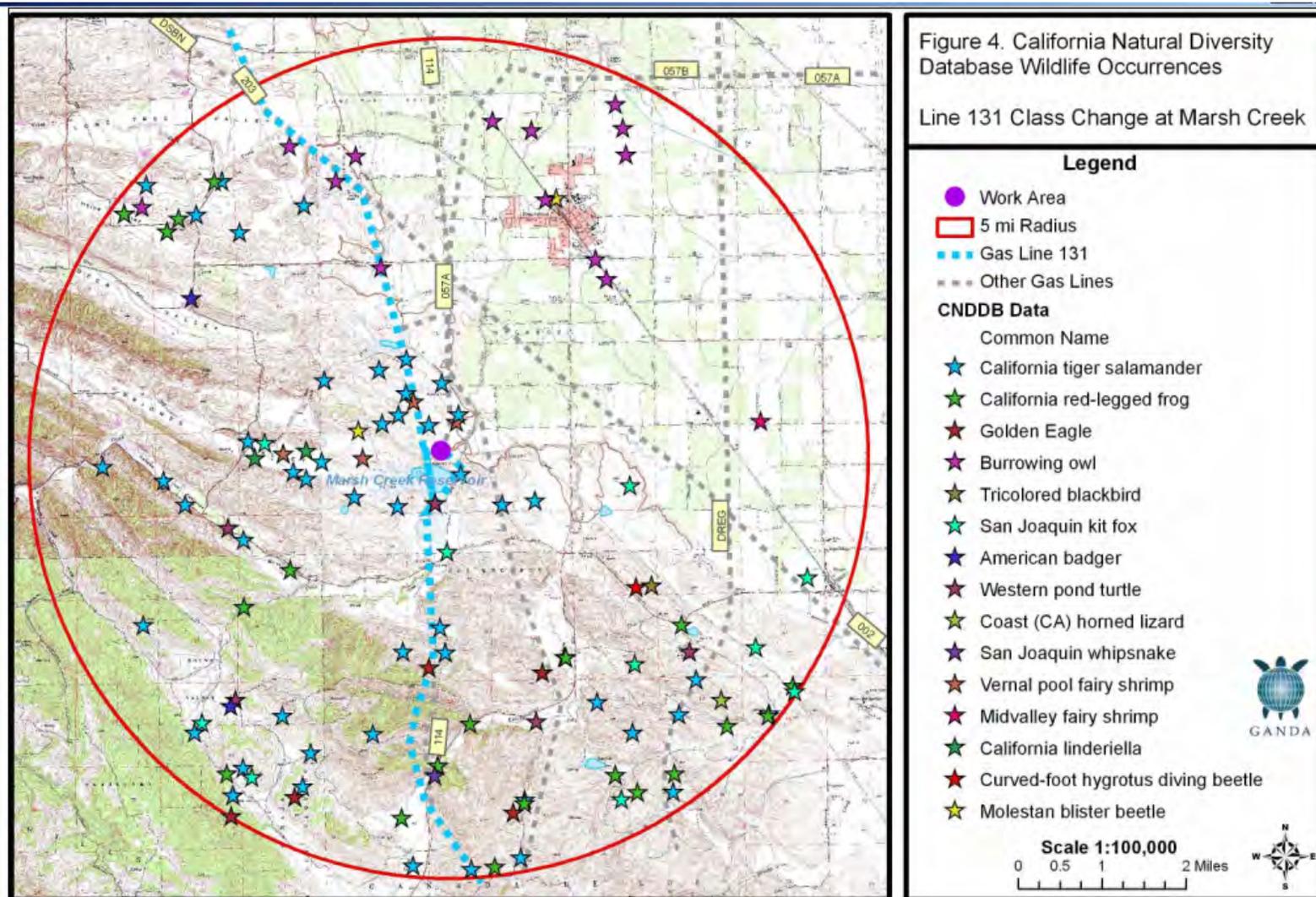


Figure 4. California Natural Diversity Database Wildlife Occurrences

TABLE 2
 Special-Status Animal Species with Potential to Occur in the Work Area

| Common and Scientific Names | Federal and/or State Status | Habitat | Potential for Occurrence |
|---|-----------------------------|--|--|
| Invertebrates | | | |
| Curved-foot hygrotes diving beetle <i>Hygrotes curvipes</i> | FSC | Inhabit seasonal ponds, pools, streams, and drainages, usually found in temporary wetlands characterized by salt-tolerant plant species. | Low. Marginally suitable habitat occurs in the project vicinity. |
| Molestan blister beetle <i>Lytta molesta</i> | FSC | Inhabit seasonal ponds, pools, streams, and drainages, usually found in temporary wetlands characterized by salt-tolerant plant species. | Low. Marginally suitable habitat occurs in the project vicinity. |
| Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i> | FT | Elderberry shrubs | Assumed present. Elderberry shrubs greater than 1.0 inch diameter at base with exit holes found in the project area. |
| Callippe silverspot butterfly <i>Speyeria callippe callippe</i> | FE | Coastal prairie or dune habitats sheltered from wind within 3 miles of the coast. Host plants are violets, typically <i>Viola adunca</i> . | None. No suitable habitat occurs in the project vicinity. |
| Lange's metalmark butterfly <i>Apodemia mormo langei</i> | FE | Inhabits stabilized dunes along the San Joaquin River. Endemic to Antioch Dunes, Contra Costa County. | None. No suitable habitat present. |
| Conservancy fairy shrimp <i>Branchinecta conservatio</i> | FE | Habitat includes large playa type pools filled with turbid water. | None. Suitable habitat is not present in the work area |
| Vernal pool fairy shrimp <i>Branchinecta lynchi</i> | FT | Endemic to the grasslands of the central valley, central coast, and central south mountains, in astatic rain-filled pools. Vernal pools containing clear to highly turbid water. | Moderate. Limited suitable habitat is present in the project area. |
| Vernal pool tadpole shrimp <i>Lepidurus packardii</i> | FE | Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. | None. Suitable habitat is not present in the work area. |
| Longhorn fairy shrimp <i>Branchinecta longiantenna</i> | FE | Endemic to the eastern margin of the Central Coast Mountains in seasonally astatic vernal pools. | Moderate. Limited suitable habitat is present in the project area. |

TABLE 2
 Special-Status Animal Species with Potential to Occur in the Work Area

| Common and Scientific Names | Federal and/or State Status | Habitat | Potential for Occurrence |
|---|-----------------------------|--|--|
| Fish | | | |
| Chinook salmon (winter-run [E]; Central Valley spring-run [T]; fall-run [C]) <i>Oncorhynchus tshawytscha</i> | FE, FT, FC, SE | Refers to populations spawning in the Sacramento and San Joaquin Rivers and their tributaries. Most spawn in the large Sacramento and San Joaquin River and their large permanent tributaries. | Very low. Current degraded conditions of Marsh Creek limit its use by native fishes as well as others. |
| Steelhead (Central Valley ESU) <i>Oncorhynchus mykiss</i> | FT | May have historically been in the San Joaquin River tributaries during wet years. | Very low. Current degraded conditions of Marsh Creek limit its use by native fishes as well as others. |
| Sacramento perch <i>Archoplites interruptus</i> | CSC | Historically found in the sloughs, slow moving rivers, and lakes of the Central Valley. | None. No suitable habitat present. |
| Delta smelt <i>Hypomesus transpacificus</i> | FT, ST | Sacramento-San Joaquin Delta. Seasonal in Suisun Bay, Carquinez Strait and San Pablo Bay. | None. Marsh Creek provides no suitable habitat for this species in the project vicinity. |
| Amphibians | | | |
| California tiger salamander <i>Ambystoma californiense</i> | FT, CSC | Usually breed in temporary ponds and slower parts of streams in some permanent waters primarily in grassland and woodland areas. Spend much time in burrows of California ground squirrels, gophers, and other animals. | High. Suitable aestivation and aquatic habitat exists in the project vicinity. |
| California red-legged frog <i>Rana aurora draytonii</i> | FT, CSC | Perennial and temporary ponds, pools, streams where water remains long enough for breeding and development of young. Good conditions include emergent or shoreline riparian vegetation closely associated with relatively shallow to deep (> 1.6 ft deep), still or slow-moving water. | Moderate to high. Suitable aestivation and aquatic habitat exists in the project vicinity. |
| Foothill yellow-legged frog <i>Rana boylei</i> | CSC, FSC | Streams zones with gravelly or rocky substrates in forest, woodland, and chaparral habitats. | None. No suitable habitats exist in the project vicinity. |

TABLE 2
 Special-Status Animal Species with Potential to Occur in the Work Area

| Common and Scientific Names | Federal and/or State Status | Habitat | Potential for Occurrence |
|--|-----------------------------|--|---|
| Reptiles | | | |
| Alameda whipsnake <i>Masticophis lateralis euryxanthus</i> | FT, ST | Restricted to the valley –foothill hardwood habitat of the coast ranged between vicinity of Monterey and north of San Francisco Bay. Dense, dry brush; rock outcrops; and hilly grasslands. It particularly prefers south-facing stands of coastal scrub and chaparral as well as grassy areas within oak woodland | None. No suitable habitat present. |
| San Joaquin whipsnake <i>Masticophis flagellum ruddocki</i> | CSC | Frequent a variety of habitats, open, dry habitats with no dense vegetation. Found in valley grassland and saltbush shrub in the San Joaquin Valley | Moderate. Potential suitable habitat occurs in the project vicinity. |
| Giant garter snake <i>Thamnophis gigas</i> | FT, ST | Usually found in freshwater marsh, wetland, low gradient stream, canals, and irrigation ditches. | Low. Marginally suitable habitat present; no known occurrences in the vicinity of the project site. |
| Coast (California) horned lizard <i>Phrynosoma coronatum (frontale)</i> | CSC | Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. | None. No suitable habitat present. |
| Silvery legless lizard <i>Anniella pulchra pulchra</i> | CSC | Sandy or loose loamy soils under sparse vegetation. | None. No suitable habitat present. |
| Western pond turtle <i>Actinemys marmorata</i> | CSC, FSC | Permanent and seasonal ponds, lakes, and slow-moving parts of streams. Lays eggs in dry slopes with soils rich in clay and silt. | High. Good suitable aquatic habitat occurs in the project vicinity including potential nesting sites in the project area. |
| Birds | | | |
| Double-crested cormorant <i>Phalacrocorax auritus</i> | CSC | Colonial nester on coastal cliffs offshore islands and along lake margins in the interior of California. | None. No suitable habitat present. |
| Bank swallow <i>Riparia riparia</i> | ST | Colonial nester; Nest primarily in riparian and other lowland habitats west of the desert. | Low Marginally suitable foraging habitat occurs in the project vicinity. |
| Burrowing owl <i>Athene cunicularia</i> | CSC | Nests in burrows and forages in low-growing grasslands and other open, semi-arid habitats that support small burrowing mammals. | High. Suitable habitat occurs, and burrowing owl sign was observed during surveys by PG&E biologists. |

TABLE 2
 Special-Status Animal Species with Potential to Occur in the Work Area

| Common and Scientific Names | Federal and/or State Status | Habitat | Potential for Occurrence |
|---|-----------------------------|---|---|
| California black rail <i>Laterallus jamaicensis coturniculus</i> | ST | Mainly inhabits salt-marshes bordering larger bays. | None. No suitable habitat present. |
| California horned lark <i>Eremophila alpestris actia</i> | CSC | Coastal regions chiefly from Sonoma County to San Diego County, also main part of San Diego Co. and San Joaquin Valley and east to foothills. | Moderate. Suitable habitat is present. |
| Bald eagle <i>Haliaeetus leucocephalus</i> | FT, SE | Forage over large water bodies or large free-flowing rivers. Fish are the primary prey items. They nest in tall trees, and winter in a variety of habitats. | None. Marginally suitable foraging habitat present; no known occurrences in the vicinity of the project site. |
| Golden eagle <i>Aquila chrysaetos</i> | CSC | Rolling and foothills, and mountain areas, sage juniper flats desert. | High. Suitable foraging and nesting habitat occurs in the project vicinity. |
| Loggerhead shrike <i>Lanius ludovicianus</i> | CSC | Nesting in broken woodlands, savannah, Pinyon-juniper, Joshua tree and riparian woodland oases, shrub ad washes. | High. Suitable foraging and nesting habitat occurs in the project vicinity. |
| Northern harrier <i>Circus cyaneus</i> | CSC | Nesting in costal salt and fresh water marsh. Nest and forage in grasslands. | High. Suitable foraging and nesting habitat occurs in the project vicinity. |
| Suisun song sparrow <i>Melospiza melodia maxillaris</i> | CSC | Resident of brackish-water marshes surrounding Suisun Bay. | None. No suitable habitat present. |
| Swainson's hawk <i>Buteo swainsoni</i> | ST | Breeds in stands with few trees in Jumper-sage flats, riparian areas and oak savannah. | Occurs. Marginally suitable foraging habitat occurs in the project vicinity. This species was observed in the project site during reconnaissance surveys by GANDA biologist on May 21 2007. |
| Tricolored blackbird <i>Agelaius tricolor</i> | CSC | Highly colonial species, most numerous in Central Valley in vicinity. Largely endemic to California | Low. Marginally suitable habitat occurs in the project vicinity. |
| Mammals | | | |
| Salt-marsh harvest mouse <i>Reithrodontomys raviventris</i> | FE, SE | Only in the saline emergent vegetation wetland of San Francisco Bay and its tributaries. | None. No suitable habitat present. |

TABLE 2
 Special-Status Animal Species with Potential to Occur in the Work Area

| Common and Scientific Names | Federal and/or State Status | Habitat | Potential for Occurrence |
|--|-----------------------------|---|--|
| American badger <i>Taxidea taxus</i> | CSC | Most abundant in open drier part of shrubs, forest, and herbaceous habitats, with friable soils. | None. No suitable habitat present. |
| San Joaquin kit fox <i>Vulpes macrotis mutica</i> | FE, ST | Annual grasslands or grassy open stages with scattered shrubby vegetation. | Low. Suitable habitat is present in the project vicinity. |
| Pallid bat <i>Antrozous pallidus</i> | CSC | Open, dry, habitats such as grasslands, shrub, and woodlands with rocky areas for roosting. Roosts in cliff crevices of rock faces, bridges, and occasionally hollow trees and buildings. | Low. Marginally suitable roosting habitat occurs in the project vicinity. |
| Pacific western big-eared bat <i>Corynorhinus townsendii townsendii</i> | CSC | Roosting sites include caves, mine tunnels, abandoned buildings, and other structures. Most commonly associated with mesic sites. Highly sensitive to human disturbance. | Low. Marginally suitable roosting habitat occurs in the project vicinity. |
| Long-eared myotis bat <i>Myotis evotis</i> | FSC | Found in a variety of habitats including brush, woodland, and conifer forests. Roosts in buildings, caves, snags, and spaces under tree bark. | Moderate. Some suitable roosting habitat occurs in the project vicinity. |
| Fringed myotis bat <i>Myotis thysanodes</i> | FSC | Roosts in caves, mines, rock crevice or building. Found along stream and rivers. | Moderate. Some suitable roosting habitat occurs in the project vicinity. |
| Long-legged myotis bat <i>Myotis volans</i> | FSC | Roots in abandoned building | Low. Marginally suitable roosting habitat occurs in the project vicinity. |
| Small-footed myotis bat <i>Myotis ciliolabrum</i> | FSC, CSC | Roosts in caves, mine tunnels, crevices in rocks and buildings, generally near forested area. Feeds low among trees or over shrubs. | Low. Marginally suitable roosting habitat occurs in the project vicinity. |
| Yuma myotis bat <i>Myotis yumanensis</i> | FSC | Found in a variety of habitats, prefers open woodlands near open water for foraging. Roosts under bridges, in buildings, caves, and crevices. | Moderate. Marginally suitable roosting habitat occurs in the project vicinity. |

TABLE 2
 Special-Status Animal Species with Potential to Occur in the Work Area

| Common and Scientific Names | Federal and/or State Status | Habitat | Potential for Occurrence |
|-----------------------------|-----------------------------|---------|--------------------------|
|-----------------------------|-----------------------------|---------|--------------------------|

Status:

F=FEDERAL; **S**=STATE;

CSC=California Species of Special Concern

T=THREATENED; **E**=ENDANGERED; **P**= PROPOSED; **R**=RARE; **C**=CANDIDATE;

FSC=Federal Species of Concern

beetle is about 1.5 miles northwest of the project area (Figure 4). No CNDDDB (CDFG 2007a) occurrences exist for the curved-foot hygrotus diving beetle in or near the project area.

Fishes

Three fish species could potentially occur in the project vicinity: Central California coast steelhead (*Oncorhynchus mykiss*, federal threatened), spring-run, winter-run and fall-run Chinook salmon (*Oncorhynchus tshawytscha*, federal endangered, State endangered, and California Species of Special Concern), and Delta smelt (*Hypomesus transpacificus*, federal threatened, State endangered). Delta smelt and Chinook salmon do not have the potential to occur in the work area. Steelhead has a low potential of occurring in the work area.

Marsh Creek flows into Marsh Creek Reservoir, immediately upstream of the project area. From Marsh Creek Reservoir water is released back into Marsh Creek and flows generally northward for about 10 miles to Big Break (Dutch Slough) in the Delta. The segment of Marsh Creek immediately below the reservoir and adjacent to the project area is severely degraded and frequently does not hold water between July and October. In addition, there is a fish barrier about 6 miles downstream of the project area. Although lower Marsh Creek appears to support reproducing runs of Chinook salmon, the fish barrier prevents Chinook salmon from reaching the project area (Cain et al. 2003). There is some consideration being given to removing the fish barrier. However, due to the degraded habitat, and the frequent lack of water in Marsh Creek in the project vicinity, Chinook salmon and steelhead trout would not be expected to use this area, even if the fish barrier were removed (Cain et al. 2003). The Line 131 project is not likely to adversely affect steelhead.

Amphibians

Two special-status amphibian species have high to moderate potential to occur in the project work area and/or its vicinity.

The California tiger salamander (*Ambystoma californiense*), a federally listed as threatened species, is a relatively large, terrestrial salamander that inhabits grasslands and oak savanna habitats in the valleys and low hills of central and northern California (Storer 1925, Barry and Shaffer 1994). California tiger salamanders have been recorded from all of the nine Bay Area counties at elevations ranging from approximately 10 to 3,500 feet above mean sea level (Shaffer and Fisher 1991). California tiger salamander habitat appears to be in the initial stages of fragmentation, resulting in the decline of the population (Fisher and Shaffer 1996). California tiger salamanders require vernal pools, ponds (natural or man-made), or semi-permanent calm waters (where ponded water is present for a minimum of three to

four months) for breeding and larval maturation, and adjacent upland areas that contain small mammal burrows or other suitable refugia for aestivation. Adult California tiger salamanders spend most of their lives underground in small mammal burrows, most often those of California ground squirrels (Loredo et al. 1996). Adults emerge from underground retreats to feed, court, and breed during warm winter rains typically from November through March. Adults may migrate long distances, up to 2 miles or more, to reach pools for breeding and egg laying (Jennings and Hayes 1994). The eggs are attached singly or in small groups to vegetation under water or directly on the bottom of the pool if emergent vegetation is sparse or nonexistent (Storer 1925, Jennings and Hayes 1994). After hatching in about 10-14 days, the larvae continue to develop in the pools for several months until they metamorphose, which takes a minimum of 10 weeks (Anderson 1968, Feaver 1971).

Following metamorphosis, juvenile salamanders seek refugia, typically mammal burrows, traveling distances of 1 mile or more from their breeding sites (Austin and Shaffer 1992). They may remain in the refugia until they emerge during a subsequent breeding season. Trenham et al. (2000) found that most individuals did not reach sexual maturity for 4 to 5 years. After completion of breeding, adult California tiger salamanders retreat to underground burrows. During some years in which the conditions are sub-optimal, adult females have been known to forego reproduction completely (Loredo and Van Vuren 1996, Trenham et al. 2000). California tiger salamander populations and breeding are vitally influenced by environmental conditions including seasonal rainfall and pond duration (Loredo and Van Vuren 1996). California tiger salamanders are dependant on the integrity of both breeding ponds and adjacent upland habitat, especially long-lasting seasonal pool and pond complexes (Jennings and Hayes 1994). The alteration of either habitat component through the introduction of exotic predators or the construction of barriers, e.g., roads, berms, and certain types of fences, that fragment habitat and reduce connectivity can be detrimental to the survival of the California tiger salamander (Jennings and Hayes 1994).

The work area does not fall within critical habitat designated for California tiger salamander (USFWS 2005). The nearest known breeding locality for California tiger salamander was documented in 1993, approximately 300 feet southeast of the work area. In addition, there are several documented occurrences of adults, juveniles, and breeding sites with larvae present within 5 miles of the work area (Figure 4, CNDDDB occurrence records for amphibians). Several concentrations of ground squirrel burrows are found on the site, which could provide suitable upland habitat for California tiger salamander. Although protocol-level surveys were not conducted, this species has the potential to occur within the work area and is assumed to be present. Approximately 0.74 acres of California tiger salamander upland dispersal habitat will temporarily be impacted by the project. These areas are located at the southern boring and staging area and the pipe removal area and staging area, and the unpaved portion of the southern access route. With the implementation of avoidance and minimization measures (see Appendix D), the proposed action may affect, but is not likely to adversely affect, the California tiger salamander.

Optimal habitat for the federally-listed as threatened California red-legged frog (*Rana aurora draytonii*, federal threatened) includes ponds, stream courses, permanent pools (Storer 1925), and intermittent streams fed by drainage areas no larger than 74,000 acres (Hayes and Jennings 1988) between sea level and 5,000 ft in elevation (Bulger et al. 2003). Habitat characteristics include water depth of at least 2.5 ft, largely intact emergent or shoreline

vegetation, e.g. cattails (*Typha* spp.), tules (*Scirpus* spp.), or willows (*Salix* spp.), and absence of competitors/predators such as bullfrogs (*Rana catesbeiana*) and largemouth bass (*Micropterus salmoides*) (Hayes and Jennings 1988). However, California red-legged frog will use a wide variety of habitats, including temporary pools and streams, permanent watercourses, wells, and ponds. Outside of an ideal habitat, California red-legged frogs have been found in concrete lined pools, isolated wells, stock ponds absent of shoreline vegetation, and in refuse piles near ponds. In order to survive, permanent ponds and neighboring aquatic habitat that lasts for at least six months a year must be nearby. Less optimal habitat is most likely used during wet periods, but a permanent water source is essential to the survival of the population.

Adults are highly aquatic and are most active at night (Storer 1925). However, California red-legged frogs also make use of terrestrial habitat, especially after precipitation events, for non-migratory forays into upland habitats and migratory overland movements between aquatic sites. California red-legged frogs typically remain within 16 ft of aquatic habitat during dry periods, but will move into upland habitats as far as 426 feet during summer rains (Bulger et al. 2003). In a study conducted by Bulger et al. (2003) at a coastal site in northern Santa Cruz County, 90 percent of non-migratory California red-legged frog remained within 196 feet of aquatic habitat following the onset of winter rains. Bulger et al. (2003) demonstrated that California red-legged frog migrations to breeding ponds were often precipitated by rain events in excess of 0.9 inch. Migratory routes were often highly oriented toward the nearest pond and were typically traversed in direct, point to point movements with little to no preference or avoidance of topography or habitat.

Migratory activity was conducted over a few to several days, followed by several sedentary days. California red-legged frogs were documented to migrate between aquatic sites at distances up to 2 miles. In most years, breeding typically begins between November and mid-December and lasts through April, but is dictated by winter rainfall (Stebbins 2003, Jennings and Hayes 1994, Bulger et al. 2003). As spawning occurs, California red-legged frogs cease using terrestrial uplands farther than 20 ft from the water (Bulger et al. 2003). At the breeding sites, males call in groups to attract females (Jennings and Hayes 1994). During amplexus, females deposit an egg mass on emergent vegetation (Storer 1925, Jennings and Hayes 1994). Males and females reach sexual maturity at 2 and 3 years, respectively (Jennings and Hayes 1994). In some cases, tadpoles overwinter and metamorphose the following spring (Storer 1925).

The action area does not fall within designated critical habitat for California red-legged frog (USFWS 2006), though it does lie immediately adjacent to proposed critical habitat Alameda Unit 1A. The nearest known locality for California red-legged frog is approximately 1.5 miles south of the action area (Figure 3). Potential suitable breeding habitat is present along Marsh Creek within the action area, and at the Marsh Creek Reservoir, approximately 250 feet to the southwest of the action area. In addition, the action area provides potential refugia and dispersal habitat. Currently, the land surrounding the action area is undeveloped and there are no barriers to dispersal of California red-legged frog from potential surrounding populations onto the action area. Suitable uplands within the action area could potentially be used by California red-legged frog as dispersal habitat. Although protocol-level surveys were not conducted, this species has the potential to occur within the action area and is assumed to be present. Approximately 0.74 acres of California red-legged

frog upland dispersal habitat will temporarily be impacted. These areas are located at the southern boring and staging area, the pipe removal area and staging area, and the unpaved portion of the southern access route. With the implementation of avoidance and minimization measures (see Appendix D), the proposed action may affect, but is not likely to adversely affect, the California red-legged frog.

Reptiles

Two special-status reptile species, the San Joaquin whipsnake (*Masticophis flagellum ruddocki*, California Species of Special Concern) and the Western pond turtle (*Actinemys marmorata*, federal and California Species of Special Concern), have potential to occur within the project area or its vicinity.

The San Joaquin whipsnake frequents a variety of habitats including open, dry habitats with no dense vegetation. Potential suitable habitat occurs in the project area. The closest known occurrence is located more than 3 miles from the project area. This species has a moderate potential to occur in the project area and its vicinity.

The Western pond turtle occupies permanent and seasonal ponds, lakes, and slow-moving parts of streams. The species lays eggs in dry upland area with soils rich in clay and silt. One Western pond turtle was observed by a GANDA biologist on May 21, 2007 at Marsh Creek Reservoir a few hundred feet south of the project area. Marsh Creek also provides suitable aquatic habitat. The uplands in the project area and its vicinity also offer suitable nesting sites for the western pond turtle. This species has a high potential for occurrence in the project area and its vicinity.

Birds

Several special-status birds have the potential to occur in the project area and its vicinity. Measures listed in Appendix D will be implemented to minimize or avoid impacts to nesting birds; additional measures for burrowing owl are also included in Appendix D.

A pair of Swainson's hawks (*Buteo swainsoni*), State-listed as threatened, was observed during the reconnaissance survey on May 21, 2007. The birds were using a tree in the project area for perching and appearing to be foraging in the adjacent open fields.

Burrowing owl (*Athene cunicularia*), a California Species of Special Concern, has a high potential to occur in the project area. Burrowing owls usually nest in old burrows of ground squirrels, badger, or other small mammals, although they may dig their own burrows in soft soil. Where burrows are scarce, pipes, culverts, and even nest boxes may be utilized. Suitable foraging and nesting habitat is present within project area and its vicinity, including numerous California ground squirrel burrows. Twelve CNDDDB records exist for occurrences within 5 miles of the project area (Figure 4). Furthermore, five burrowing owls were observed nearby in 2003 during focused nesting season surveys at Vineyards at Marsh Creek Project (Sycamore Associates LLC 2003b). Those sightings are approximately 2,000 feet northwest of the project area.

Golden eagle (*Aquila chrysaetos*), a California Species of Special Concern, has a high potential to occur in the project area and its vicinity. Suitable foraging and nesting habitat occur in the project vicinity and golden eagles have been observed within 5 miles of the project area (Figure 4). The foods of golden eagle vary greatly and include small mammals, especially lagomorphs and rodents (Johnsgard, 1990). Most of the nests are found on cliff ledges and in

large trees, which are inaccessible by other animals, but some nests are found on easily accessible hillsides.

Suitable foraging and nesting habitat also occurs in the project vicinity for the loggerhead shrike (*Lanius ludovicianus*) and the northern harrier (*Circus cyaneus*), both California Species of Special Concern. They have a high potential to occur in the project vicinity, though no CNDDDB occurrences were identified during pre-field research.

California horned lark (*Eremophila alpestris actia*), a California Species of Special Concern, frequents extensive barren-ground and short grass habitats. Suitable habitat is present and this species has a moderate potential to occur in the project vicinity, though no CNDDDB occurrences were identified during pre-field research.

Bank swallow (*Riparia riparia*), a State threatened species, can be found primarily in riparian and other open lowland habitats during migration. Marginally-suitable foraging habitat occurs in the project vicinity. This species has a low potential to occur in the project vicinity. No CNDDDB occurrences were identified during pre-field research.

Tricolored blackbird (*Agelaius tricolor*), a State Species of Special Concern, frequents fields, wetlands, and pasture. They nest in freshwater cattail and tule marshes. Marginally-suitable habitat occurs in the project vicinity. The tricolored blackbird was previously observed within approximately 3 miles of the project area (Figure 4; CDFG 2007a). This species has a low potential for occurrence in the project area.

Mammals

The San Joaquin kit fox (*Vulpes macrotis mutica*, federal endangered) is believed to have inhabited lands that extend from Contra Costa and San Joaquin counties in the north to Kern County in the south. By the 1930's, Grinnell et al. (1937) reported that the range had been reduced to the southern and western portions of the Central Valley. Surveys conducted between 1969 and 1975 extended the known range of the kit fox back into portions of its historical range in the northern San Joaquin Valley, including Contra Costa, Alameda, and San Joaquin counties. Kit foxes were also identified in three counties (Monterey, Santa Clara, and Santa Barbara) outside the originally defined historic range. The current range of the kit fox consists of the San Joaquin Valley Floor and adjacent foothills of the coast range, Sierra Nevada, and Tehachapi Mountains (USFWS 1998). The kit fox is known to occur in fragmented habitat in eleven counties that occupy the San Joaquin Valley, including Fresno and San Benito counties.

Historically, the kit fox occurred in a variety of native plant communities throughout the San Joaquin Valley, including valley sink scrub, valley saltbush scrub, upper Sonoran subshrub scrub, interior Coast Range saltbush scrub, and annual grasslands. Before the rapid expansion of irrigated agriculture in the San Joaquin Valley, valley saltbush scrub was probably the species preferred habitat (Grinnell et al. 1937). Because agriculture has replaced much of the native Central Valley habitat, kit fox appear to have adapted to living in marginal areas such as grazed, non-irrigated grasslands, peripheral lands adjacent to tilled and fallow fields, irrigated row crops, orchards, vineyards, petroleum fields and urban areas (Morrell 1971, Jensen 1972, and Ralls and White 1991). Kit fox typically prefer areas with loose-textured soils suitable for den excavation (USFWS 1983) but are found on virtually every soil type (USFWS 1998). Dens are usually scarce in areas with shallow soils,

due to the proximity to bedrock (O'Farrell and Gilbertson 1979, O'Farrell and Kato 1980), impenetrable hardpan layers (Morrell 1972), and high water tables (McCue et al. 1981). Where soils make digging difficult, kit foxes modify burrows built by other animals, particularly those of California ground squirrel (Orloff et al. 1986). Structures such as culverts, abandoned pipelines, and well casings may also be used (USFWS 1998). Although kit fox may construct their own dens, it is commonly believed that they more often enlarge existing small mammal burrows (Orloff et al. 1986, USFWS 1998). Den structure varies across the taxon's range, depending on local topography and soil type. In the southern portion of their range, dens generally have entrances with ramp-shaped mounds of dirt 1-2 meters long in front and are located on slopes of less than 40° (Morrell 1972, Reese et al. 1992). Natal and pupping dens tend to be larger, have more entrances (2-18), and occur on flatter terrain. In the central portion of their range, the dirt apron in front of the den is replaced with a long trailing ramp with a runway down the middle.

Farther north, dens are generally placed higher than the surrounding terrain on lower portions of slopes (Orloff et al. 1986). Kit fox home range varies from less than 640 acres up to approximately 7,660 acres (Morrell 1972, Knapp 1978, Zoellick et al. 1987a, Spiegel and Bradbury 1992, White and Ralls 1993). They may move between dens four or five times during the summer months and once or twice during the pup-rearing season (Morrell 1972, Hall 1983). Foraging kit foxes can range up to 10 miles in a single night during the breeding season and 6 miles during the pup-rearing and dispersal season (Zoellick et al. 1987a). Threats to kit fox include habitat loss and fragmentation as a result of agriculture, industrial and urban development. In addition, continued predation and competition from coyotes (*Canis latrans*) and other predators, present major threats to the survival of the kit fox. Catastrophic events such as extended drought or rain (with a corresponding decline in prey availability) likely have a more significant effect on small isolated populations of kit fox than on larger, contiguous populations. The role of accidents and disease in mortality is not well documented, but these factors may become increasingly important as kit fox are subjected to more contact with humans, their pets, and livestock.

Rabies caused several deaths of radio-collared kit foxes at Camp Roberts and may have contributed to the recent decline of kit foxes there (USFWS 1998). Increasing noise in the environment from highway traffic, wind generation, and other human-related activities may interfere with fox's ability to communicate, detect prey, and avoid predators.

Kit fox are believed to be monogamous and can, but generally do not, breed during their first year of adulthood (Morrell 1972). The breeding season begins during September and October when adult females begin to clean and enlarge natal or pupping dens (USFWS 1998). Mating and conception occur between late December and March (Egoscue 1956, Morrell 1972, Zoellick et al. 1987b). Gestation is 48-52 days, and litters of two to six pups are born between late February and late March (Egoscue 1962, Morrell 1972, Zoellick et al. 1987b).

No critical habitat has been designated for the San Joaquin kit fox; however, the work area is within the northern part of the San Joaquin kit fox range. The closest reported occurrence is approximately two miles to the east of the work area. An early evaluation for the San Joaquin kit fox was performed for the Vineyards at Marsh Creek project (Sycamore 2003a). That evaluation concluded that the Vineyards at Marsh Creek study area provides suitable foraging habitat, some denning opportunities, and potential movement opportunities.

However, no kit fox sign (dens, tracks, scat) or kit fox were detected within this study area during reconnaissance surveys and it was presumed unlikely kit fox were residing in the work area.

Because the project location is within the range of the kit fox, this species has the potential to occur within the work area and is assumed to be present. The temporary impact areas potentially affecting San Joaquin kit fox dispersal habitat are 0.74 acres, and are located at the southern boring and staging area and the pipe removal area and staging area and the unpaved portion of the southern access route. With the implementation of avoidance and minimization measures (see Appendix D), the proposed action is not likely to adversely affect the San Joaquin kit fox.

The following bat species are federal Species of Concern or/and California Species of Special Concern: the pallid bat, the Pacific Western big-eared bat (*Corynorhinus townsendii townsendii*), the long-legged myotis bat (*Myotis volans*), and the small-footed myotis bat (*Myotis ciliolabrum*). These species have low potential to occur in the project vicinity due to lack of suitable roosting habitat on the project site. Those species usually roost in cliff crevices of rock faces, bridges, and occasionally hollow trees and buildings. None of those bats were reported to the CNDDDB within the project area or a five-mile radius.

The Yuma myotis bat (*Myotis yumanensis*), the long-eared myotis bat (*Myotis evotis*), and the fringed myotis bat (*Myotis thysanodes*) -- all federal Species of Concern -- have a moderate potential to occur in the project vicinity due to the presence a few old buildings and roosting spaces under tree bark. None of those species were reported within the project area or a five-mile radius by the CNDDDB.

6.0 Wetlands and Waters of the U.S.

A preliminary determination of waters of the U.S. classified 0.18 acre of Marsh Creek within the pipe removal area as intermittent drainage (GANDA 2007). Other potential water or wetland features existing within approximately 30 feet the work areas are shown on Figure 2. These include approximately 0.06 acre of seasonal wetlands and 0.05 acre of freshwater marsh. However, no formal delineation of these features using U.S. Army Corps of Engineers guidelines was completed because impacts to these wetlands are not expected to occur.

7.0 References

- Anderson, P.R. 1968. The reproductive and developmental history of the California tiger salamander. Unpublished MA Thesis, Fresno State College, Fresno, California.
- Austin, C.C., and H. B. Shaffer. 1992. Short-, medium-, and long-term repeatability of locomotor performance in the tiger salamander *Ambystoma californiense*. *Functional Ecology* 6(2): 145-153.
- Barr, C.B. 1991. The Distribution, Habitat, and Status of the Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* Fisher (Insecta: Coleoptera: Cerambycidae). United States Fish and Wildlife Service, Sacramento, California. 134 pp.
- Barry, S.J. and H.B. Shaffer. 1994. The status of the California Tiger Salamander (*Ambystoma californiense*) at Lagunita: a 50-year update. *Journal of Herpetology* 28:159-164.
- Bulger, J.B., N. J. Scott Jr. and Richard Seymour. 2003. Terrestrial Activity and Conservation of adult California red-legged frogs *Rana aurora draytonii* in coastal forests and grasslands. *Biological Conservation*. Vol. 110 pp. 85-95.
- Cain, J. R., J. D. Robins, and S. S. Beemish. 2003. The past and present condition of the Marsh Creek Watershed. Third ed. Prepared by the Natural Heritage Institute and the Delta Science Center at Big Break.
- California Department of Fish and Game (CDFG). 2007a. CNDDDB RareFind 3 version 3.1.0. Commercial version of electronic database. Updated December 30, 2006. Includes California Natural Diversity Database (CNDDDB) overlay map for use with the Brentwood quadrangle. Produced for Garcia and Associates. April.
- _____. 2007b. State and Federally Listed Endangered, Threatened and Rare Plants of California. Available at: <http://www.dfg.ca.gov/whdab/pdfs/TEPlants.pdf>
- _____. 2004a. State and Federally Listed Endangered, Threatened and Rare Animals of California. Available at <http://www.dfg.ca.gov/whdab/pdfs/TEAnimals.pdf>
- _____. 2004b. Special Animals. Wildlife and Habitat Data Analysis Branch. California Natural Diversity Database. Available at <http://www.dfg.ca.gov/whdab/pdfs/SPAnimals.pdf>
- _____. 2002. *California Wildlife Habitat Relationships (CWHR)* Version 8.0 personal computer program. California Interagency Wildlife Task Group. Sacramento, CA.
- California Native Plant Society (CNPS). 2007. Inventory of Rare and Endangered Plants (online edition, version 7). Available at: <http://www.cnps.org/inventory>.
- Calphotos. 2007. Accessed online April 19 and 20, 2007 at <http://calphotos.berkeley.edu>. University of California at Berkeley, California.

- Egoscue, H.J. 1962. Ecology and life history of the kit fox in Tooele County, Utah. *Ecology* 43:481-497.
- _____. 1956. Preliminary studies of the kit fox in Utah. *Journal of Mammalogy* 37:351-357.
- Eng et al. 1990. Californian Anostraca: Distribution, Habitat, and Status. *Journal of Crustacean Biology* 10(2):247-277.
- Entomological Consulting Services, Ltd. 1998. Vernal Pool Crustacean Wet Season Survey. July 15.
- Entomological Consulting Services, Ltd. 2003. Vernal Pool Crustacean Habitat Assessment Update. May 25.
- Eriksen, C. H. and D. Belk. 1999. Fairy shrimps of California's vernal pools, and playas. Mad River Press, Eureka, CA.
- Feaver, P.E. 1971. Breeding pool selection and larval mortality of three California amphibians: *Ambystoma tigrinum californiense* (Gray), *Hyla regilla* (Baird and Girard) and *Scaphiopus hammondii hammondii* (Girard). M.A. Thesis, Fresno State College, Fresno, CA.
- Fisher, R.N., and H. B. Shaffer. 1996. The Decline of Amphibians in California's Great Central Valley. *Conservation Biology* 10:1387-1397.
- GANDA (Garcia and Associates). 2007. Preliminary Determination of Waters of the United States for the Pacific Gas & Electric Company's Line 131 Class Change at Marsh Creek Contra Costa County. Auburn, CA. (June draft).
- Grinnel, J., S. Dixon, and J.M. Linsdale. 1937. Fur-bearing mammals of California. Volume II. University of California Press, Berkeley, California.
- Hall, F.A. 1983. Status of the kit fox (*Vulpes macrotis mutica*) at the Bethany wind turbine generating (WTG) project site, Alameda, California. The Resource Agency, California Department of Fish and Game, Sacramento, California.
- Hayes, M., and M. Jennings. 1998. Habitat Correlates of Distribution of the California Red-legged Frog and the Foothill Yellow-legged Frog: Implications for Management. In: R. Sarzo, K. Severson, and D. Patton (technical coordinators). Proceedings of the Symposium on the Management of Amphibians, Reptiles and Small Mammals in California. U.S.D.A. Forest Service, Rocky Mountain Range and Experiment Station, Fort Collins, Colorado. General Technical Report (RM-166): 1-458.
- Hickman, J., ed. 1993. The Jepson Manual. University of California Press, Berkeley.
- Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game. Unpublished report.
- Jennings, M.R., and M.P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. California Department of Fish and Game Contract #8023. Inland Fisheries Division, Rancho Cordova, California.

- Jensen, C.C. 1972. San Joaquin kit fox distribution. Unpublished report. U.S. Fish and Wildlife Service. Sacramento, California.
- Jepson Flora Project. 2007. Jepson Online Interchange. Accessed at <http://ucjeps.berkeley.edu/interchange.html>.
- Johnsgard, P. A., 1990. "Hawks, Eagles, & Falcons of North America." p.260-268. Washington and London: Smithsonian Institution Press.
- Knapp, D.K. 1978. Effects of agricultural development in Kern County, California on the San Joaquin kit fox in 1977. Final Report. Project E-1-1, Job V-1.21, Non-Game Wildlife Investigations. California Department of Fish and Game, Sacramento, California.
- Lake, D. 2004. Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties, seventh edition. California Native Plant Society, East Bay Chapter. Dated March 1, with additional lists dated March 2007.
- Loredo, I.D., and D. Van Vuren. 1996. Reproductive ecology of a population of the California tiger salamander. *Copeia* 1996: 895-901.
- Loredo, I., D., D. Van Vuren, and M.L. Morrison. 1996. Habitat use and migration behavior of the California tiger salamander. *Journal of Herpetology* 30:282-285.
- McCue, P.M. T. Kato, M.L. Sauls, and T.P. O'Farrell. 1981. Inventory of San Joaquin kit fox on land proposed as phase II, Kesterson Reservoir, Merced County, California. Report No. EGG 1183-2426. EG&E Energy measurements. Goleta, California.
- Morrell, S.H. 1972. Life history of the San Joaquin kit fox. *California Fish and Game* 58:162-174.
- Morrell, S.H. 1971. Life history of the San Joaquin kit fox. California Department of Fish and Game, Non-Game Wildlife Investigations. Unpublished report. Sacramento, California.
- National Resource Conservation Service (NRCS). 2007. Online Web Soil survey. Accessed at <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx> on June 11, 2007.
- O'Farrell, T.P., and L. Gilbertson. 1979. Ecology of the desert kit fox, *Vulpes macrotis arsipus*, in the Mojave Desert of Southern California. *Bulletin of the Southern California Academy of Sciences* 85:1-15.
- O'Farrell, T.P., and T.T. Kato. 1980. Relationship between abundance of blunt-nosed leopard lizards, *Crotaphytus silus*, and intensity of petroleum field development in Kern County, California 1980. U.S. Department of Energy Topical Report. No. GG1183-243, Santa Barbara Operations, EG&G Energy Measurements. Goleta, California.
- Orloff, S., F. Hall, and L. Spiegel. 1986. Distribution and habitat requirements of the San Joaquin kit fox in the northern extreme of their range. *Transactions of the Western Section of the Wildlife Society* 22:60-70.
- Ralls, K., and P.J. White. 1991. Kit fox-coyote relationships in the Carrizo Plain Natural Area. Annual Report. U.S. Fish and Wildlife Service. Sacramento, California.

- RBF Consulting. 2003. The Vineyards at Marsh Creek and Annexation Sites EIR, SCH#2003062019. Prepared for the City of Brentwood. Dated November.
- Reese, E.A., T.T. Kato, W.H. Berry, and T.P. O'Farrell. 1992. Ground penetrating radar and thermal images applied to San Joaquin kit fox (*Vulpes macrotis mutica*) at Camp Roberts Army National Guard Training Site, California. U.S. Department of Energy Topical Report No. EGG 10617-2162. EG&G Energy Measurements, Santa Barbara Operations, National Technical Service. Springfield Virginia.
- Sawyer, J.O., and T. Keeler-Wolf. 1997. Manual of California Vegetation, online version. Accessed from <http://endeavor.des.ucdavis.edu/cnps/> on June 5, 2007. Supported by CNPS, Information Center for the Environment, University of California-Davis Herbarium, and United States Geological Survey. Last update February 2000.
- Shaffer, H.B., and R. Fisher 1991. Final report to the California Department of Fish and Game; California tiger salamander surveys, 1990 -Contract (FG 9422). California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, California.
- Spiegel, L.K., and M. Bradbury. 1992. Home range characteristics of the San Joaquin kit fox in western Kern County, California. Transactions of the Western Section of the Wildlife Society 28:83-92.
- Stebbins, R. C. 2003. A Field Guide to Western Reptiles and Amphibians. 3rd Ed. Houghton Mifflin Company.
- Storer, T. I. 1925. A Synopsis of the Amphibians of California. University of California Publications in Zoology 27:1-342.
- Sycamore Associates LLC. 2003a. Early Evaluation for the San Joaquin Kit Fox, Vineyards at Marsh Creek, Brentwood, Contra Costa County, California.
- Sycamore Associates LLC. 2003b. Burrowing owl nesting season focused survey for the vineyards at March Creek Project, Brentwood, Contra Costa County, California.
- Tibor, D. 2001. Inventory of rare and endangered plants of California. California Native Plant Society, 6th Edition, Sacramento.
- Trenham P.C., H. Bradley Shaffer, W.D. Koenig, and M. R. Stromberg. 2000. Life History and Demographic Variation in the California Tiger Salamander (*Ambystoma californiense*). Copeia No. 2: 365-37.
- United States Fish and Wildlife Service (USFWS). 2007a. Endangered Species List web site. Sacramento Fish and Wildlife Office. http://sacramento.fws.gov/es/spp_list.htm. Dated January 30. Updated January 4, 2006.
- _____. 2007b. Federal endangered and threatened species that occur in or may be affected by projects in the [Brentwood, Clifton Forebay, Byron Hot Springs, Tassajara, Woodward Island, Antioch South, Bouldin Island, Jersey Island, Antioch North] U.S.G.S. 7/12 minute quad. Sacramento Fish and Wildlife Office. Updated March 5, 2007. http://www.fws.gov/sacramento/es/spp_list.htm

- _____. 2006. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Red-legged Frog, and Special Rule Exemption Associated with Final Listing for Existing Routine Ranching Activities. *Federal Register* [71:19243](#).
- _____. 2005. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for California tiger salamander, Central California Critical habitat units and excluded areas. *Federal Register* 70:49379-49458.
- _____. 2003. Endangered and threatened wildlife and plants; final designation of critical habitat for four vernal pool crustaceans and eleven vernal pool plants in California and Southern Oregon; Final Rule. 50 CFR Part 17 Vol. 68 (151): 46684-46867.
- _____. 2002. Endangered and Threatened Plant and Animal Taxa; Proposed Rule. 50 CFR part 17. September 24.
- _____. 1999. U.S. Fish and Wildlife Service Conservation Guidelines for the Valley Elderberry Longhorn Beetle. July 9, U.S. Department of the Interior, Fish and Wildlife Service, Sacramento Fish and Wildlife Office. Sacramento, California.
- _____. 1998. Recovery plan for upland species of the San Joaquin Valley, California. Region 1, Portland, Oregon.
- _____. 1984. Valley Elderberry Longhorn Beetle Recovery Plan. Portland, Oregon. 62 pp.
- _____. 1983. The San Joaquin kit fox recovery plan. Portland, Oregon.
- _____. 1980. Endangered and threatened wildlife and plants; Listing the valley elderberry longhorn beetle as threatened species with critical habitat. *Federal Register* [45:52803](#); August 8, 1980.
- White, P.J. and K. Ralls. 1993. Reproduction and spacing patterns of kit foxes relative to changing prey availability. *Journal of Wildlife Management*. 57:861-867.
- Zentner and Zentner. 2002. Section 404 Jurisdictional Delineation, Marsh Creek, Contra Costa County, CA. November.
- Zoellick et al. 1987a. Movements and home range of San Joaquin kit foxes on the Naval Petroleum Reserves, Kern County, California. U.S. Dept. of Energy Topical Report, EG&G/EM Santa Barbara Operations Report No. EGG 10282-2184. 38 pages.
- Zoellick et al. 1987b. Reproduction of the San Joaquin kit fox on Naval Petroleum Reserve #1, Elk Hills, California, 1980 - 1985. U.S. Dept. of Energy Topical Report, EG&G/EM Santa Barbara Operations Report No. EGG 10182-2144. 42 pages.

Appendix A
Project Description: Line 131 Class Change
at Marsh Creek

Appendix A

Project Description: Line 131 Class Change at Marsh Creek

PG&E plans to replace approximately 1,400 feet of its 24-inch natural gas pipeline Line 131 in Contra Costa County near the City of Brentwood. The purpose of the project is to comply with the California Public Utilities Commission's General Order 112E and the Department of Transportation's Federal Regulation CFR 49 Part 192 Safety Regulations. Due to recent and planned developments in the area, the location of this pipeline segment will be changing from class 1 to class 3. Therefore, this pipeline segment will need to be replaced with a pipe with higher safety margins to meet the regulations. This pipeline originates at PG&E's Brentwood station approximately two miles to the north of the project site.

Installation of the new pipeline segment will be completed using horizontal directional drilling. Two primary construction locations will be used for the installation, on a grazing field approximately 600 feet southwest of the John Marsh house and within the disturbed residential construction site to the north of Marsh Creek. Within the field, the bore contractor will excavate a pit approximately 12 feet wide by 12 feet long by 8 feet deep. This pit will contain the drilling fluids throughout the bore operation. Equipment needed for the bore operation will be located next to the pit in an area approximately 100 feet by 150 feet. This area will contain the drilling machine, a small crane, water truck, and an excavator. The drilling machine will be brought in on a semi and is self-leveling. In addition, the project will require 12 truckloads of support equipment including drill pipes, pumps, mud mixing equipment, and generators. The bore will be completed parallel to the existing Line 131 pipe and within the existing PG&E easement. The bore length will be approximately 1,325 feet with a minimum of approximately 25 feet of clearance under the creek bed.

Boring equipment, trucks, and other equipment will be refueled onsite. During boring operations, any groundwater encountered would be mixed with the boring mud. The drilling mud will be filtered and processed on site during the bore operations to be reused to cool the cutting head, lubricate the bore piping, and stabilize the bore hole. At the completion of the bore, the excess mud are planned to be hauled and disposed off site.

Once the pilot bore is complete, 1,325 feet of the new pipe will be laid out on the north side of Marsh Creek within the residential construction site. This existing, previously-graded site is currently being developed as part of the Vineyards housing development. The installation bore hole, construction office, materials, pipe layout, fabrication, testing, and parking will also be located within this development area. The laid-out pipeline will then be pulled through the bore hole by the drilling machine on the south side of Marsh Creek. The new pipeline will be the same size (24 inches in diameter) as the old pipeline.

After the pipe is installed, the bore pit excavation in the field to the south of the John Marsh house will be enlarged to approximately 12 feet wide by 30 feet long by 8 feet deep and used to extend the new pipe to tie into the existing pipeline at the south end of the project site. Similarly, the new pipe will be tied into the existing pipe at the north end of the project site within the Vineyards housing development.

When the bored pipe is in place and the pit is to be used for tying the new pipe into the existing gas line, any groundwater encountered in the pit will be pumped out and either released on a well-vegetated area of the field downhill from the pit or contained with the drilling mud to be

hauled off site. Best management practices (BMPs) will be implemented to protect soil and water quality during construction. BMPs will be described in the project Stormwater Pollution Protection Plan (SWPPP), and may include silt fences or straw wattles on the downstream border of the construction area, stockpiling soils at least 100 feet from drainages, providing secondary containment for hazardous materials stored within 100 feet of a drainage, and installing hydroseed and straw mulch after construction is completed. If needed, the boring pit can be lined.

Prior to construction, subsurface archaeological explorations will be conducted using a backhoe to determine the presence or absence of cultural materials. A maximum of eight backhoe trenches will be excavated in the area of the field drilling pit and pipeline tie-in. Each trench will be approximately three feet wide and 12 to 24 feet long. The depth of the excavations will be limited to approximately 15 feet, the maximum depth normally reached by a backhoe. Soil will be stockpiled immediately adjacent to the excavations. The deposits will be closely monitored for cultural materials as they are removed from the trenches, and will be periodically raked and/or screened to help ensure that cultural materials or human remains are identified, if present. The soil will be returned to the excavations when the exploration is complete.

The old pipeline will be left in place, except for the exposed portion spanning Marsh Creek. To remove the pipe that is currently spanning Marsh Creek, a crew will set up equipment, including two welding trucks containing the welding fuel, on the south side of the creek outside of the riparian area. This staging area will be approximately 30 feet by 60 feet. Welders will use hoses from the welding trucks on the south side of the creek to reach the north end of the pipe. A "Rough Terrain Crane" will be driven to the same area on the south side of the creek to remove the pipe after it is cut at both ends. The crane will be driven in on rubber tires or other low-ground-pressure construction equipment to avoid damaging soils. After the pipe is lifted by the crane, it will be placed on a trailer at the pipe removal staging area and driven off the site. Following removal of the pipe section crossing Marsh Creek, minor hand digging around the remaining pipe will be done to cut the pipe just below ground level. The cut ends of the remaining abandoned pipe will be filled with grout that will be carried from the staging area by hand. Workers will access the south end of the pipe from the staging area and the north side from the existing construction access in the residential development to the north. The pipe removal will be conducted during the dry season, when spawning fish would not be present in Marsh Creek.

Access to the John Marsh house field site will be via the Contra Costa County Water District road and then along the PG&E easement (see "Southern Access Route" on Figure 2 below). Access to the north staging site (Northern Access Route, not shown on Figure 2) will be from existing construction roads in the Vineyards development. Following construction, all equipment and materials will be removed and disturbed areas will be graded smooth and seeded with appropriate vegetation. The HDD activities, including earthwork, boring, and pipe installation, will take approximately two months; the construction will require approximately 15 to 20 workers for that portion of the work. Overall construction is expected to start in June 2008 and take approximately 4 to 5 months to complete, including site preparation, earthwork, pipe removal, and revegetation. Qualified environmental monitors will be present as appropriate to verify that measures to protect cultural and biological resources are being implemented. Work areas will be fenced to avoid injury to ranch animals. Gates will be closed during site ingress and egress to ensure livestock stay within the fenced ranch.

Several photos are also included below to show key features of the project site. The locations and view directions for the photos are shown on Figure 2 in the report.



Photo 1: Southern Access Route. Photo taken from levee road surrounding Marsh Creek Reservoir facing northeast. Access road connects to Marsh Creek Road. Photo date: 4/6/2005. Photo locations are shown on Figure 2 in the main document.



Photo 2: Marsh Creek upstream of existing gas pipeline crossing (10/13/2004).



Photo 3. Intermittent drainage facing northwest. Photo date: 04/06/2004



Photo 4. Marsh Creek where pipeline removal will occur, facing northeast (05/21/2007).



Photo 5. Potential California tiger salamander burrow within the project site.
Photo date: 05/21/2007



Photo 6. Intermittent drainage suitable for California red-legged frog (facing northwest).
Photo date: 04/17/2007



Photo 7. Intermittent drainage suitable for California red-legged frog with potential California tiger salamander burrows along the banks. Photo date: 04/17/2007

Appendix B
USFWS Species Letter and List

USFWS Species Letter and List

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office



2800 Cottage Way, Room W-2605
Sacramento, California 95825

June 6, 2007

Document Number: 070606030957

Pierre Fidenci
GANDA
1 Saunders Ave
San Anselmo, CA 94960

Subject: Not specified

Dear: Interested party

We are sending this official species list in response to your June 6, 2007 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be September 04, 2007.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at www.fws.gov/sacramento/es/branches.htm.

**Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 070604033450

Database Last Updated: March 5, 2007

Quad Lists

Listed Species

Invertebrates

- *Apodemia mormo langei*
 - Lange's metalmark butterfly (E)
- *Branchinecta conservatio*
 - Conservancy fairy shrimp (E)
- *Branchinecta longiantenna*
 - Critical habitat, longhorn fairy shrimp (X)
 - longhorn fairy shrimp (E)
- *Branchinecta lynchi*
 - Critical habitat, vernal pool fairy shrimp (X)
 - vernal pool fairy shrimp (T)
- *Desmocerus californicus dimorphus*
 - valley elderberry longhorn beetle (T)
- *Elaphrus viridis*
 - delta green ground beetle (T)
- *Incisalia mossii bayensis*
 - San Bruno elfin butterfly (E)
- *Lepidurus packardi*
 - vernal pool tadpole shrimp (E)

Fish

- *Acipenser medirostris*
 - green sturgeon (T) (NMFS)
- *Hypomesus transpacificus*

- Critical habitat, delta smelt (X)
- delta smelt (T)
- *Oncorhynchus mykiss*
 - Central California Coastal steelhead (T) (NMFS)
 - Central Valley steelhead (T) (NMFS)
 - Critical habitat, Central Valley steelhead (X) (NMFS)
- *Oncorhynchus tshawytscha*
 - Central Valley spring-run chinook salmon (T) (NMFS)
 - Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
 - Critical habitat, winter-run chinook salmon (X) (NMFS)
 - winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- *Ambystoma californiense*
 - California tiger salamander, central population (T)
 - Critical habitat, CA tiger salamander, central population (X)
- *Rana aurora draytonii*
 - California red-legged frog (T)
 - Critical habitat, California red-legged frog (X)

Reptiles

- *Masticophis lateralis euryxanthus*
 - Alameda whipsnake [=striped racer] (T)
 - Critical habitat, Alameda whipsnake (X)
- *Thamnophis gigas*
 - giant garter snake (T)

Birds

- *Haliaeetus leucocephalus*
 - bald eagle (T)
- *Rallus longirostris obsoletus*
 - California clapper rail (E)

- *Sternula antillarum* (=Sterna, =albifrons) browni
 - California least tern (E)

Mammals

- *Reithrodontomys raviventris*
 - salt marsh harvest mouse (E)
- *Vulpes macrotis mutica*
 - San Joaquin kit fox (E)

Plants

- *Amsinckia grandiflora*
 - large-flowered fiddleneck (E)
- *Cordylanthus mollis* ssp. mollis
 - soft bird's-beak (E)
- *Erysimum capitatum* ssp. angustatum
 - Contra Costa wallflower (E)
 - Critical Habitat, Contra Costa wallflower (X)
- *Lasthenia conjugens*
 - Contra Costa goldfields (E)
 - Critical habitat, Contra Costa goldfields (X)
- *Neostapfia colusana*
 - Colusa grass (I)
- *Oenothera deltoides* ssp. howellii
 - Antioch Dunes evening-primrose (E)
 - Critical habitat, Antioch Dunes evening-primrose (X)

Candidate Species

Fish

- *Oncorhynchus tshawytscha*
 - Central Valley fall/late fall-run chinook salmon (C) (NMFS)
 - Critical habitat, Central Valley fall/late fall-run chinook (C) (NMFS)

Quads Containing Listed, Proposed or Candidate Species:

WOODWARD ISLAND (463A)
BRENTWOOD (463B)
BYRON HOT SPRINGS (463C)
CLIFTON COURT FOREBAY (463D)
ANTIOCH SOUTH (464A)
CLAYTON (464B)
TASSAJARA (464D)
JERSEY ISLAND (480C)
BOULDIN ISLAND (480D)
ANTIOCH NORTH (481D)

County Lists

No county species lists requested.

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

Appendix C
Plants and Wildlife Observed During
Spring 2007 Surveys, Work Area and
Vicinity of Marsh Creek Line 131
Class Change

TABLE C-1. PLANTS AND WILDLIFE OBSERVED DURING SPRING 2007 SURVEYS

| Family | Scientific Name | Common Name | Notes |
|----------------------|---|------------------------------|---|
| Plant Species | | | |
| Apiaceae | <i>Foeniculum vulgare</i> | sweet fennel | introduced |
| Asclepiadaceae | <i>Asclepias fascicularis</i> | narrow-leaf milkweed | |
| Asteraceae | <i>Antennaria sp.</i> | | not blooming |
| Asteraceae | <i>Carduus pycnocephalus</i> | Italian thistle | introduced |
| Asteraceae | <i>Centaurea solstitialis</i> | yellow star-thistle | introduced |
| Asteraceae | <i>Coryza sp.</i> | horseweed | |
| Asteraceae | <i>Cynara cardunculus</i> | Artichoke thistle | introduced |
| Asteraceae | <i>Gnaphalium palustre</i> | western marsh cudweed | |
| Asteraceae | <i>Hemizonia pungens var. pungens</i> | common spikeweed | |
| Asteraceae | <i>Holocarpha virgata</i> | wand tarweed | |
| Asteraceae | <i>Psilocarpus brevissimus var. brevissimus</i> | woolly marbles | |
| Asteraceae | <i>Silybum marianum</i> | blessed milk thistle | introduced |
| Asteraceae | <i>Xanthium spinosum</i> | spiny cocklebur | |
| Azollaceae | <i>Azolla sp.</i> | mosquito fern | In freshwater marsh only |
| Boraginaceae | <i>Amsinckia menziesii var. intermedia</i> | common fiddleneck | |
| Boraginaceae | <i>Heliotropum curassavicum</i> | salt heliotrope | |
| Boraginaceae | <i>Plagiobothrys stipitatus var. micranthus</i> | stalked popcorn-flower | |
| Boraginaceae | <i>Plagiobothrys trachycarpus</i> | rough-fruited popcorn-flower | Rated "B" - (High Priority Watch-List, occurring in six to nine regions of Contra Costa and Alameda Counties) (Lake 2004) |
| Brassicaceae | <i>Hirschfeldia incana</i> | Jim-hill mustard | introduced |
| Brassicaceae | <i>Lepidium latifolium</i> | perennial pepperweed | introduced |
| Brassicaceae | <i>Raphanus raphanistrum</i> | jointed charlock | introduced |
| Brassicaceae | <i>Raphanus sativus</i> | wild radish | introduced |
| Caprifoliaceae | <i>Sambucus mexicanus</i> | blue elderberry | Host plant for valley elderberry longhorn beetle |
| Caryophyllaceae | <i>Spergularia rubra</i> | ruby sand-spurrey | introduced |
| Chenopodiaceae | <i>Atriplex sp.</i> | Saltbush | Incidentally on creek Initial leaves only Probably not affected by project activities |
| Chenopodiaceae | <i>Chenopodium album</i> | lamb's quarters | introduced |
| Chenopodiaceae | <i>Chenopodium murale</i> | nettle-leaved goosefoot | introduced |
| Convolvulaceae | <i>Convolvulus arvensis</i> | bindweed | introduced |
| Cupressaceae | <i>Cupressus(arizonica variety?)</i> | cypress | appears planted near the southern access route, out of project area |
| Cyperaceae | <i>Eleocharis macrostachya</i> | large spikerush | |
| Cyperaceae | <i>Scirpus acutus var. occidentalis</i> | hard-stemmed tule | In freshwater marsh only |
| Cyperaceae | <i>Scirpus maritimus</i> | saltmarsh bulrush | In freshwater marsh only |
| Euphorbiaceae | <i>Chamaesyce maculata</i> | spotted spurge | introduced |
| Euphorbiaceae | <i>Chamaesyce ocellata</i> | valley spurge | |
| Euphorbiaceae | <i>Eremocarpus setigerus</i> | dove-weed | |
| Fabaceae | <i>Medicago polymorpha</i> | bur-clover | introduced |
| Fabaceae | <i>Trifolium dubium</i> | little hop clover | introduced |
| Fabaceae | <i>Trifolium subterraneum</i> | subterranean clover | introduced |
| Fabaceae | <i>Vicia villosa</i> | vetch | introduced |
| Fagaceae | <i>Quercus douglasii</i> | blue oak | |

TABLE C-1. PLANTS AND WILDLIFE OBSERVED DURING SPRING 2007 SURVEYS

| Family | Scientific Name | Common Name | Notes |
|-------------------------|--|----------------------------------|--|
| Fagaceae | <i>Quercus lobata</i> | valley oak | |
| Frankeniaceae | <i>Frankenia salina</i> | alkali sea-heath | Incidentally on Marsh Creek banks |
| Geraniaceae | <i>Erodium botrys</i> | long-fruited stork's bill | introduced |
| Geraniaceae | <i>Erodium cicutarium</i> | red-stemmed filaree | introduced |
| Juglandaceae | <i>Juglans hindsii</i> (<i>J. californica</i> var. <i>hindsii</i>) | northern California black walnut | CNPS List 1B.1 in native stands; the ones in the work area appear planted |
| Lamiaceae | <i>Marrubium vulgare</i> | horehound | introduced |
| Lythraceae | <i>Lythrum hyssopifolium</i> | hyssop loosestrife | introduced |
| Malvaceae | <i>Malva neglecta</i> | common mallow | introduced |
| Malvaceae | <i>Malvella leprosa</i> | alkali mallow | |
| Onagraceae | <i>Epilobium brachycarpum</i> | annual fireweed | |
| Plantaginaceae | <i>Plantago lanceolata</i> | English plantain | introduced |
| Poaceae | <i>Avena fatua</i> | wild oats | introduced |
| Poaceae | <i>Bromus diandrus</i> | riggut | introduced |
| Poaceae | <i>Bromus hordeaceus</i> | soft chess | introduced |
| Poaceae | <i>Crypsis vaginiflora</i> | African pricklegress | introduced |
| Poaceae | <i>Cynodon dactylon</i> | Bermuda-grass | introduced |
| Poaceae | <i>Distichlis spicata</i> | saltgrass | |
| Poaceae | <i>Hordeum marinum</i> ssp. <i>gussoneanum</i> | Mediterranean barley | introduced |
| Poaceae | <i>Hordeum murinum</i> | hare-wall barley | introduced |
| Poaceae | <i>Lolium multiflorum</i> | Italian ryegrass | introduced |
| Poaceae | <i>Lolium perenne</i> | perennial ryegrass | introduced |
| Poaceae | <i>Polypogon monspeliensis</i> | annual beardgrass | introduced |
| Poaceae | <i>Vulpia cf. bromoides</i> | six weeks fescue | introduced |
| Polygonaceae | <i>Rumex crispus</i> | curly dock | introduced |
| Polygonaceae | <i>Rumex pulcher</i> | fiddle dock | introduced |
| Salicaceae | <i>Populus fremontii</i> | Fremont's cottonwood | in Marsh Creek, not in work area |
| Salicaceae | <i>Salix goodingii</i> | Gooding's black willow | in Marsh Creek, not in work area |
| Solanaceae | <i>Nicotiana glauca</i> | tree tobacco | introduced |
| Solanaceae | <i>Physalis acutifolia</i> | ground cherry | |
| Typhaceae | <i>Typha latifolia</i> | cattails | freshwater marsh habitat only |
| Urticaceae | <i>Urtica urens</i> | dwarf nettle | introduced |
| Verbenaceae | <i>Phyla nodiflora</i> (var. <i>nodiflora</i>) | lippia | |
| Wildlife Species | | | |
| | <i>Rana catesbeiana</i> | bullfrogs | included numerous second-year tadpoles along Marsh Creek and the intermittent drainage |
| | <i>Actinemys marmorata</i> | Western pond turtle | one observed at Marsh Creek Reservoir |
| | <i>Coluber constrictor</i> | racer | one observed within project site |
| | | ground squirrels | several observed |
| | <i>Buteo swainsoni</i> | Swainson's hawk | one pair observed within project site |

TABLE C-1. PLANTS AND WILDLIFE OBSERVED DURING SPRING 2007 SURVEYS

| Family | Scientific Name | Common Name | Notes |
|---------------|----------------------------|-----------------------|---|
| | <i>Agelaius phoeniceus</i> | red-winged blackbirds | several observed at Marsh Creek Reservoir |

Appendix D
Avoidance and Minimization Measures

General Protection and Mitigation Measures for the Line 131 Project

The following general protection and mitigation measures will be implemented to minimize impacts to special status species in the action area:

1. A qualified biologist will provide all employees in the work area with a worker awareness program before any ground disturbing activities within the work area begin. ("Employees" as used in these Avoidance Recommendations includes all PG&E employees, consultants, contractors and construction crew personnel.) This program will be used to describe the vernal pool branchiopods, valley elderberry longhorn beetle, California tiger salamander, California red-legged frog and San Joaquin kit fox, their habitats, legal status and required protection and all applicable mitigation measures.
2. PG&E shall appoint a representative who will be the contact source for any employee who might inadvertently kill or injure a vernal pool fairy branchiopod, valley elderberry longhorn beetle, California tiger salamander, California red-legged frog or San Joaquin kit fox or who finds a dead, injured or entrapped individual. The representative shall be identified during the worker-awareness program. The representative's name and telephone number shall be provided to the USFWS prior to the initiation of ground disturbing activities.
3. At all times in which a qualified biologist is not present at the work area, PG&E shall designate a person to monitor onsite compliance with all conservation/ minimization/ avoidance measures during construction. A USFWS-approved biologist shall ensure that this individual receives training in the identification of vernal pool branchiopods, valley elderberry longhorn beetle, California red-legged frog, California tiger salamander and San Joaquin kit fox. The monitor and the USFWS-approved biologist shall have the authority to halt any action that might result in the death, injury or harassment of vernal pool branchiopods, valley elderberry longhorn beetle, California red-legged frog, California tiger salamander or San Joaquin kit fox. If work is stopped, the USFWS shall be notified immediately by the approved biologist or onsite biological monitor.
4. Do not use plastic mono-filament erosion control matting for erosion control where California red-legged frog and/or California tiger salamander may become entangled or trapped in it.
5. Install exclusion fencing (orange construction fencing) around the dig site (excavation and stockpile areas).
6. Return work area to pre-existing contour, evaluate, and proceed with any necessary restoration measures (including reseeding and/or erosion control).
7. Keep vehicles on established access road and within delineated work area unless off-road access is approved by a qualified biologist.
8. Nighttime construction will be minimized as much as possible.
9. To prevent accidental entrapment of California tiger salamander, California red-legged frog or San Joaquin kit fox during construction, escape ramps and/or fencing as appropriate will be installed at the direction of the biological monitor at all excavated holes and trenches. Trenches will be inspected by the biological monitor prior to work

starting each day. Before such holes are filled, they shall be thoroughly inspected for trapped animals. In the event of a trapped animal, ramps or other type of structure shall be installed immediately to allow the animal to escape. The USFWS will be notified in the event a special-status species was identified.

Specific Protection and Mitigation Measures for Special-Status Species in Action Area

Vernal Pool Branchiopods

The following avoidance and minimization measures will be implemented to minimize impacts to seasonal wetland habitats outside the Line 131 footprint that may support vernal pool fairy shrimp and longhorn fairy shrimp.

1. Establish a 6-foot buffer from the outer edge of all hydric vegetation associated with vernal pools and swales.
2. Buffers will be marked by brightly colored fencing or flagging throughout the construction process.

Valley Elderberry Longhorn Beetle

The following avoidance and minimization measures, based on measures in the 1999 Conservation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS 1999b), will be implemented to avoid and minimize impacts to valley elderberry longhorn beetles in the action area:

1. All construction access, staging areas, and construction vehicle use will be more than 100 feet from elderberry shrubs, and all such areas and equipment will be fenced to prevent access by grazing horses present on the ranch. All human activity, including removal of the pipeline spanning Marsh Creek using hand tools, will be more than 75 feet from elderberry shrubs. No adverse affects to valley elderberry longhorn beetle will occur when these distances are maintained.
2. Erect signs every 50 feet along the edge of the avoidance area with the following information: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be clearly readable from a distance of 20 feet and must be maintained for the duration of construction.
3. Restore any damage done to the buffer area during construction. Provide erosion control and re-vegetate with appropriate native plants. No activities for project operation will occur on the ranch following construction, so buffer areas are not needed following construction and revegetation.
4. No insecticides, herbicides, fertilizers or other chemicals that might harm the beetle or its host plant should be used in the buffer areas, or within 100 feet of any elderberry plant within one or more stems measuring 1.0 inch or greater in diameter at ground level.

5. Mowing of grasses/ground cover may occur from July through April to reduce fire hazard. No mowing should occur within five feet of elderberry plant stems. Mowing must be done in a manner that avoids damaging plants (e.g., stripping away bark through careless use of mowing/trimming equipment)

California Red-legged Frog

The following avoidance and minimization measures, based on measures in the 1999 USACE Programmatic Biological Opinion for Red-Legged Frog, will be implemented to avoid and minimize impacts to red-legged frog in the action area:

1. At least 15 days prior to the onset of activities, the applicant or project proponent shall submit the names(s) and credentials of biologists who would conduct activities specified in the following measures. No project activities shall begin until proponents have received written approval from the USFWS that the biologist(s) is qualified to conduct work.
2. A USFWS-approved biologist shall survey the work site two weeks before the onset of activities. If California red-legged frogs, tadpoles, or eggs are found, the approved biologist shall contact the USFWS to determine if moving any of these life-stages is appropriate. In making this determination the USFWS shall consider if an appropriate relocation site exists. If the USFWS approves moving animals, the approved biologist shall be allowed sufficient time to move California red-legged frogs from the work site before work activities begin. Only USFWS-approved biologists shall participate in activities associated with the capture, handling and monitoring of California red-legged frogs.
3. A USFWS-approved biologist shall be present at the work site until such time as all removal of California red-legged frogs, instruction of workers, and habitat disturbance have been completed. After this time, the contractor or permittee shall designate a person to monitor on-site compliance with all minimization measures. The USFWS-approved biologist shall ensure that this individual receives training and in the identification of California red-legged frogs. The monitor and USFWS-approved biologist shall have the authority to halt any action that might result in impacts that exceed the levels anticipated by the Corps and USFWS during review of the proposed action. If work is stopped, the Corps and USFWS shall be notified immediately by the USFWS-approved biologist or on-site biological monitor.
4. During project activities, all trash that may attract predators shall be properly contained, removed from the work site and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas.
5. All fueling and maintenance of vehicles and other equipment and staging areas shall occur at least 100 feet from any riparian habitat or water body, or visquene plastic with adequate secondary containment will be used to fuel stationary equipment within 100 feet. The Corps and permittee shall ensure contamination of habitat does not occur during such operations. Prior to the onset of work, the Corps shall ensure that the permittee has prepared a plan to allow a prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

6. A USFWS-approved biologist shall ensure the spread or introduction of invasive, exotic plant species shall be avoided to the maximum extent possible. When practicable, invasive exotic plants in the project areas shall be removed.
7. Project sites shall be revegetated with an appropriate assemblage of native riparian and upland vegetation suitable for the area, at the direction of a qualified botanist.
8. The number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to achieve the project goal. Routes and boundaries shall be clearly demarcated and these areas shall be outside of riparian and wetland areas. Where impacts occur in these staging areas, restoration shall occur as identified in measure 7 above.
9. Work activities shall be completed between April 1 and November 1. Should the proponent or applicant demonstrate a need to conduct activities outside this period, the Corps may authorize such activities after obtaining the USFWS approval.
10. To control erosion during and after project implementation, the applicant shall implement best management practices, as identified by the appropriate Regional Water Quality Control Board.

In addition to these measures, the following measure should be implemented:

11. Burrow complexes along overland access routes will be flagged and avoided to the degree feasible.

California Tiger Salamander

The avoidance and minimization measures recommended for California red-legged frog will also be implemented to avoid and minimize impacts to California tiger salamander.

San Joaquin Whipsnake

The avoidance and minimization measures recommended for California red-legged frog will also be implemented to avoid and minimize impacts to San Joaquin whipsnake.

Western Pond Turtle

1. Complete pre-construction surveys for western pond turtle. Any individual western pond turtles found on the project site during pre-construction surveys will be relocated by a qualified biologist.
2. Construction zone limits around the project work areas will be set up using fencing to restrict access by turtles into construction areas. Any turtle found in the construction area will be relocated by a qualified biologist outside the construction zone.

San Joaquin Kit Fox

The following mitigation measures will be implemented to avoid and minimize impacts to San Joaquin kit fox in the action area:

1. PG&E shall comply with the USFWS's "Standard recommendations for the protection of the San Joaquin kit fox prior to or during ground disturbance" (USFWS 1999a) (Appendix E).

2. Pre-construction surveys shall be conducted in the work area no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities that are likely to impact the San Joaquin kit fox.
3. Project-related vehicles shall observe a 10-mph speed limit in project areas deemed to provide kit fox habitat, except as posted on county roads, and state and federal highways. Nighttime construction will be avoided (USFWS 1999a).
4. All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at the work area for one or more overnight periods will be thoroughly inspected for kit foxes before the pipes are subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe will not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of a qualified biologist, the pipe may be moved once to remove it from the path of construction activity, until the kit fox has escaped.
5. PG&E shall appoint a representative who will notify the USFWS immediately in the event of an accidental death or injury to a kit fox during project-related activities, and a follow-up letter will be submitted within 3 working days of the accident.

Aquatic Species in Marsh Creek

All in-stream work will be conducted between July and October, when Marsh Creek is dry. Although not known or expected to occur on the Line 131 site, the following measures will be implemented to minimize potential impacts to Central Valley steelhead and Central Valley chinook salmon in the lower reaches of Marsh Creek:

1. A site specific Storm Water Pollution Prevention Plan will be developed and implemented to limit construction debris and runoff from entering Marsh Creek during Line 131 construction.
2. Silt fence, weed-free hay bales and booms, and other sedimentation and erosion control devices will be placed in strategic locations downstream of the construction area as appropriate to prevent materials from entering Marsh Creek.

Burrowing Owl

1. If appropriate, CDFG protocol-level surveys for the burrowing owl will be completed by qualified biologists the season before construction is to take place.
2. A pre-construction survey for burrowing owls conducted by a qualified biologist will be completed prior to construction activities within the project area. The pre-construction surveys will be conducted per CDFG guidelines (currently no more than 30 days prior to the start of site grading), regardless of the time of year in which grading occurs. If no burrowing owls are found within the project site or within an additional 250-foot radius, then no further action is warranted. If burrowing owls are present in the project area during the non-breeding season between September 1 and January 31, a 160 foot-buffer will be established around occupied burrows. If burrowing owls are present in the project area during the breeding season between February 1 and August 31, a 250 foot-buffer will be established around the occupied burrows.

3. If impacts to occupied burrows are unavoidable, on-site passive relocation by a qualified biologist will be implemented in conjunction with CDFG.
4. Temporary impacts to potential foraging habitat will be mitigated through revegetation of disturbed areas following construction.

Nesting Birds

Pre-construction nest surveys will be conducted prior to the start of construction if construction occurs during the breeding season (February 1- August 15). If results of the pre-construction surveys indicate that special-status bird species are nesting on-site, standard mitigation measures will be implemented. Mitigation measures may include one or more of the following activities.

1. Delays in construction in the area of the nest until the young have fledged.
2. Passive relocation techniques (e.g. removal of nesting habitat prior to the breeding period).
3. The presence of a biological monitor during construction.

Appendix B
Cultural Resources Survey Summary



Friday, August 10, 2007

Maggie Trumbly, Cultural Resources Specialist
Pacific Gas and Electric Company
Environmental Services
375 N. Widget Lane, Suite 200
Walnut Creek, CA 94598

Re: Summary of Archaeological Records Search, Native American Consultation, and Field Survey for the Proposed Line 131 Project at Marsh Creek, Contra Costa County, California

This letter summarizes the results of an archaeological records search, Native Americans consultations, and archaeological surface survey performed by Far Western for the Line 131 project at the request of PG&E. The project area is located in an un-sectioned portion of the Los Meganos Land Grant southwest of the town of Brentwood in eastern Contra Costa County. Part of the project area lies in a proposed State Historic Park that contains numerous prehistoric and historical cultural resources. In order to verify the location of any previously recorded resources, the records search included a one-mile area in and around the project area.

The results of the records search, provided by the Northwest Information Center of the California Historical Resources Information System, indicates that five previously recorded sites are located in or near the project area, while another five sites are located within one-mile of the project. Of those located in or near the project, one is a historical dam/bridge (CCO-674H), two are prehistoric deposits (CCO-438, -548), and one is both prehistoric and historical (CCO-18/H "John Marsh House"). The John Marsh House is depicted on early historical maps, and is considered eligible to the National Register of Historic Places as a structure of historical and architectural significance. The search also indicates that at least eight previous archaeological studies have been conducted in or near the project area, another six studies conducted within one-mile.

Far Western requested that the Native American Heritage Commission check the sacred lands files for cultural resources in the study area, and provide a list of Native Americans in the region who might be able to provide information about the area. The sacred land file showed no Native American resources in the project area. Far Western mailed project descriptions and maps to the contacts provided by the Commission in June 2007. As a result, a response was received from Andrew Galvan asking to be included in the consultation process and personal contact was made with Ramona Garibay; Kathy Perez did not respond. Based on these initial consultations, it appears that Ramona Garibay would serve as the Most Likely Descendant (MLD) for the project.

An intensive pedestrian archaeological survey of the ground surface was performed in the project area and surrounding State Park property in June 2007. As a result, a dispersed scatter of prehistoric archaeological materials was found to extend across the project's proposed Boring Area, and across much of the surrounding floodplain. In addition, a portion of a historical irrigation ditch was identified in part of the Boring Area, and two previously unidentified historical foundations were located on either side (east and west) of PG&E's pipeline easement. No cultural resources were identified in the project's proposed Pipe Removal Area. The overall spatial extent of the prehistoric and historical archaeological remains suggests that the boundaries of CCO-18/H should be extended to include most of the surrounding Park property.

Far Western will use this information to formulate a plan to identify, evaluate, and mitigate potentially important cultural resources that may be adversely impacted as a result of project-related activities, primarily in the Boring Area vicinity.

Sincerely,

Jack Meyer
Principal Geoarchaeologist

Cc: Andrea Gardner, CH2M Hill

