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February 18, 2010

Mr. Craig Cooper, Project Manager
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**Subject: Biological Assessment for the Santa Susana Field Laboratory Area IV
Radiological Study, Ventura County**

Dear Mr. Cooper:

The California Department of Fish and Game (Department) has reviewed the above-referenced draft Biological Assessment (BA) dated December 11, 2009. The draft BA was prepared to support the United States Fish and Wildlife Service's Section 7 consultation on the Environmental Protection Agency's (EPA) upcoming radiological study at the Santa Susana Field Laboratory (SSFL) Area IV. This area is located in the Santa Susana Mountains, southeast of Simi Valley and west of Chatsworth in Ventura County, California.

The EPA proposes to undertake radiological characterization of a portion of the SSFL, consisting of "Area IV" (290 acres) and an adjacent undeveloped area called the Northern Buffer Zone (NBZ, 182 acres). Both areas are owned by the Boeing Company. The United States Department of Energy and its contractors had previously operated several nuclear reactors and associated fuel facilities in Area IV. The proposed studies are intended to determine the presence of radioactive contamination in surface soils, subsurface soils, groundwater, surface water and sediments within Area IV and the NBZ. The EPA desires to initiate testing in the very near future (i.e. desired start date February 1, 2010).

The proposed characterization emphasizes the use of various gamma testing devices to detect radioactivity in surface soils. These range from hand held detection devices to vehicle-driven devices (the latter device delivers more accurate test results). To access areas to be tested in vehicles and with equipment, and to allow optimal operation of the scanning equipment, EPA proposes to trim, cut or mow vegetation in the accessible portions of the project area down to 6-18 inches in height in order to obtain gamma testing readings and 100 percent coverage. Generally, trees would not be pruned or cut (i.e. coast live oak (*Quercus agrifolia*) and California walnut (*Juglans californica*)).

Other characterizations will involve sampling surface and subsurface soils (3,500 sample sites) and sampling surface water and sediments.

The SSFL site is located on the top of Santa Susana Mountains and occupies considerable amounts of sandstone rock outcrop habitat. Developed portions of the site are frequently located in small valleys between natural rock outcrops, with gentle to flat topography. Numerous previously existing buildings and infrastructure features have been removed from the site in recent years. The area supports an important population of the state listed rare plant, Santa Susana tarplant, (*Deinandra minthornii*), a local endemic which is largely limited to

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occupying sandstone formations in this local geographic area. In addition, the federally endangered Braunton's milkvetch (*Astragalus brauntonii*) occurs on the project site and a portion of Area IV contains federally designated Critical Habitat for this species.

Surveys conducted last November, 2009, documented approximately 18,000 Braunton's milkvetch, largely in the Critical Habitat area, and the population there is responding to a 2004 wildfire which removed competing vegetation and stimulated germination from a stored soil seed bank. Roughly 679 locations for Santa Susana tarplant were documented and concentrated in sandstone formations. Tarplants were also documented occupying low competition growing sites in previously disturbed areas and along roadsides. To date, biological field assessments for wildlife and other sensitive biological resources have not been completed over much of the site, but some additional assessment work is planned. Generally, the site supports extensive rock outcrops with nesting sites for raptors, bats, swifts and other cavity nesting birds; chaparral, coastal scrub and coast live oak woodland habitats recovering from a 2004 wildfire; and ephemeral and intermittent drainages, localized springs and wetlands, moss outcrops, grassland pockets and ruderal areas.

The proposed radiological characterization effort is being proposed by the EPA pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), with funding from the American Recovery and Reinvestment Act of 2009. There are currently no plans to complete a California Environmental Quality Act analysis for the radiological testing, although it is our understanding that the California Department of Toxic Substances Control is the lead agency for the overall site cleanup, to be addressed at a later date and after the results of radiological testing have been completed and analyzed.

The Department appreciates this opportunity to provide comments on the draft BA. The project description includes proposed avoidance and minimization measures for some biological resources which fall under the purview of the United States Fish and Wildlife Service and their Section 7 consultation process, pursuant to the federal Endangered Species Act. Our comments on the BA and recommendations for additional avoidance and minimization measures are included here in Attachment 1, and are intended to assist the EPA in developing subsequent Work Plans addressing the affected biological resources.

Thank you for this opportunity to provide comment. Please contact Ms. Mary Meyer, Staff Environmental Scientist, at (805)640-8019, if you should have any questions and for further coordination on the proposed project.

Sincerely,



 Edmund Pert
Regional Manager
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ATTACHMENT 1

A variety of state-trustee wildlife resources are not directly addressed in the draft BA. While we understand that this document was prepared in support of a federal Section 7 consultation, the Department is not clear where or how state trustee resources will be addressed. California Species of Special Concern and other rare or sensitive plant and animal species lacking any federal status are not addressed in the BA. The Department recommends that avoidance and minimization of impacts to state trustee resources be addressed in the upcoming Work Planning effort. The Department recommends further coordination to ensure state-trustee wildlife resources are adequately addressed during project implementation. Two plant species that are of concern include a sensitive species that may co-occur in Braunton's milkvetch carbonate soils areas is *Nolina cismontana* (CNPS List 1b), and *Baccharis malibuensis*, which the Department understands may occur on the site (CNPS 1b; Carl Wishner pers. comm.).

We recommend that specific measures be developed in coordination with the Department to address protection of sensitive reptiles and amphibians during this site evaluation and testing process.

The following comments are specific to the BA:

Page 4: The Proposed Action - This section indicates that since the scope of further investigations is unknown, the Action Agency is unaware of interrelated or interdependent actions. This section should note that it is reasonably foreseeable that some further cleanup, soil removal, vegetation and/or habitat clearing, may occur in the future as a result of the outcome of this testing, but that the scope and extent cannot reasonably be characterized at this time.

General Avoidance and Minimization Measures (BA starting on pg 8)

GEN-2: This measure needs to be more clearly articulated and developed. This measure should address the following:

- Introduction of new weeds on personnel (footwear, socks, hand tools) and equipment entering the property from offsite locations (ie. not just onsite).
- Please describe the mechanism through which "areas of weed infestation" are identified (Will they be mapped? Do they correspond ONLY to areas previously identified as "ruderal" or "previously disturbed"?)
- Please clarify if weed infestations within natural habitat areas are intended to be addressed in Gen-2?
- Personnel and equipment operating in ruderal areas, in weedy areas or in identified infestation areas elsewhere- need to be restricted from entering all natural habitat areas and this measure should not be limited to "listed species habitat" only.

GEN-3: Braunton's milkvetch (FE) - This measure needs to describe what distance would be used for demarcation via fencing or flagging. We recommend approximately three meters.

GEN- 4: Both *Pentachaeta lyonii* and *Chorizanthe parryi* var. *fernandina* are state listed endangered species, and if they are detected during proposed surveys, this measure should indicate that direct coordination with the Department will be required under the California Endangered Species Act. Clearing of herbaceous vegetation via trimming in locations that may support these rare annuals should be limited to eighteen inches and no lower. Only light weight testing equipment should be allowed inside any occupied habitat areas. Further limitations may be required, depending upon survey results and specifics at the locations involved. Since both plants are state listed species, direct coordination with the Department should be initiated if these taxa are found.

Vegetation Cutting Section (BA, starts page 10) - The Department recommends more avoidance measures be incorporated into the project description and associated work planning documents to further reduce the potential for adverse impacts to onsite vegetation and habitats, much of which is recovering from the 2004 wildfire. We found no direct description of when this fire occurred and what acreage and habitats were affected.

This section should acknowledge the potential for some damage to the vigor of recovering vegetation. As an example, trimming chamise to six inches during the active growing season is similar to a spring prescribed burn- some studies have found that chamise may fail to re-shoot following removal of above ground biomass during the active growing season, particularly springtime, potentially because the below ground root system lacks sufficient carbohydrate reserves to recover from burns at that time. Shrub species other than chamise may experience similar adverse effects from cutting. Trimming in late summer or fall may have less damaging effects because carbohydrate reserves will have built back up again in the root system by that time.

Page 10 of the draft BA states that "Vegetation cutting will be conducted in a manner which does not cause irreparable damage to vegetation and candidate species of plants and animals." It is not clear what this statement actually means. Cutting five-year old early seral chaparral and coastal scrub recovering from the 2004 wildfire is similar to re-burning the stand and imposing a high fire frequency return interval to those areas. These habitats may require a longer period of post-fire recovery than they are being provided. Obligate seeding shrubs which do not re-shoot after wildfires may fail to regenerate if young plants are cut now and their seed banks are not yet replenished (e.g. certain species of *Ceanothus*).

We recommend that hand devices be used to obtain readings beneath oak trees rather than having limbs cut as described in the first paragraph page 10.

Considerable habitat trampling can occur from gathering up trimmed vegetation, chipping and piling.

Provisions for avoidance of impacts to areas of streambed jurisdiction are lacking in this section. We also recommend post-treatment monitoring of chip piles to ensure they do not become weedy, where placed in natural habitat areas.

VC-2: This measure should indicate that root crowns, burls and other features that enable re-shooting, will not be injured during trimming. This could vary by species and individual.

Braunton's milkvetch: We recommend modifications to **VC-3** and consideration of the following in designing avoidance and minimization measures for this endangered plant:

- All Braunton's milkvetch that still contain pods on standing otherwise dead biomass should be retained in place and fully avoided.

The pods retain back-locule seed for some time, held in an aerial seed bank. This aerial seed bank needs to be maintained and not impacted. Distribution of cut or trimmed branches as proposed here may have adverse effects that we don't entirely understand (ie. there is some adaptive reason why these plants and their relatives chose to not release all their seed to the ground at once).

- All Braunton's milkvetch (live and/or still with pods) should be protected from trimming and removal and no trimming of woody vegetation within one meter of any living or recently alive (with pods) individual should occur.

Adjacent shrubs were observed to be protecting some Braunton's milkvetch from herbivory and fruit removal by deer. Loss of fruits reduces the long term viability of the population. It could be decades before another wildfire-induced recruitment event occurs.

The reasons for cutting of individual outlying live Braunton's milkvetch proposed in the draft BA are not clear and we do not believe cutting such individuals is necessary, especially given their narrow stature and availability of testing protocols that can obtain readings surrounding the individual plant.

There is potential for the project to affect Braunton's milkvetch seed bank and germination. It should be acknowledged that physically accessing occupied habitat areas with hand crews, and light-moderate weight equipment- may stimulate mechanical germination from the dormant seed bank. This has occurred at other locations in the past. This could have an adverse effect if subsequent growing conditions for Braunton's milkvetch are unsuitable for some reason. We need to document if this in fact occurs in the milkvetch habitat areas with an appropriate monitoring effort.

It also needs to be acknowledged that native herbivores will potentially increase herbivory on recovering cut vegetation. Mule deer, for instance, will be attracted to areas where brush has been trimmed and new shoots are emerging from bases, etc. This can occur within a couple of weeks of trimming, depending on soil moisture and vigor. Browse could have negative spill-over effects on Braunton's milkvetch and other desirable species vulnerable to herbivory by deer or rabbits.

There is the potential that if vegetation is cut in the Critical Habitat area, we could end up triggering germination of new milkvetch plants from the dormant seed bank through trampling and scarification effects. Deer will then be attracted to the area due to new re-shoots on cut browse species. Herbivory by rabbits may also increase in areas within one - three meters of denser shrub cover (offsite edges, for instance, or untrimmed retained cover areas). The end result could be that we end up with a reduction in reproductive output critical to sustaining the Braunton's milkvetch population over time.

To address this issue, we recommend monitoring following treatments to determine if Braunton's milkvetch have been stimulated to germinate in the treatment area. Areas where this occurs or areas with concentrations of live adults from the 2004 cohort still remain, may need to be protected by erecting temporary deer exclusionary fencing to prevent loss of biomass and fruits.

It should also be noted that the unburned hill immediately to the west of Braunton's milkvetch Critical Habitat may contain carbonate soils and may in fact be occupied by seed bank. The potential for milkvetch to emerge following mechanical work and trampling effects should be considered here. Post-treatment monitoring and potential temporary exclusionary deer-proof fencing may be needed here as well.

VC-4 vernal pool species- This measure needs to more clearly identify what a significant negative change in runoff patterns might be. Generally, this work should be designed to result in no measurable change in runoff or increased erosion. VC-4 should allow only hand crews to operate and hand held devices.

VC 5 and 6: California red-legged frog. These measures apply to aquatic and riparian habitats, this serves as a good location to discuss avoidance measures for areas of Department streambed jurisdiction.

Stream channels:

Trimming of vegetation associated with the bed, bank or channel of drainages (including ephemeral drainages, some of which are depicted on BA Fig. 3) would require notification under F&G Code Section 1600 et seq. and may require issuance of a streambed alteration agreement. We recommend avoidance of jurisdictional areas, and direct coordination with our streambed permit staff.

Generally, all woody and herbaceous vegetation associated with the stream channels, whether they are riparian species, phraeatophytes, or not riparian, should be retained intact and not trimmed or cut. Hand held and non-motorized measurement devices should be used in these areas.

To reduce the potential for sedimentation into stream channels, we also recommend maintaining a buffer filter zone of at least 10-20 feet wide on either side of the stream channels, thereby protecting all herbaceous and woody vegetation in that zone.

VC-8: This measure describes rare annuals and the potential for mowing their habitat. The mowing methodology and equipment to be used for that purpose is not identified. Standing plants will need to be protected and mowing or weed whacking could damage some seed output or disperse it into nearby unsuitable areas.

VC-10: This measure addresses the state listed rare Santa Susana tarplant *Deinandra minthornii*, which was included in the draft BA although it has no federal status. Will tarplants be flagged or otherwise marked in some manner? Or, is protection based strictly upon being observed by biological monitors? Our interpretation of the proposed measure indicates that no live tarplants would be trimmed. Please let us know if this is incorrect.

Geophysical Surveys:

Page 13 of the draft BA indicates that personnel and equipment may impact listed or migratory nesting birds. Impacts to nesting birds of any type will also occur if habitats are cut down during the bird nesting season or equipment is operated in areas where birds are nesting. Several state and federal laws prohibit destruction of bird nests, eggs, or their young. Adequate provisions to prevent loss of birds and bird nests are not addressed here or in other sections.

The Department recommends that project activities (including disturbances to vegetation) should take place outside of the breeding bird season (February 1-September 1) to avoid take (including disturbances which would cause abandonment of active nests containing eggs and/or young). If project activities cannot avoid the breeding bird season, nest surveys should be conducted and active nests should be avoided and provided with a minimum buffer as determined by a biological monitor (the Department recommends a minimum 500-foot buffer for all active raptor nests).

Substantial buffers are typically necessary to prevent abandonment of active nests when human disturbances get too close. We recommend further coordination with the Department on this issue.

Soil Sampling:

This section describes the potential for 3,500 samples across the site using some type of "rig" which will drill multiple holes (around 3.25 inches diameter, depths vary). We estimate this is one sample per 0.13 acres. More information is needed here to better determine whether there is potential for soil compaction from the "rig" used, and potential to damage tree root systems, and seed bank for sensitive annuals and listed plants.

Surface Sediment sampling in streams and seeps:

The volume of sediment samples should be identified on page 15.

Miscellaneous comments on the Species Descriptions Section IV:

Page 22: Braunton's milkvetch writeup: This section should note that seed bank is present year round in the soil and could experience damage from trampling, mechanical disturbance, or abrasion at any time.

Page 22: Lyon's pentachaeta: Same comment as above.

Marcescent dudleya: Is a state listed rare plant - this should be noted in the BA.

San Fernando Valley Spineflower: Please note the state listing status in revisions to the draft BA. The citation from 2000 is based upon early work on this species from the Ahmanson Ranch site and does not reflect additional observations from the Newhall Ranch site. With regard to the information presented here, this taxon has been observed in areas dominated by annual grasses and can occur in areas that could be characterized as supporting continuous annual grass cover. Plant stature can vary considerably. The comments that the plant is "hardy" may be somewhat misleading. It is a fragile annual, brittle, and vulnerable to trampling/breakage and this can have

negative effects on reproductive output if clusters of flowers or fruits break off before seeds have matured.

Page 35: Riverside Fairy Shrimp: The vernal pool in Moorpark supporting this species occurs within the Tierra Rejada Preserve (we do not call it Carlsberg). The state and federally endangered *Orcuttia californica* co-occurs with the fairy shrimp at this site and therefore, could potentially occur in similar habitats in the project area.

Section VI: Effects of the Action

Page 50: Santa Susan Tarplant: During our site visit in late September in dry conditions, the branches of tarplant broke off when bent and were not flexible. We suspect the flexibility observed in November may be the result of some re-hydration following October rains. Radiological scanning down to six inches by flattening existing plants could lead to unacceptable breakage, and we recommend that if breakage is occurring, either reading must be taken at 12-18 inches, or restricted to the immediately adjacent area avoiding direct placement on tarplants.