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METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Executive Office

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RESOURCE AREA

JUNE 15, 2010 **Via Electronic & U.S. Mail**

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Bureau of Land Management
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To Whom it May Concern:

Notice of Availability of the Draft Environmental Impact Statement/Staff Assessment for the Chevron Energy Solutions/Solar Millennium Palen Solar Power Plant and Possible California Desert Conservation Area Plan Amendment; CEC Docket No. 09-AFC-7, BLM Docket No. CACA 48810

The Metropolitan Water District of Southern California (Metropolitan) reviewed the Draft Environmental Impact Statement/Staff Assessment (collectively, "DEIS") for the Chevron Energy Solutions/Solar Millennium Palen Solar Power Plant and Possible California Desert Conservation Area Plan Amendment (Project). The U.S. Bureau of Land Management (BLM) is the lead agency under the National Environmental Policy Act (NEPA) for the DEIS and the California Energy Commission (CEC) is the lead agency (for licensing thermal power plants 50 megawatts and larger) under the California Environmental Quality Act (CEQA) and has a certified regulatory program under CEQA. Under its certified program, CEC is exempt from having to prepare an environmental impact report. Its certified program, however, requires environmental analysis of the project or a "staff assessment," including an analysis of alternatives and mitigation measures to minimize any significant adverse effect the project may have on the environment.

Metropolitan is pleased to submit comments for consideration by BLM and CEC during the public comment period for the DEIS and staff assessment.[1] In sum, Metropolitan provides these comments to ensure that any potential impacts on its facilities in the vicinity of the Project and on the Colorado River water resources are adequately addressed.

Background

[1] Comments on the DEIS and Revised Staff Assessment are due July 1, 2010 per the Federal Register notice. 75 Fed. Reg. 16786 (April 2, 2010). This comment deadline applies to the CEC's Revised Staff Assessment anticipated to be issued June 18, 2010 regardless of whether it is finalized separately from BLM's DEIS as the relevant comment periods may not be reduced or altered retroactively.

Metropolitan is a public agency and regional water wholesaler. It is comprised of 26 member public agencies serving more than 19 million people in six counties in Southern California. One of Metropolitan's major water supplies is the Colorado River via Metropolitan's Colorado River Aqueduct (CRA). Metropolitan holds an entitlement to water from the Colorado River. The CRA consists of tunnels, open canals and buried pipelines. CRA-related facilities also include above and below ground reservoirs and aquifers, access and patrol roads, communication facilities, and residential housing sites. The CRA, which can deliver up to 1.2 million acre-feet of water annually, extends 242 miles from the Colorado River, through the Mojave Desert and into Lake Mathews. Metropolitan has five pumping plants located along the CRA, which consume approximately 2,400 gigawatt-hours of energy when the CRA is operating at full capacity.

Concurrent with its construction of the CRA in the mid-1930s, Metropolitan constructed 305 miles of 230 kV transmission lines that run from the Mead Substation in Southern Nevada, head south, then branch east to Parker, California, and then west along Metropolitan's CRA. Metropolitan's CRA transmission line easements lie on federally-owned land, managed by BLM. The transmission lines were built for the sole and exclusive purpose of supplying power from the Hoover and Parker projects to the five pumping plants along the CRA.

Metropolitan's ownership and operation of the CRA and its 230 kV transmission system is vital to its mission to provide Metropolitan's 5,200 square mile service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

Project Understanding

Solar Millennium LLC and Chevron Energy Solutions, the joint developers of this project, propose to construct, own, and operate the Palen Solar Power Project. The Project is a concentrated solar thermal electric generating facility with two adjacent, independent, and identical solar plants of 250 megawatt (MW) nominal capacity each for a total capacity of 500 MW nominal.

The Project will utilize solar parabolic trough technology to generate electricity. With this technology, arrays of parabolic mirrors collect heat energy from the sun and refocus the radiation on a receiver tube located at the focal point of the parabola. A heat transfer fluid (HTF) is heated to high temperature (750 degrees Fahrenheit) as it circulates through the receiver tubes. The heated HTF is then piped through a series of heat exchangers where it releases its stored heat to generate high-pressure steam. The steam is then fed to a traditional steam turbine generator where electricity is produced.

The project water needs would be met by use of groundwater pumped from one of two wells on the plant site. Water for domestic uses by project employees would also be provided by onsite groundwater treated to potable water standards. During construction, the Project proponent anticipates using up to 1,500 acre-feet of water. Following construction and for long-term

operations, the average total annual water usage for all four units combined is estimated to be about 300 acre-feet per year (afy).

The project site would be located approximately 10 miles east of Desert Center, along Interstate 10 approximately halfway between the cities of Indio and Blythe, in Riverside County, California. An application has been filed with BLM for a right-of-way (ROW) grant of approximately 5,200 acres.

Land Use Issues: Potential Impacts on Metropolitan Facilities

Although Metropolitan has not yet identified any direct impacts, the Project is in the general vicinity of Metropolitan facilities, perhaps as close as 0.3 miles. As described above, Metropolitan currently has a significant number of facilities, real estate interests, and fee-owned rights-of-way, easements, and other properties (Facilities) located on or near BLM-managed land in southern California that are part of our water distribution system. Metropolitan is concerned with potential direct or indirect impacts that may result from the construction and operation of any proposed solar energy project on or near our Facilities. In order to avoid potential impacts, Metropolitan requests that the final EIS and staff assessment include an assessment of potential impacts to Metropolitan's Facilities with proposed measures to avoid or mitigate significant adverse effects.

Metropolitan is also concerned that locating solar projects near or across its electrical transmission system could have an adverse impact on Metropolitan's electric transmission-related operations and Facilities. From a reliability and safety aspect, Metropolitan is concerned with development of any proposed projects and supporting transmission systems that would cross or come in close proximity with Metropolitan's transmission system. Metropolitan requests that the final EIS and staff assessment analyze and assess any potential impacts to Metropolitan's transmission system.

Water Resources: Potential Impacts on Colorado River and Local Water Supplies

Metropolitan is also concerned about the Project's potential direct and cumulative impacts on water supplies, specifically potential impacts on Colorado River and local groundwater supplies. As noted above, Metropolitan holds an entitlement to imported water supplies from the Colorado River. Water from the Colorado River is allocated pursuant to federal law and is managed by the Department of the Interior, Bureau of Reclamation (USBR). In order to lawfully use Colorado River water, a party must have an entitlement to do so. *See* Boulder Canyon Project Act of 1928, 43 U.S.C. §§617, et seq.; Arizona v. California, 547 U.S. 150 (2006).

As noted above, the Project proposes to use approximately 1,500 af of water during construction and 300 acre-feet per year (afy) for long-term operations, using groundwater from a groundwater basin that is hydrogeologically connected to the Colorado River, within an area referred to as the "accounting surface." The extent of accounting surface area for the Colorado River was determined by the U.S. Geological Survey (USGS) and USBR as part of an on-going rule-making process. *See* Notice of Proposed Rule Regulating the Use of the Lower Colorado River

Without an Entitlement, 73 Fed. Reg. 40916 (July 16, 2008); USGS Scientific Investigation Report No. 2008-5113. To the extent the Project uses Colorado River water, it must have a documented right to do so.

Entities in California are using California's full apportionment of Colorado River water, meaning that all water is already contracted and no new water entitlements are available in California. In addition, the California contractors have agreed in the 1931 Seven Party Agreement to prioritize the delivery of California's Colorado River water among themselves. Under this priority agreement, the following alternatives identified in SOIL&WATER-15 are no longer available to Proponents to mitigate impacts to Colorado River water resources:

> The [mitigation] activities shall include the following water conservation projects: payment for irrigation improvements in Palo Verde Irrigation District, payment for irrigation improvements in Imperial Irrigation District, purchase of water rights within the Colorado River Basin that will be held in reserve, and/or BLM's Tamarisk Removal Program.

Instead, Proponents would have to obtain water from the existing junior priority holder, Metropolitan, which has the authority to sell water for power plant use. Mitigation measure SOIL&WATER-15 should be revised accordingly. Metropolitan is willing to discuss the exchange of a portion of its water entitlement subject to any required approvals by Metropolitan's Board of Directors and so long as the Proponents agree to provide a replacement supply through an agreement with Metropolitan. Proponents must fully address the impacts on Colorado River water resources and provide full mitigation for such impacts, including replacement of supply.

Additionally, CEC and BLM should assess the potential cumulative impacts of the use of the scarce Colorado River and local groundwater supplies in light of other pending renewable energy projects within the Colorado River Basin and the local groundwater regions. Metropolitan requests that the final EIS and staff assessment address the Proponent's water supply and any potential direct or cumulative impacts from this use.

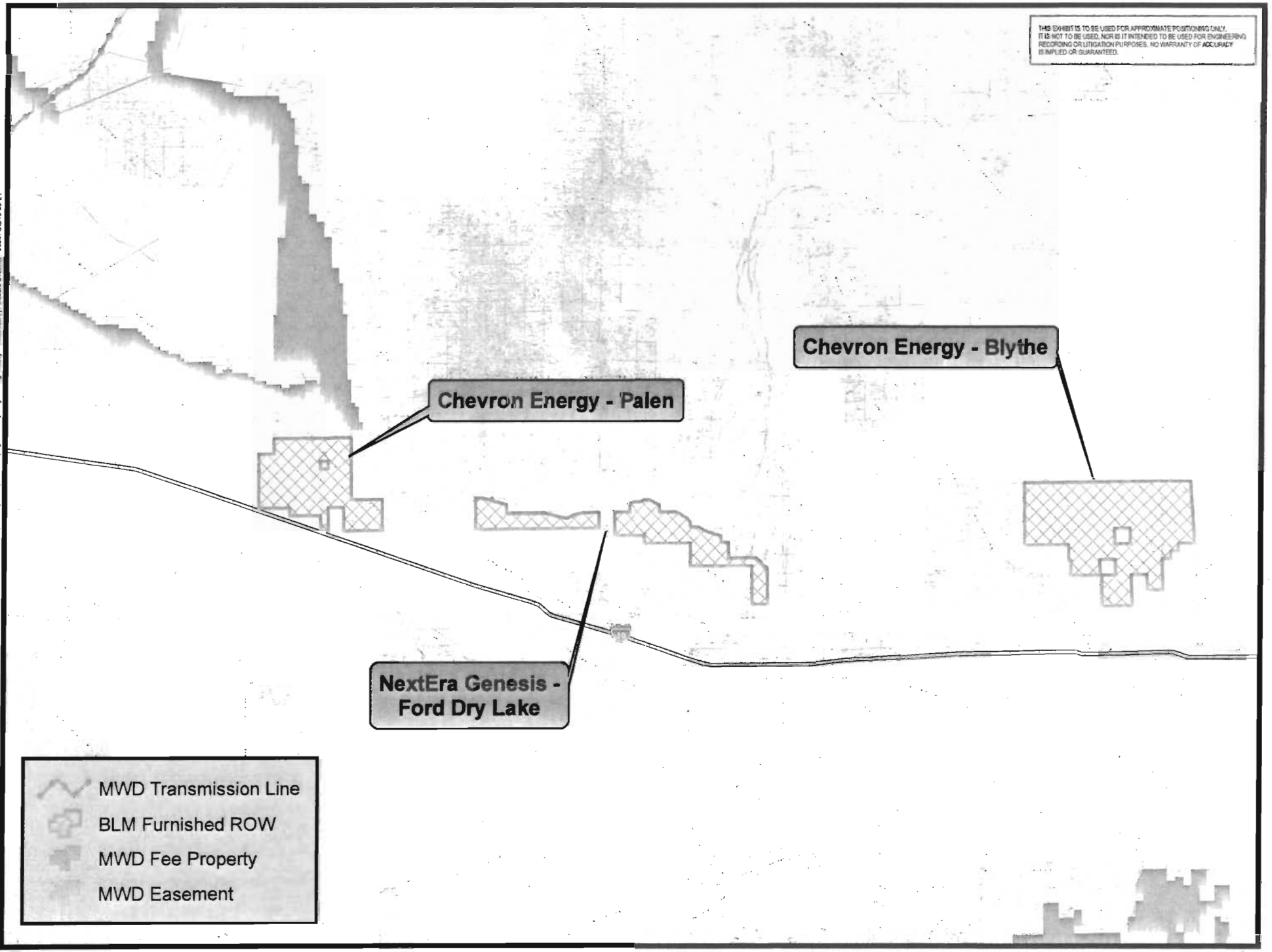
We appreciate the opportunity to provide input to your planning process and we look forward to receiving future environmental and related documentation on this project. If we can be of further assistance, please contact Dr. Debbie Drezner at (213) 217-5687.

Very truly yours,

Delaine W. Shane

Delaine W. Shane
Manager, Environmental Planning Team

DSD/dsd
(Public Folders/EPT/Letters/EPT Final Letter PDF/2010/15-JUN-10B.doc)
Enclosures: Map



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The Metropolitan Water District of Southern California
Corporate Resources Group

Renewable Energy Projects
MWD Right of Way

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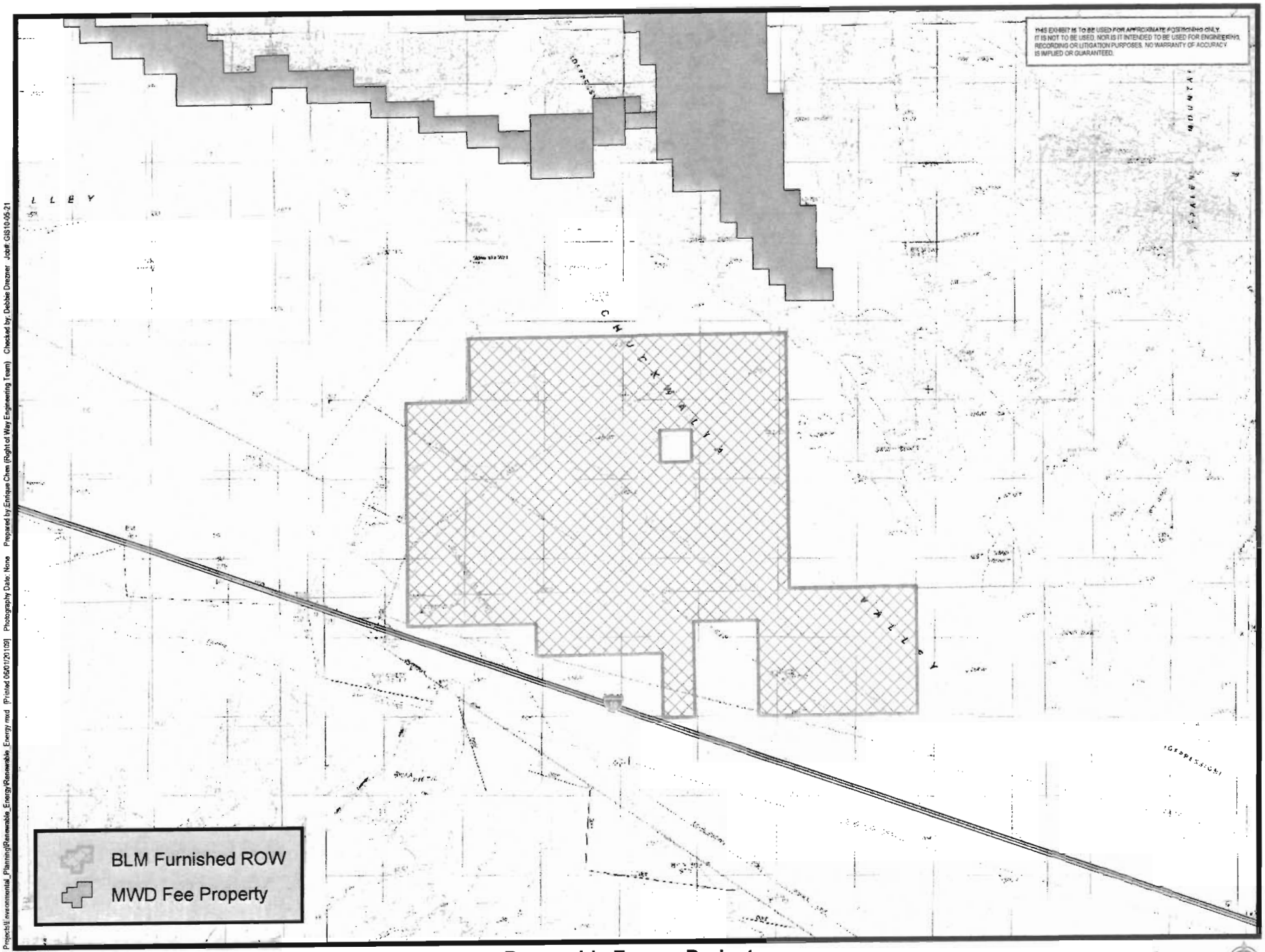

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The Metropolitan Water District of Southern California
Corporate Resources Group

Renewable Energy Projects
Chevron Energy - Palen

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bcc

Subject JOTR Response to DEIS for Palen Solar Power Project

Attached you will find Joshua Tree National Park's response to the Draft Environmental Impact Statement for the Palen Solar Power Project.

(See attached file: Palen Solar Project Comments.PDF)

Cheri Vocelka
Program Assistant
Joshua Tree National Park
760-367-5502

"Unless someone like you cares a whole awful lot,

Nothing is going to get better. It's not." --Dr. Seuss

Palen Solar Project Comments.PDF

United States Department of the Interior

NATIONAL PARK SERVICE
Joshua Tree National Park
74485 National Park Drive
Twentynine Palms, California 92277-3597

IN REPLY REFER TO

L7619 (JOTR-RM)

June 30, 2010

Allison Shaffer, Project Manager
Palm Springs - South Coast Field Office
Bureau of Land Management
1201 Bird Center Drive
Palm Springs, California 92262

COMMENTS ON THE STAFF ASSESSMENT AND DRAFT ENVIRONMENTAL IMPACT (DEIS) STATEMENT, PALEN SOLAR POWER PROJECT, Application For Certification (09-AFC-7), March 19 2010

Dear Ms. Shaffer:

Joshua Tree National Park, National Park Service (NPS), appreciates the opportunity to provide comments on the above noted document. The proposed Palen Solar Power Project is located approximately 10 miles east of the southern portions of Joshua Tree National Park.

We commend the Bureau of Land Management (BLM) for its cooperative approach with the State of California Energy Commission (CEC) to jointly evaluate the environmental implications of the Palen Solar Power Project. Joshua Tree National Park is very supportive of the proposed land use plan alterations to the Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) in the Pinto-Basin-Chuckwalla Desert Wildlife Management Area (DWMA), Palen Dunes Exclusion Area, and Palen Wilderness-Chuckwalla DWMA Wildlife Linkage Area. The NPS recognizes and commends the objectives to preserve connected physical attributes and habitat to link populations of a wide diversity of organisms, both flora and fauna. These areas, as mentioned in the DEIS would also offset some of the cumulative effects from this and other projects proposed for the area. To facilitate this further, the park recommends the following expansion of these areas to incorporate BLM lands in proximity to these areas:
- Pinto Basin-Chuckwalla DWMA Tortoise Linkage Area: include BLM lands west of Highway 177 and south and southwest of the Coxcomb Mountains, to more effectively link the habitat from the Chuckwalla DWMA to habitat to the north.
- Palen Dunes Exclusion Area: include BLM lands to the north and northwest of this area, on both sides of Highway 177 in the Palen Valley, to encompass additional habitat and the dunes and playas.
- Palen Wilderness-Chuckwalla DWMA Wildlife Linkage Area: include BLM lands east and south of Highway 177, north of I-10, and west of the Palen Mountains, to more effectively protect the sand dunes, habitat for the desert tortoise, and cultural sites.

In addition, the park suggests that the designations of "Solar Exclusion" areas for Palen Dunes and Palen Wildernenss/Chuckwalla DWMA Linkage be changed to match that of the Pinto-Basin-Chuckwalla Tortoise Linkage to be defined as Right-of-Way (ROW) Exclusion. It is our interpretation that this ROW

exclusion would limit future applications for projects in the areas, while the Solar Exclusion designation allows for additional projects which do not have major ground disturbing activities, but which could include additional public utility scale use of these areas. To facilitate the best preservation of habitat and for other reasons stated in the DEIS, additional disturbances should be minimized rather than allowing partial development which requires some evaluation for the interpretation of the definition of "major" ground disturbing activities.

The park continues to have significant concerns about the concentration of proposed public utility-scale projects, especially in the Chuckwalla Valley Groundwater Basin (as shown in Figure 2, Cumulative Impacts). Impacts to water resource as a result of this project are anticipated to be mitigatable, but the document then also states that cumulative groundwater extraction will put the basin into overdraft condition. This project alone will result "in a substantial adverse impact to existing scenic resource values as seen from several viewing areas" and identified that these cannot be mitigated. This will be magnified for every project that is added in the Basin. The park would like to reiterate the request that was submitted through the Solar Energy Development Programmatic Environmental Impact Statement (dated 11/30/09), that the area west of the Palen Mountains be removed from consideration for public utility scale development projects. These projects cumulatively are incompatible with trying to maintain the existing experiences that visitors have on the eastern portions of the park for air quality, viewsheds, wilderness values, and night sky qualities.

Specific resource comments follow.

Water Resources

The significance criteria used to evaluate the potential impact to groundwater resources are broadly and/or incompletely defined. The NPS recommends that the CEC and BLM better define the thresholds and significance criteria used to evaluate individual and cumulative impacts to groundwater resources in the Chuckwalla Valley Groundwater Basin. For example, in the second bulleted item on page C.9-3 of the SA/DEIS, does this criterion apply to individual and cumulative impacts, and how is "substantial depletion" and "substantial interference" to be interpreted from one solar project to another? Terms like substantial, significant, and considerable, unless constrained by quantitative (i.e., numerical) limits or bounds, are open to broad interpretation, which leads to confusion.

On pages C.9-38 and C.9-68, how is "a significant percentage of the total amount of groundwater in storage" defined? No quantitative, percentage value has been identified by which the reader can understand the agencies' intent of significance. Furthermore, there is little or no discussion on how the groundwater storage value of 15,000,000 acre-feet was derived. A more conservative estimate of 9,100,000 acre-feet was estimated and proposed for groundwater storage in the basin by Eagle Crest Energy for their groundwater pumped storage project. However, it unclear whether either of these two storage estimates represents the total amount of water in storage versus the recoverable amount of water in storage, which is a smaller portion of the total amount of water in storage. For example, assuming a total amount of water in storage of 15,000,000 acre-feet and using the average aquifer storage (i.e., drainable porosity) values of 0.05 and 0.0002 reported for the alluvium and the Bouse Formation in Soil & Water Table 7 (page C.9-26), the recoverable amount of water in storage would be reduced to 750,000

acre-feet and 3,000 acre-feet, respectively. For the analysis, the recoverable amount of water in storage should be utilized to evaluate whether or not "a significant percentage of the total amount of groundwater in storage" has been exceeded. If both of these total storage estimates prove to be recoverable storage estimates, the NPS suggests using the more conservative value (9,100,000 acre-feet) so that this and other forthcoming SA/DEIS's and foreseeable groundwater development projects are consistent in their evaluation of potential individual and cumulative impacts produced by these projects. It will be important for the CEC and BLM to utilize a consistent set of hydrologic parameter values (groundwater storage, water balance parameters, etc.) in this and future SA/DEIS's so that the impact evaluations are comparable from one project to another.

On page C.9-70, first paragraph, the statement is made that "the project's contribution to the cumulative impact to basin balance is less than cumulatively considerable." Please elaborate on what is meant by this statement as it is unclear to the NPS. How much is cumulatively considerable and how do we know when this threshold has been exceeded?

<u>The water balance estimate proposed for the Chuckwalla Valley Groundwater Basin is not substantiated by the available water level data.</u> In the water balance presented in Table 6 on page C.9.22, the current annual amount of water recharging the basin exceeds the amount of water discharging from the basin by 2,600 acre-feet (representing an overbalance of 23%). If an annual surplus is occurring, then the amount of groundwater stored within the basin should be increasing and one should see evidence of groundwater levels rising over time. To date, no evidence has been presented that water levels are rising in the basin to support this position, with the exception of some water levels suspected to be recovering from known periods of significant groundwater pumping in the basin. As a result of this overbalance, the NPS believes the preliminary analysis understates the potential individual and cumulative impacts that might result in the basin related to the proposed solar project and other reasonably foreseen projects.

Groundwater hydrologists commonly assume that a relatively undeveloped desert basin like the Chuckwalla Valley Groundwater Basin is in a quasi-equilibrium condition with respect to estimating a water balance for such a basin. Therefore, over a sufficiently long period of time, the amount of water coming into the basin (from precipitation and inflow from other basins) should be closely balanced by the amount of water leaving the basin (from natural evapotranspiration and outflow to other basins). This balance is disturbed when human activity disrupts inflow into the basin and/or the outflow from the basin (e.g., by pumping groundwater). In general, hydrologists have much better control in estimating outflow volumes than inflow volumes, and therefore, the outflow estimate should be used as the ultimate constraint on the water balance for the basin. This is an approach commonly adopted by the United States Geological Survey (USGS) when they conduct water resource investigations in the region.

Assuming a pre-development, quasi-equilibrium condition existed, the NPS believes the water balance inflow estimate should be adjusted downward to more closely match the reported water balance outflow estimate of 11,111 acre-feet per year (afy). For example, adjusting the annual recharge rate downward to a rate similar to the BLM's and County of Riverside's estimate of 5,600 afy and adjusting the combined subsurface inflow from Pinto Valley and Orocopia Valley to 2,500 afy and 1,700 afy, respectively (values reported in Eagle Crest Energy, 2009), results in an adjusted water balance inflow estimate of 10,431 afy. When compared to the current outflow estimate of 11,111 afy, this adjusted inflow estimate would

produce a water balance deficit of 680 acre-feet, or an imbalance of about 6 percent, which is an improvement over the current imbalance. Closer examination of the hydrographs presented for wells 4/17-6C1, 5/17-19Q1, and 5/17-33N1, though hard to distinguish at the scale presented in the DEIS document, suggests that slow declines in the basin groundwater level have been occurring since the 1960s, which is consistent with a deficit in the water balance (i.e., an overdraft condition). Unless it is shown through additional water level analysis that the higher water balance inflow value is justified, the NPS believes a lower inflow value provides a more "conservative" and correct estimate to use in the water balance analysis and subsequent evaluation of impacts to regional water level declines and storage depletion. If the CEC and BLM agree with the NPS's contention, several tables will need to be revised to reflect the updated water balance estimates.

Revise hydrographs on Figure 7 to aid evaluation of long-term water level trends. On pages C.9-24 and C.9-25, reference is made to Soil and Water Resources Figure 7 and discussion is presented about long-term water level trends in several wells distributed around the Chuckwalla Valley Groundwater Basin. Please revise the vertical axis scale of the hydrographs presented in Figure 7 so that the reader can discern whether or not a long-term increase or decrease in water levels is occurring in the basin. The current vertical axis scale of the hydrographs makes it nearly impossible to determine these conditions. While stylistically pleasing, a consistent scale of 400 feet of elevational change for each hydrograph is not conducive to detecting changes in water level on the order of several feet. There is nothing preventing the vertical axis scale of each hydrograph from being unique relative to the range of water level change occurring within each hydrograph. Another solution would be to change the vertical axis from groundwater elevation to change in water level so that a smaller scale (e.g., 50 to 100 feet of change) could be developed.

Corrections to Table 11 are needed. Please correct the "Net Budget Balance" estimates in Table 11 on page C.9-38. The two values presented are incorrect and should be the difference between the "Annual Basin Budget Balance" estimate minus the "Project Requirements" estimate. If the CEC and BLM agree with the NPS's contention in Comment #2 above, this table will need to be revised to reflect the updated water balance estimates.

Corrections to Table 17 are needed. Please correct the "Cumulative Project Requirements" and "Net Budget Balance" estimates for Year 2019 in Table 17 on page C.9-69. The values presented are incorrect. Additionally, in the second and third full paragraphs on this same page, please correct the numbers quoted in the discussion as they seem to be different from the numbers presented in Table 17. If the CEC and BLM agree with the NPS's contention in Comment #2 above, this table will need to be revised to reflect the updated water balance estimates.

Expand the discussion on how the individual and cumulative impacts to groundwater levels in the Chuckwalla Valley Groundwater Basin were determined. In the discussion on page C.9-41 concerning individual impacts resulting from the project, a maximum drawdown estimate of 57 feet is stated but no additional discussion is presented on how this drawdown estimate was derived. On page C.9-39, a reference is made to a groundwater model developed by Worley-Parsons that was used to estimate impacts to the basin's water balance, including subsurface flow from the valley, resulting from the operation of another proposed solar energy project in the valley (Genesis Solar Energy Project). Was this

model also used to predict the maximum drawdown value of 57 feet? Little or no discussion is provided to give the public confidence in how the model was developed and whether it meets acceptable standards and results for a groundwater model under CEQA/NEPA. If a groundwater model was used to estimate the maximum drawdown that might occur from the Palen Solar Power Project, please provide additional discussion on the development and use of this model, including how it was calibrated (steady-state and transient), the results of the different modeling runs, and any sensitivity analyses that were conducted.

Similarly, in the discussion on pages C.9-70 and C.9-71 of cumulative water level impacts resulting from the proposed solar project and other reasonably foreseeable projects in the basin, a reference is made to a groundwater model used by AECOM which appears to have been developed for the Parker-Palo Verde-Cibola area to evaluate impacts from groundwater pumping on the Colorado River. Is this model different from the Worley-Parsons model noted above or might this be the model developed recently by the USGS used to define the Colorado River accounting surface? Please provide additional discussion on the origin and use of the model referenced in the discussion as it pertains to this DEIS, including how it was calibrated (steady-state and transient), and the results of the different modeling runs and sensitivity analyses that were conducted. While it appears that results from modeling runs and sensitivity analyses are presented in Table 18 (page C.9-71), additional discussion would help the reader to better understand what this information is supposedly conveying with respect to cumulative impacts to water levels. For example, what do Zone 1 and Zone 2 represent in the model, and what foreseeable projects were considered in the model?

<u>A single Groundwater Monitoring and Reporting Plan should be developed and managed for the Chuckwalla Valley Groundwater Basin.</u> The NPS commends the CEC and BLM for requiring the applicant to comply with the measures stated on pages C.9-93 through C.9-96, in an attempt to evaluate possible individual and cumulative impacts resulting from the proposed project. However, the NPS has concerns on how these measures will be applied to other foreseeable projects in the basin and how this information will be interpreted with respect to the degree of individual and cumulative impacts produced by each potential entity. To avoid potential conflicting interpretations of impacts by individual project operators, the NPS recommends that a single Groundwater Monitoring and Reporting Plan be developed cooperatively by the appropriate regulatory agencies, solar energy operators and interested stakeholders, and managed and evaluated on a regular basis by an independent, scientifically respected organization such as the California Department of Water Resources or the USGS. Funding for developing and implementing the plan should be provided by the applicant and other foreseeable project operators in an equitable manner as a condition of granting their right-of-way and operating permits. This funding would cover costs for installing and monitoring new wells needed in the network, monitoring existing wells in the network, processing and interpreting the water level and water quality data, and report production. Given that much of the basin may be developed as a solar energy study area, it may make more sense to develop and manage one Groundwater Monitoring and Reporting Plan and monitoring network for the solar energy study area instead of developing and managing several individual plans and monitoring networks for each project. Several individually managed plans invites several differing interpretations of potential individual and cumulative impacts to the groundwater resources of the hydrologically connected basins and conflicts concerning who may be responsible for mitigating specific impacts to existing water users in these basins. Utilizing an independent third-party to manage and evaluate the information will

provide assurances to existing water users that unbiased science is being utilized to evaluate whether potential impacts are occurring and whether mitigation is necessary.

Air Quality

Mitigation measures to control fugitive dust at the completion of the grading operation and during operations should be addressed. The proposed development is planned in an area identified as containing desert pavements and sandy washes. Competing theories or attempts to rationalize the development of desert pavements is still at the forefront of debate by most experts. However, not in debate is the material type that underlies all desert pavements. The finest soil particles ranging from silt to silty clay underlie all desert pavements. The disruption of large areas of desert pavement during grading, post-grading and for the life of the project is likely to produce fugitive dust storms during mild to moderate wind activity. Heavier sand particles dislodged and transported over short distances by saltation[1], require high winds to become airborne. Fine soil particles do not require high winds to become airborne and are suspended for long periods of time. During high wind events, saltation of larger sand grains over fine particulate landscapes may exacerbate the fugitive dust issue, possibly to a level of complete white-out events downwind from the project.

Impacts from fugitive dust have been addressed during the construction phase of the proposed project. Large areas of disturbance, unmitigated for the control of fugitive dust, have the potential to create white-out conditions. Some (or substantial) grading will be required to facilitate the proposed development. Project plans should consider alternatives to full grading of the area (e.g., leaving strips of vegetation) as other solar projects are doing. Mitigation measures to control fugitive dust at the completion of the grading operation should be addressed (e.g. will the site be compacted or treated to control fugitive dust?). Controlling fugitive dust during normal operations should also be clearly addressed.

Viewshed/Recreation

The preservation of viewshed, in effect visibility, needs to be addressed. As presented above, fugitive dust may likely be a result of the grading operation and exposing the fine particulate soils that underlie the desert pavements. Fine particle soils brought to the surface during grading will remain at the surface possibly creating fugitive dust problems for the life of the project. Significant viewshed impacts pose serious problems in other areas where fine particulate soil particles are exposed at the surface by anthropogenic activities (e.g. Owens Valley).

The DEIS states that the viewshed will be significantly impacted by the proposed project as well as other renewable energy projects in the same vicinity (cumulative impacts). However, the DEIS needs to clearly communicate that in addition to visual impacts associated with fugitive dust, visitors to Joshua Tree National Park will experience the same significant degradation of the viewshed (for the life of the project), as described for other areas such as the I-10 corridor, when the project is viewed from park lands. The DEIS should include a description of the current view from prominent overlooks in the park toward the proposed project area and include detailed maps and photos that clearly define the park and

[1] Saltation is a geologic process by which sand or larger particles are transported by a fluid (air or water) over short distances that can impact other particles causing more particles to become airborne.

project boundaries. Each of the project alternatives addressing project footprint or equipment design (cooling towers, transmission towers, and power stations) should also contain the same descriptive, map, and photo information to specifically inform the public and decision makers about potential impacts to Joshua Tree National Park.

Night Sky

The proposed project is located in one of the most pristine areas for night sky viewing. Mitigation measures from light trespass, relating to security, nighttime operations for aircraft and other activities appear to have been properly addressed. We strongly encourage and support any further mitigation that would prevent light trespass from the proposed project.

Wildlife resources

Measures to reduce impacts to habitat of the Mojave fringe-toed lizard are encouraged (e.g., the Reduced Acreage Alternative). Found in locations within the park near the project site, the Mojave fringe-toed lizard is dependent on the Chuckwalla Valley as it provides nearby habitat that is important to park populations for the purposes of migration. The protection of the habitat and associated corridors will be essential in ensuring strong genetic structure within isolated Mojave fringe-toed lizard populations found in the Chuckwalla Valley and Pinto Basin.

The plan BIO-20 outlines the mitigation planned by the project owner for reducing the impact to the Mojave fringe-toed lizard. Careful attention to that plan will aid in the future protection of quality habitat for the lizard and will attempt to mitigate for the loss of habitat realized from the implementation of the project.

If you have any questions or need additional information, please contact the park superintendent's office at 760-367-5502, or Andrea Compton, Chief of Resources at 760-367-5560, Andrea_Compton@nps.gov.

Sincerely,

John Slaughter
Acting Superintendent

Cc: Curt Sauer, Superintendent, Joshua Tree National Park
George Turnbull, Acting Regional Director, Pacific West Region
Carol McCoy, Geologic Resources Division, Natural Resource Program Center
David Reynolds, Land Resources Program, Pacific West Region
Alan Schmierer, Environmental Coordinator, Pacific West Region
Andrea Compton, Chief of Resources, Joshua Tree National Park

Brendan Hughes
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cc
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Subject Comments on Palen Solar Power Project DEIS

To whom it may concern:

My name is Brendan Hughes and I would like to comment on the proposed Palen Solar Power Project Staff Assessment/Draft EIS. I encourage BLM and CEC to choose the No Action Alternative and amend the CDCA Plan to place this area off-limits to future development. This project will have immitigable impacts to biological and visual resources. Additionally, viable alternatives exist that will not destroy intact desert habitat.

The proposed project will have negative impacts on several endangered or special-status species. This project will destroy 210 acres of the Chuckwalla Critical Habitat Unit for the desert tortoise. Additionally, it will destroy thousands of acres of suitable habitat for desert tortoises. These are unacceptable impacts to a federally-threatened species. The cumulative impacts of all of these solar projects on desert tortoises could lead to the demise of the entire species in the wild. CEC should not enable the extirpation of the California state reptile. Furthermore, habitat will be lost for the Mojave fringe-toed lizard and the burrowing owl, which are sensitive species, as well as many other important plants and animals. This project will also hinder the creation of new Mojave fringe-toed lizard habitat by obstructing sand movement in the northern Chuckwalla Valley. As BLM and CEC staff acknowledge, the biological impacts of this project are immitigable, and therefore it should be denied.

Severe impacts will also occur to the visual resources of the area, including the Coxcomb Mountains and Eagle Mountains of Joshua Tree National Park, and the Palen-McCoy, Chuckwalla, and Little Chuckwalla Mountains Wilderness Areas. I have hiked in the Palen-McCoy and Little Chuckwalla Wilderness Areas, and I enjoyed the vast, unconfined landscapes that I observed during those hikes. A project such as this would taint future hikes and reduce my ability to enjoy the California Desert.

Finally, CEC staff identified a "Desert Center" Alternative that would be sited on and in the vicinity of former agricultural fields. I suggest that, if a utility-scale plant needs to be constructed, CEC should only authorize siting to occur on previously-disturbed agricultural land. Very little, if any, undisturbed desert should be required to build such a plant. Solar Millennium should be able to work within these limits. Smaller solar plants are perhaps even more viable than larger ones, as the current Harper Dry Lake and Kramer Junction solar fields demonstrate. CEC should begin encouraging applicants to use previously-disturbed land, and deny outright applications for intact, viable desert habitat.

Again, I would like to ask BLM and CEC to choose the No Action Alternative for this project, and amend the CDCA plan to place this area off-limits to future development.

Thank you for your consideration.

Brendan Hughes
61093 Prescott Trail
Joshua Tree, CA 92252

The New Busy is not the old busy. Search, chat and e-mail from your inbox. Get started.

"Ileene Anderson" <ianderson@biologicaldiversity.org>
07/01/2010 02:59 PM

To <CAPSSolarPalen@blm.gov>, "'Allison Shaffer'" <Allison_Shaffer@blm.gov>
cc "'Lisa Belenky'" <lbelenky@biologicaldiversity.org>, <asolomon@energy.state.ca.us>, <docket@energy.state.ca.us>, <brian_croft@fws.gov>,
bcc
Subject CBD comments on Palen Solar Power Plant DEIS

Hello Allison Shaffer,
Please find attached the Center for Biological Diversity's comments on BLM's DEIS for the Palen Solar Power Plant Project. I will be sending a hardcopy with references via overnight mail.
Please feel free to contact me with any questions.
Best regards,
Ileene Anderson

ILeene Anderson
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"Our good fortune will only last as long as our natural resources" Will Rogers
Please consider the impact on the environment before printing this e-mail.
Get the latest on the BP oil spill on the Center's new Gulf Disaster website, updated daily.

CBD comments Palen DEIS final 7-1-10.pdf

CENTER *for* BIOLOGICAL DIVERSITY

VIA EMAIL AND FEDERAL EXPRESS OVERNIGHT DELIVERY

July 1, 2010

Allison Shaffer, Project Manager,
Palm Springs South Coast Field Office
Bureau of Land Management
1201 Bird Center Drive
Palm Springs, California 92262
CAPSSolarPalen@blm.gov.

Re: Comments on the Draft Environmental Impact Statement/Staff Assessment for the Chevron Energy Solutions/Solar Millennium Palen Solar Power Plant (PSPP) and Possible California Desert Conservation Area Plan Amendment (CEC Application For Certification (09-AFC-7))

Dear Project Manager Shaffer:

These comments are submitted on behalf of the Center for Biological Diversity's 255,000 staff, members and on-line activists in California and throughout the western states, regarding the Draft Environmental Impact Statement/Staff Assessment Chevron Energy Solutions/Solar Millennium Palen Solar Power Plant (PSPP) ("DEIS") and Possible California Desert Conservation Area Plan Amendment (CEC Application For Certification (09-AFC-7)) ("proposed project") , issued by the Bureau of Land Management ("BLM").

The development of renewable energy is a critical component of efforts to reduce greenhouse gas emissions, avoid the worst consequences of global warming, and to assist California in meeting emission reductions set by AB 32 and Executive Orders S-03-05 and S-21-09. The Center for Biological Diversity (the "Center") strongly supports the development of renewable energy production, and the generation of electricity from solar power, in particular. However, like any project, proposed solar power projects should be thoughtfully planned to minimize impacts to the environment. In particular, renewable energy projects should avoid impacts to sensitive species and habitats, and should be sited in proximity to the areas of electricity end-use in order to reduce the need for extensive new transmission corridors and the efficiency loss associated with extended energy transmission. Only by maintaining the highest environmental standards with regard to local impacts, and effects on species and habitat, can renewable energy production be truly sustainable.

As proposed, the project right of way includes over 5,000 acres of public lands and the project as proposed would permanently disturb approximately 3,000 acres of public lands in the Colorado desert that provide habitat for many species including the threatened desert tortoise and the imperiled Mojave fringe-toed lizard. The proposed project also includes new a new gas line,

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a gen-tie line, and a new substation. The DEIS for the proposed plan amendment and right-of-way application: fails to provide adequate identification and analysis of all of the significant impacts of the proposed project on the desert tortoise, the Mojave fringe-toed lizard, rare plants including Colorado desert microphyll woodlands, and other biological resources; fails to adequately address the significant cumulative impacts of the project; and lacks consideration of a reasonable range of alternatives.

Of particular concern is the BLM's failure to include adequate information regarding the impacts to resources and the failure to fully examine the impact of the proposed plan amendment to the California Desert Conservation Act Plan ("CDCA Plan") along with other similar proposed plan amendments and as a result the current piecemeal process may lead to the approval of industrial sites sprawling across the California Desert generally, and the Chuckwalla Valley in particular, within habitat that should be protected to achieve the goals of the bioregional plan as a whole. The DEIS fails to consider potential alternative plan amendments that would protect the most sensitive lands from future development. Alternative siting and alternative technologies (including distributed PV) should have been fully considered in the DEIS, because they could significantly reduce the impacts to many species, soils, and water resources in the Colorado desert. Although the area of the proposed project is currently part of the evaluation being undertaken by the BLM for the solar PEIS for solar energy zones, within the western portion of the "Riverside East" proposed solar energy study area ("SESA"), unfortunately, there has been no environmental documentation yet provided for that process and there is as yet no way to discern if the proposed project siting will be compatible with that planning. In scoping comments on the PEIS, the Center raised concerns about the impacts that development in this portion of the proposed SESA would have to species and habitats and particularly to connectivity. As the Center has emphasized in our comments on the various large-scale industrial solar proposals in the California desert, planning should be done *before* site specific projects are approved in order to ensure that resources are adequately protected from sprawl development and project impacts are avoided, minimized and mitigated.

The Center has been informed that the project applicant continues to work with the agencies on alternative site configurations that may avoid or minimize some of the impacts of the project, however, the DEIS does not provide that information. Any new site configuration alternative will need to be circulated for public review and comment in a Supplemental or Revised DEIS that should also include additional information on those resources that were inadequately identified and analyzed in the DEIS and additional consideration of off-site alternatives and other alternatives. The Center urges the BLM to revise the DEIS to adequately address these and other issues detailed below and re-circulate the DEIS or a supplemental DEIS for public comment.

In the sections that follow, the Center provides detailed comments on the ways in which the DEIS fails to adequately identify and analyze many of the impacts that could result from the proposed project, including but not limited to: impacts to biological resources, impacts to water resources, impacts to soils, direct and indirect impacts from the gen-tie line and substation, and cumulative impacts.

Because the project approval process includes a quasi-judicial process in the California

Energy Commission, the Center hereby incorporates by reference all of the materials before the California Energy Commission regarding the approval of this project. BLM is a party to the CEC process, which is being conducted in concert with the BLM approval process, and BLM has access to all of the documents (most of which are also readily accessible on the internet), therefore, BLM should incorporate all of the documents and materials from that process into the administrative record for the BLM decision as well.

I. The BLM's Analysis of the Proposed Plan Amendment and Proposed Project Fail to Comply with FLPMA.

As part of FLPMA, Congress designated 25 million acres of southern California as the California Desert Conservation Area ("CDCA"). 43 U.S.C. § 1781(c). Congress declared in FLPMA that the CDCA is a rich and unique environment teeming with "historical, scenic, archaeological, environmental, biological, cultural, scientific, educational, recreational, and economic resources." 43 U.S.C. § 1781(a)(2). Congress found that this desert and its resources are "extremely fragile, easily scarred, and slowly healed." *Id.* For the CDCA and other public lands, Congress mandated that the BLM "shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands." 43 U.S.C § 1732(b).

The sum total of the plan amendment to the CDCA plan is one sentence: Permission granted to construct solar energy facility (proposed PSPP Project). DEIS at A-6. The DEIS then lists the criteria for consideration of the plan amendment and right of way application and BLM's responses to each issue. DEIS at A-6 to A-9. The Center appreciates BLM's effort in this regard (which were absent in other recent environmental documents prepared for large-scale solar projects), however, given the impact of the proposed project on other multiple uses of these public lands at the proposed site as well as other aspects of the bioregional planning, it is clear that BLM may also need to amend other parts of the plan as well and should have looked at additional and/or different amendments as part of the alternatives analysis.

Although not clearly included *as part of the proposed plan amendment*, BLM did provide some additional information in the DEIS regarding potential plan amendments that would adopt 3 right of way exclusion areas as part of a mitigation strategy. *See* DEIS, Biological Resources Appendix B: Northern and Eastern Colorado Desert Coordinated Management Plan NECO Land Use Plan Amendments. The DEIS discusses plan amendments that would increase protection for the desert tortoise by designation of a Pinto Basin-Chuckwalla DWMA Tortoise Linkage Area (B-1), a Palen Dunes Solar Exclusion Area (B-2),and a Palen Wilderness- Chuckwalla DWMA Wildlife Linkage Area (B-2 to B-3) as exclusion areas for rights of way. Unfortunately, the proposals do not clearly limit any other threats to protect key habitat values and species.

While the Center supports additional protections for species and habitats on public land, we have several concerns with the proposed land use amendments not the least of which is the BLM's failure to accurately address the limits of those protections on the ground under the current regulatory and statutory framework that applies to these public lands. For example, most of the lands that would be excluded from new solar ROW siting under the proposal are MUC

class M lands that are open to multiple other high intensity uses. *See* CDCA Plan at 13. Specific comments on the proposal are discussed below:

Pinto Basin-Chuckwalla DWMA Tortoise Linkage Area: The Center supports protection of the key linkage area between Joshua Tree National Park/Pinto Basin DWMA and the Chuckwalla DWMA. However, this proposal is unclear (no map is provided) and it is inadequate to provide the needed protections. For example, the reference to the "unused portions of the First Solar Right of Way" appears to assume that the First Solar proposed project will be permitted although a DEIS has not even been issued for that project yet and certainly no decision has been made. As a result, such an assumption is unlawfully pre-decisional. *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000) ("the comprehensive 'hard look' mandated by Congress and required by the statute must be timely, and it must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made.")

The "analysis" provided, such as it is, was clearly rushed. For example, the appendix states in error that this would provide linkage between the Chuckwalla and the Chemehuevi critical habitat units (DEIS at B-1). Moreover, while the DEIS states in a general way that the proposed plan amendment would "preclude further development from all major ground disturbing activities" it would also continue to allow "casual" uses (including ORV use) and does not withdraw the area from mining location – both of these activities and others could lead to significant ground disturbance and impacts to the linkage area under the proposal as stated.

Palen Dunes Solar Exclusion Area: The Center supports protection of the Palen Dunes system and additional habitat protections for the imperiled Mojave fringe-toed lizard and other dune dependent species. However, the proposal is unclear and there is no map of the proposed exclusion area. The DEIS states that the area would be managed to maintain "the most essential portion of the Palen Dune system" but provides no map or other description of which portions BLM considers "most essential" nor does it explain why. Moreover, the area appears to include significant amounts of private land but no discussion is provided on that issue. Finally, as with the linkage area proposal, the primary "protection" is simply not allowing additional solar projects in the dunes exclusion area. While solar projects clearly represent a threat to dunes habitat they are not the *only* threat and as the DEIS states a "wide variety of uses would still be expected to occur in this area." As a result it is unclear whether this proposal will result in significant conservation for the dunes or the species dependent on them.

Palen Wilderness- Chuckwalla DWMA Wildlife Linkage Area: The Center supports protection of a linkage between the Palen Wilderness and the Chuckwalla DWMA. However, as with the other proposals, the protections only limit the threat from solar, there is no map or other clear delineation of the proposed protected linkage, and appears to also assume that another proposed solar project – the Genesis Ford Dry Lake Project—will be approved.

The Center has repeatedly sought stronger protections for desert tortoise and tortoise critical habitat in the DWMAs within the CDCA as a whole and particularly within the NECO planning area. Despite the fact that desert tortoise populations in the NECO DWMAs continue to decline, BLM has continued to allow activities that significantly impact tortoise and critical

habitat within the DWMAs. For example, the BLM's NECO plan amendment adopted ORV "open wash zones" on 218,711 acres (25%) in the Chemehuevi DWMA and 352,633 acres (43%) in the Chuckwalla DWMA, and in an additional 1,042 square miles (666,880 acres) of desert tortoise habitat outside of both the DWMAs and critical habitat. As a result the NECO plan currently allows virtually unlimited ORV use in large parts of the DWMAs and allows significant damage to desert tortoises and their critical habitat to occur.

The Center strongly supports greater protections for the desert tortoise and its habitat and urges BLM to amend the plan to remove all "open wash zones" from all critical habitat and DWMAs in the planning area. The BLM should also provide ongoing monitoring of critical habitat and the DWMAs (and make all reports publically available) to ensure that all *existing* route closures and other protections in the DWMAs are implemented and any *new* protective measures have the intended effect. In addition, BLM should consider a plan amendment that would change the MUC class of any of the lands in the Palen dunes and the linkage areas that are currently class M to either class C (controlled use) or class L (limited use). The Center believes that at least portions of these areas may well be suitable for class C which is generally used for areas that are suitable for wilderness protection and these linkages and dunes would thereby gain additional long term protections. In addition to a change in MUC class, the BLM should consider amending these essential areas into ACEC designation, to clearly identify and manage these areas for conservation of species.

Even taking into account the proposed plan amendments that would exclude additional solar rights of way as part of the mitigation, BLM has failed to take a comprehensive look at the proposed plan amendment for the ROW to determine: 1) whether industrial scale projects are appropriate for any of the public lands in this area; 2) if so, how much of the public lands are suitable for such industrial uses given the need to balance other management goals including preservation of habitat and water resources; and 3) the location of the public lands suitable for such uses. As noted above, the BLM has also failed to explain how this proposed project would interface with the Solar PEIS process that is already under way and was intended to consider these questions. The Center remains concerned that the result of the current process is a piecemeal approach to project review with site-specific approvals made before planning is completed which threatens to undermine the "bioregional" approach in the CDCA Plan as a whole as well as violate the fundamental planning principles of FLPMA.

A. The DEIS Fails to Adequately Address the Plan Amendment in the Context of the CDCA Plan.

Unfortunately, the DEIS fails to adequately consider the impacts of the proposed project and plan amendment and reasonable alternatives in the context of FLPMA and the CDCA Plan. FLPMA requires that in developing and revising land use plans, the BLM consider many factors and "use a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences . . . consider the relative scarcity of the values involved and the availability of alternative means (including recycling) and sites for realization of those values." 43 U.S.C. § 1712(c). As stated clearly in the CDCA Plan:

> The goal of the Plan is to provide for the use of the public lands, and resources of the California Desert Conservation Area, including economic, educational, scientific, and recreational uses, in a manner which enhances wherever possible—and which does not diminish, on balance—the environmental, cultural, and aesthetic values of the Desert and its productivity.

CDCA Plan at 5-6. The CDCA Plan also provides several overarching management principles:

> MANAGEMENT PRINCIPLES
>
> The management principles contained in the law (FLPMA)—*multiple use, sustained yield, and the maintenance of environmental quality*—are not simple guides. Resolution of conflicts in the California Desert Plan requires innovative management approaches for everything from wilderness and wildlife to grazing and mineral development. These approaches include:
>
> —Seeking simplicity for management direction and public understanding, avoiding complication and confusing in detail which would make the Plan in comprehensive and unworkable.
>
> —Development of decision-making processes using appropriate guidelines and criteria which provide for public review and understanding. These processes are designed to help in allowing for the use of desert lands and resources while preventing their undue degradation or impairment.
>
> *—Responding to national priority needs for resource use and development, both today and in the future, including such paramount priorities as energy development and transmission, without compromising the basic desert resources of soil, air, water, and vegetation, or public values such as wildlife, cultural resources, or magnificent desert scenery. This means, in the face of unknowns, erring on the side of conservation in order not to risk today what we cannot replace tomorrow*.
>
> *—Recognizing that the natural patterns of the California Desert, its geological and biological systems, are the basis for planning*, and that human use patterns, from freeways to fence lines, define its boundaries. Only in this way can the public resources can be understood and protected by the Plan that can be publicly comprehended, accepted, and followed.

CDCA Plan 1980 at 6 (first emphasis in original, second emphasis added).

The CDCA Plan anticipated that there would be multiple plan amendments over the life of the plan and provides specific requirements for analysis of Plan amendments. Those requirements include determining "if alternative locations within the CDCA are available which would meet the applicant's needs without requiring a change in the Plan's classification, or an amendment to any Plan element" and evaluating "the effect of the proposed amendment on BLM management's desert-wide obligation to achieve and maintain a balance between resource use and resource protection." CDCA Plan at 121. BLM reads this portion of the CDCA plan extremely narrowly and attempts to divorce it from the required NEPA analysis and alternatives.

Looking at the CDCA Plan requirement in context with the NEPA review it is clear that the BLM was required to analyze not only whether alternative locations were available that would not require a plan amendment, but also how the proposed amendment would affect desert-wide resource protection and whether alternative locations and alternative plan amendments would avoid or lessen those impacts—BLM fails to address the latter issue and did not look at any site alternatives. The inclusion of multiple "no action" alternatives, a reduced acreage alternative, and a reconfigured alternative as part of the NEPA analysis failed to cure this omission.

The CDCA Plan includes the Energy Production and Utility Corridors Element which is focused primarily on utility corridors with brief discussion of powerplant siting. Even in 1980 the CDCA Plan contemplated that alternative energy projects would likely be developed in the future but did not expressly provide planning direction for solar energy production. Nonetheless, the overarching principles expressed in the Decision Criteria are also applicable to the proposed project here including minimizing the number of separate rights-of-way, providing alternatives for consideration during the processing of applications, and "avoid[ing] sensitive resources wherever possible." CDCA Plan at 93. Nothing in the DEIS shows that BLM considered the landscape level issues and management objectives or alternatives to the proposed plan amendment *in the DEIS*.

In addition, BLM should have considered the impacts to existing land use plans for these public lands across several scales including, for example: in the Chuckwalla valley, in the Colorado Desert in California; and in the CDCA as a whole.

B. The DEIS Fails to Adequately Address Impacts to Multiple Use Class M Lands and Loss of Multiple Use in Favor of a Single Use for Industrial Purposes.

As FLPMA declares, public lands are to be managed for multiple uses "in a manner that will protect the quality of the scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." 43 U.S.C.§ 1701(a)(7) & (8). The CDCA Plan as amended provides for four distinct multiple use classes based on the sensitivity of resources in each area. The proposed project site is in MUC class M lands. DEIS at C.12-35. Under the CDCA Plan, Multiple-use Class M (Moderate Use) "protects sensitive, natural, scenic, ecological, and cultural resources values. For public lands designated as Class M the CDCA Plan intends a "*controlled balance* between higher intensity use and protection of public lands. This class provides for a wide variety o[f] present and future uses such as mining, livestock grazing, recreation, energy, and utility development. Class M management is *also* designed to conserve desert resources and to mitigate damage to those resources which permitted uses may cause." CDCA Plan at 13 (emphasis added). The proposed project is a high-intensity, single use of resources that will displace all other uses and that will significantly diminish (indeed, completely destroy) of approximately 5,000 acres of habitat including impacting aeolian transport in the dunes ecosystem, directly impacting habitat for desert tortoise and blocking a key tortoise habitat linkage area, and other impacts to species and habitats. The DEIS does consider alternative configurations that would avoid some impacts to some resources but still fails to consider how the impacts to sand dunes and Aeolian transport along with the loss of a large area of habitat will affect the biological resources of this area. Moreover, BLM does not address how

the loss of multiple uses in such a large area might affect other nearby public lands in the CDCA such as creating greater pressures on those land for the remaining multiple uses.

The DEIS does not consider whether and how new access roads created for the proposed project may increase off-road vehicle use in this area and thereby significantly increase impacts from ORVs on species and habitats surrounding the proposed project. As another example, the DEIS is unclear as to the extent that the proposal would require changes in the route network resulting in several routes which would need to be moved—those changes to the route network are simply not addressed in the DEIS (nor are the likely direct, indirect and cumulative impacts of changing those route designations adequately identified or analyzed, as discussed in detail below). Any changes to routes would require BLM to amend the route designations in the area because these routes are part of a network that was adopted through a plan amendment. When BLM does consider these issues, as it must, in a revised or supplemental DEIS, a range of alternatives must be considered in addition to the fact that such changes will undoubtedly change use of the previously existing nearby routes, most likely causing increased use on other nearby routes. Even if BLM attempts to simply reroute along the fenceline for the proposed project a plan amendment would be required and BLM must then consider that new unauthorized routes to provide connections to the other routes, and/or entirely new unauthorized routes may be created by off-road vehicle users *to avoid the industrial site entirely*. There is no evidence that recreational off-road vehicle users will be content to drive for miles along a fence adjoining an industrial site rather than striking off cross-country to connect with more scenic routes. Past experience shows that the latter is quite understandably a much more likely outcome and BLM should recognize this in analyzing the impacts of this project on the existing route network and any proposal to amend that network.

C. Fails to Adequately Address Other Ongoing Planning Efforts

As noted above, the DEIS fails to adequately address the proposed project in the context of other connected projects (including multiple renewable energy projects, substations and additional transmission lines) and the ongoing PEIS planning process for solar development in six western states undertaken by BLM and DOE. The scoping and early maps for the PEIS did identify this area as a proposed solar energy study area.[1] Unfortunately, that planning process has been slow to move forward. Without prior planning, there is a high risk that the direct, indirect and cumulative impacts of the proposed project in conjunction with others may lead to sprawl development in the area and undermine the planning for renewable energy industrial zones that BLM has undertaken.

Of particular concern is the failure of the DEIS to analyze the impacts of the gen-tie and the Red Bluff substation which is listed as a cumulative project but no location is provided and the BLM has failed to explore alternatives that would minimize impacts of the placement of that substation. The Devers to Palo Verde No. 2 environmental review preferred alternative (as revised for the California-only line adopted by the CPUC) did not analyze a substation in this area. The BLM cannot lawfully piecemeal this project approval. Moreover, the BLM has failed to explain how this site specific approval would interface with, or alternatively undermine, the solar programmatic planning by federal agencies for the western states. This critical issue

[1] http://solareis.anl.gov/documents/maps/studyareas/Solar_Study_Area_CA_Ltt_7-09.pdf

regarding planning on public lands is not adequately addressed in the DEIS which only mentions the PEIS process briefly, and then includes the PEIS as a foreseeable future project with no explanation (DEIS at B.3-13). The BLM does not analyze how the PEIS could be affected by the approval of this and other projects in the area and does not address how the piecemeal analysis of the substation and gen-tie line may undermine the planning for a solar zone in this area. Such analysis *after the fact* is not consistent with the planning requirements of FLPMA or, indeed, any rational land use planning principles.

D. BLM Failed to Inventory the Resources of these Public Lands Before Making a Decision to Allow Destruction of those Resources

FLPMA states that "[t]he Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values," and this "[t]his inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values." 43 U.S.C. § 1711(a). FLPMA also requires that this inventory form the basis of the land use planning process. 43 U.S.C. § 1701(a)(2). *See Center for Biological Diversity v. Bureau of Land Management*, 422 F.Supp.2d 1115, 1166-67 (N.D. Cal. 2006) (discussing need for BLM to take into account known resources in making management decisions); *ONDA v. Rasmussen,* 451 F.Supp. 2d 1202, 1212-13 (D. Or. 2006) (finding that BLM did not take a hard look under NEPA by relying on outdated inventories and such reliance was inconsistent with BLM's statutory obligations to engage in a continuing inventory under FLPMA). It is clear that BLM should not approve a management plan amendment based on outdated and inadequate inventories of affected resources on public lands.

As detailed below in the NEPA sections, here BLM has failed to compile an adequate inventory of the resources of the public lands that could be affected by the proposed project *before* preparing the DEIS (including, e.g., rare plants, golden eagle surveys, and other biological resources) which is necessary in order to adequately assess the impacts to resources of these public lands in light of the proposed plan amendment and BLM has also failed to adequately analyze impacts on known resources. Indeed, the DEIS states that surveys are ongoing after the DEIS was issued See DEIS at C.2-10 ("Follow-up spring and fall 2010 special-status plant surveys will be performed for 10 plant species within the Project Disturbance Area and along the proposed transmission line alignment and substation.") Similarly for golden eagles, inadequate surveys were conducted before the DEIS was prepared. *See* DEIS at C.2-4, C.2-39. Although the Center understands that golden eagle surveys have now been completed, because that information was not included in the DEIS and no analysis of impacts is provided, the BLM must revise and recirculate the DEIS or a supplement to include that new information. Moreover, for the Red Bluff substation which is a necessary project component, no site has been identified and the potential impacts have not been disclosed or analyzed and, as a result, the location of the gen-tie line has also not been fully examined.

Therefore, it appears that a revised DEIS or supplemental DEIS must be prepared to include several categories of new information including new survey data about the resources of the site and potential impacts of the project on resources of our public land and water, and that document must be circulated for public review and comment.

E. The DEIS Fails to Provide Adequate Information to Ensure that the BLM will Prevent Unnecessary and Undue Degradation of Public lands

FLPMA requires BLM to "take any action necessary to prevent unnecessary or undue degradation of the lands" and "minimize adverse impacts on the natural, environmental, scientific, cultural, and other resources and values (including fish and wildlife habitat) of the public lands involved." 43 U.S.C. §§ 1732(b), 1732(d)(2)(a). Without adequate information and analysis of the current status of the resources of these public lands, BLM cannot fulfill its duty to prevent unnecessary or undue degradation of the public lands and resources. Thus, the failure to provide an adequate current inventory of resources and environmental review undermines BLM's ability to protect and manage these lands in accordance with the statutory directive.

BLM has failed to properly identify and analyze impacts to the resources including the impacts from all of the project components. As detailed below, the BLM's failure in this regard violates the most basic requirements of NEPA and in addition undermines the BLM's ability to ensure that the proposal does not cause unnecessary and undue degradation of public lands. *See Island Mountain Protectors*, 144 IBLA 168, 202 (1998) (holding that "[t]o the extent BLM failed to meet its obligations under NEPA, it also failed to protect public lands from unnecessary or undue degradation."); *National Wildlife Federation*, 140 IBLA 85, 101 (1997) (holding that "BLM violated FLPMA, because it failed to engage in any reasoned or informed decisionmaking process" or show that it had "balanced competing resource values").

II. The DEIS Fails to Comply with NEPA.

NEPA is the "basic charter for protection of the environment." 40 C.F.R. § 1500.1(a). In NEPA, Congress declared a national policy of "creat[ing] and maintain[ing] conditions under which man and nature can exist in productive harmony." *Or. Natural Desert Ass'n v. Bureau of Land Mgmt.,* 531 F.3d 1114, 1120 (9th Cir. 2008) (quoting 42 U.S.C. § 4331(a)). NEPA is intended to "ensure that [federal agencies] … will have detailed information concerning significant environmental impacts" and "guarantee[] that the relevant information will be made available to the larger [public] audience." *Blue Mountains Biodiversity Project v. Blackwood,* 161 F.3d 1208, 1212 (9th Cir. 1998).

Under NEPA, before a federal agency takes a "'major [f]ederal action[] significantly affecting the quality' of the environment," the agency must prepare an environmental impact statement (EIS). *Kern v. U.S. Bureau of Land Mgmt.,* 284 F.3d 1062, 1067 (9th Cir. 2002) (quoting 43 U.S.C. § 4332(2)(C)). "An EIS is a thorough analysis of the potential environmental impact that 'provide[s] full and fair discussion of significant environmental impacts and … inform[s] decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.'" *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.,* 387 F.3d 989, 993 (9th Cir. 2004) (citing 40 C.F.R. § 1502.1). An EIS is NEPA's "chief tool" and is "designed as an 'action-forcing device to [e]nsure that the policies and goals defined in the Act are infused into the ongoing programs and actions of the Federal Government.'" *Or. Natural Desert Ass'n,* 531 F.3d at 1121 (quoting 40 C.F.R. § 1502.1).

An EIS must identify and analyze the direct, indirect, and cumulative effects of the proposed action. This requires more than "general statements about possible effects and some risk" or simply conclusory statements regarding the impacts of a project. *Klamath Siskiyou Wildlands Center v. BLM,* 387 F.3d 989, 995 (9th Cir. 2004) (citation omitted); *Oregon Natural Resources Council v. BLM,* 470 F.3d 818, 822-23 (9th Cir. 2006). Conclusory statements alone "do not equip a decisionmaker to make an informed decision about alternative courses of action or a court to review the Secretary's reasoning." *NRDC v. Hodel*, 865 F.2d 288, 298 (D.C. Cir. 1988).

NEPA also requires BLM to ensure the scientific integrity and accuracy of the information used in its decision-making. 40 CFR § 1502.24. The regulations specify that the agency "must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential." 40 C.F.R. § 1500.1(b). Where there is incomplete information that is relevant to the reasonably foreseeable impacts of a project and essential for a reasoned choice among alternatives, the BLM must obtain that information unless the costs of doing so would be exorbitant or the means of obtaining the information are unknown. 40 C.F.R. § 1502.22. Here the costs are reasonable to obtain information needed to complete the analysis and the BLM must provide additional information in the EIS—through a supplement or revised EIS. Even in those instances where complete data is unavailable, the EIS also must contain an analysis of the worst-case scenario resulting from the proposed project. *Friends of Endangered Species v. Jantzen*, 760 F.3d 976, 988 (9th Cir. 1985) (NEPA requires a worst case analysis when information relevant to impacts is essential and not known and the costs of obtaining the information are exorbitant or the means of obtaining it are not known) *citing Save our Ecosystems v. Clark*, 747 F.2d 1240, 1243 (9th Cir. 1984); 40 C.F.R. § 1502.22.

A. Purpose And Need and Project Description are Too Narrowly Construed and Unlawfully Segment the Analysis

1. Purpose and Need:

Agencies cannot narrow the purpose and need statement to fit only the proposed project and then shape their findings to approve that project without a "hard look" at the environmental consequences. To do so would allow an agency to circumvent environmental laws by simply "going-through-the-motions." It is well established that NEPA review cannot be "used to rationalize or justify decisions already made." 40 C.F.R. § 1502.5; *Metcalf v. Daley*, 214 F.3d 1135, 1141-42 (9th Cir. 2000) ("the comprehensive 'hard look' mandated by Congress and required by the statute must be timely, and it must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made.") As Ninth Circuit noted an "agency cannot define its objectives in unreasonably narrow terms." *City of Carmel-by-the-Sea v. U.S. Dept. of Transportation*, 123 F.3d 1142, 1155 (9th Cir. 1997); *Muckleshot Indian Tribe v. U.S. Forest Service*, 177 F. 3d 900, 812 (9th Cir. 1999). The statement of purpose and alternatives are closely linked since "the stated goal of a project necessarily dictates the range of 'reasonable' alternatives." *City of Carmel*, 123 F.3d at 1155. The Ninth Circuit recently reaffirmed this point in *National Parks Conservation Assn v.*

BLM, 586 F.3d 735, 746-48 (9th Cir. 2009) (holding that "[a]s a result of [an] unreasonably narrow purpose and need statement, the BLM necessarily considered an unreasonably narrow range of alternatives" in violation of NEPA).

The purpose behind the requirement that the purpose and need statement not be unreasonably narrow, and NEPA in general is, in large part, to "guarantee[ ] that the relevant information will be made available to the larger audience that may also play a role in both the decision-making process and the implementation of that decision." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). The agency cannot camouflage its analysis or avoid robust public input, because "the very purpose of a draft and the ensuing comment period is to elicit suggestions and criticisms to enhance the proposed project." *City of Carmel-by-the-Sea*, 123 F.3d at 1156. The agency cannot circumvent relevant public input by narrowing the purpose and need so that no alternatives can be meaningfully explored or by failing to review a reasonable range of alternatives.

The BLM's purpose and need for the proposed Palen project is "respond to Palen Solar I's application under Title V of FLPMA (43 U.S.C. 1761) for a ROW grant to construct, operate, and decommission a solar thermal facility on public lands in compliance with FLPMA, BLM ROW regulations, and other Federal applicable laws" (DEIS at A-11), and also states that the "BLM authorities include:

> • Executive order 13212, dated May 18, 2001, which mandates that agencies act expediently and in a manner consistent with applicable laws to increase the "production and transmission of energy in a safe and environmentally sound manner."
> • The EPAct, which requires the Department of the Interior (BLM's parent agency) to approve at least 10,000 MW of renewable energy on public lands by 2015.
> • Secretarial Order 3285, dated March 11, 2009, which "establishes the development of renewable energy as a priority for the Department of the Interior."

DEIS at A-12. The DEIS notes that an amendment to the CDCA Plan is needed in order to approve the project but does not clearly identify the plan amendment as a part of the project being evaluated. Rather, the DEIS states: "If the BLM decides to approve the issuance of a ROW grant, the BLM will also amend the CDCA Plan as required." DEIS at A-11. BLM's purpose and need is very narrowly construed to the proposed project itself and an amendment to the Plan *for the project only*. The purpose and need provided in the DEIS is impermissibly narrow under NEPA for several reasons, most importantly because it foreclosed meaningful alternatives review in the DEIS. Because the purpose and need and the alternatives analysis are at the "heart" of NEPA review and affect nearly all other aspects of the EIS, on this basis and others, BLM must revise and re-circulate the DEIS.

The DOE purpose and need statement provides:

> The Applicant has applied to the Department of Energy (DOE) for a loan guarantee under Title XVII of the Energy Policy Act of 2005 (EPAct 05), as amended by Section 406 of the American Recovery and Reinvestment Act of 2009, P.L. 111-5 (the "Recovery Act"). DOE is a cooperating agency on this EIS

> pursuant to an MOU between DOE and BLM signed in January 2010. The purpose and need for action by DOE is to comply with its mandate under EPAct by selecting eligible projects that meet the goals of the Act.

DEIS at A-12.

In discussing the cumulative scenario, the DOE loan guarantee program is also described as one of the incentive programs for funding renewable energy projects:

> Example[s] of incentives for developers to propose renewable energy projects on private and public lands in California, Nevada and Arizona, include the following:
>
> ● U.S. Treasury Department's Payments for Specified Energy Property in Lieu of Tax Credits under §1603 of the American Recovery and Reinvestment Act of 2009 (Public Law 1115) - Offers a grant (in lieu of investment tax credit) to receive funding for 30% of their total capital cost at such time as a project achieves commercial operation (currently applies to projects that begin construction by December 31, 2010 and begin commercial operation before January 1, 2017).
>
> ● U.S. Department of Energy (DOE) Loan Guarantee Program pursuant to §1703 of Title XVII of the Energy Policy Act of 2005 - Offers a loan guarantee that is also a low interest loan to finance up to 80% of the capital cost at an interest rate much lower than conventional financing. The lower interest rate can reduce the cost of financing and the gross project cost on the order of several hundred million dollars over the life of the project, depending on the capital cost of the project.

DEIS at B.3-2.

The Center is well aware that deadlines for funding, particularly for the American Recovery and Reinvestment Act ("ARRA") funds, have driven the pace of the environmental review for this project and others and, while such funding mechanisms are important, deadlines cannot be used as an excuse for rushed and inadequate NEPA review. The BLM and DOE must be concerned with the adequate NEPA review and even if the agencies can properly have an objective of *timely* approval of projects they cannot properly have as purpose and need of the project a *rushed* inadequate environmental impact review.

Moreover, in its discussion of the need for renewable energy production the DEIS fails to address risks associated with global climate change in context of including both the need for climate change mitigation strategies (e.g., reducing greenhouse gas emissions) and the need for climate change adaptation strategies (e.g., conserving intact wild lands and the corridors that connect them). All climate change adaptation strategies underline the importance of protecting intact wild lands and associated wildlife corridors as a priority adaptation strategy measure.

The habitat fragmentation, loss of connectivity for terrestrial wildlife, and introduction of predators and invasive weed species associated with the proposed project in the proposed

location may run contrary to an effective climate change adaptation strategy. Siting the proposed project in the proposed location impacting sand dune ecosystems, occupied habitat and important habitat linkage areas, major washes and other fragile desert resources could undermine a meaningful climate change adaptation strategy with a poorly executed climate change mitigation strategy. Moreover, the project itself will emit greenhouse gases and the DEIS contains no discussion of ways to avoid, minimize or off set these emissions although such mitigation is clearly feasible and other technologies have far less or no GHG emissions during operations are also likely to have fewer emissions when calculated on a lifecycle basis. The way to maintain healthy, vibrant ecosystems is not to fragment them and reduce their biodiversity.

B. The DEIS Does Not Adequately Describe Environmental Baseline

BLM is required to "describe the environment of the areas to be affected or created by the alternatives under consideration." 40 CFR § 1502.15. The establishment of the baseline conditions of the affected environment is a practical requirement of the NEPA process. In *Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988), the Ninth Circuit states that "without establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA." Similarly, without a clear understanding of the current status of these public lands BLM cannot make a rational decision regarding proposed project. *See Center for Biological Diversity v. U.S. Bureau of Land Management, et al*., 422 F. Supp. 2d 1115, 1166-68 (N.D. Cal. 2006) (holding that it was arbitrary and capricious for BLM to approve a project based on outdated and inaccurate information regarding biological resources found on public lands).

The DEIS fails to provide adequate baseline information and description of the environmental setting in many areas including in particular the status of rare plants, animals and communities including golden eagles, rare plants, and the sand dune ecosystem.

The baseline descriptions in the DEIS are inadequate particularly for the areas where surveys are ongoing. As discussed below, because of the deficiencies of the baseline data for the proposed project area, the DEIS fails to adequately describe the environmental baseline. Many of the rare and common but essential species and habitats have incomplete and/or vague on-site descriptions that make determining the proposed project's impacts difficult at best. Some of the rare species/habitats baseline conditions are totally absent, therefore no impact assessment is provided either. A supplemental document is required to fully identify the baseline conditions of the site, and that baseline needs to be used to evaluate the impacts of the proposed project.

C. Failure to Identify and Analyze Direct and Indirect Impacts to Biological Resources

The EIS fails to adequately analyze the direct, indirect, and cumulative impacts of the proposed project on the environment. The Ninth Circuit has made clear that NEPA requires agencies to take a "hard look" at the effects of proposed actions; a cursory review of environmental impacts will not stand. *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1150-52, 1154 (9th Cir. 1998). Where the BLM has incomplete or insufficient information,

NEPA requires the agency to do the necessary work to obtain it where possible. 40 C.F.R. §1502.22; *see National Parks & Conservation Ass'n v. Babbitt,* 241 F.3d 722, 733 (9th Cir. 2001) ("lack of knowledge does not excuse the preparation of an EIS; rather it requires [the agency] to do the necessary work to obtain it.")

Moreover, BLM must look at reasonable mitigation measures to avoid impacts in the DEIS but failed to do so here. Even in those cases where the extent of impacts may be somewhat uncertain due to the complexity of the issues, BLM is not relieved of its responsibility under NEPA to discuss mitigation of reasonably likely impacts at the outset. Even if the discussion may of necessity be tentative or contingent, NEPA requires that the BLM provide some information regarding whether significant impacts could be avoided. *South Fork Band Council of Western Shoshone v. DOI* , 588 F.3d 718 , 727 (9th Cir. 2009).

The lack of comprehensive surveys is particularly problematic. Failure to conduct sufficient surveys prior to construction of the project also effectively eliminates the most important function of surveys - using the information from the surveys to minimize harm caused by the project and reduce the need for mitigation. Often efforts to mitigate harm are far less effective than preventing the harm in the first place. In addition, without understanding the scope of harm before it occurs, it is difficult to quantify an appropriate amount and type of mitigation.

The DEIS recognizes (at pg. ES-15) that based on the information provided in the biological resources analysis does not complies with all of the laws, ordinances, regulations, and standards (LORS). Additionally impacts are not fully mitigated. For this reason alone, a supplemental or revised DEIS needs to be provided that complies with all the LORS and additional alternatives are included (including a preferred alternative) that avoids and reduces the impacts to biological resources.

The DEIS also acknowledges that the 2009 biological surveys are inadequate and supplementary 2010 surveys will be done (DEIS at C.2-3). However the results of those surveys are not available in the DEIS. Therefore, it is impossible to evaluate the potential impact of the proposed project based on the lack of adequate survey data.

The DEIS recognizes that the project is within two Wildlife Habitat Management Areas (WHMAs) as established under NECO – the Palen-Ford WHMA and Desert Wildlife Management Area (DWMA) Connectivity WHMA (DEIS at C.2-14). No mitigation is proposed to mitigate the identified losses of these important WHMAs (DEIS at C.2-64).

1. Desert Tortoise

The desert tortoise has lived in the western deserts for tens of thousands of years. In the 1970's their populations were noted to decline. Subsequently, the species was listed as threatened by the State of California in 1989 and by the U.S. Fish and Wildlife Service in 1990, which then issued a Recovery Plan for the tortoise in 1994. The U.S. Fish and Wildlife Service is in the process of updating the Recovery Plan, and a Draft Updated Recovery Plan was issued

in 2008, however it has not been finalized. Current data indicate a continued decline across the range of the listed species[2] despite its protected status and recovery actions.

The original and draft Updated Recovery Plans both recognize uniqueness in desert tortoise populations in California. This particular subpopulation of tortoise at the proposed project site are part of the Eastern Colorado Recovery unit[3]. Recent population genetics studies[4] have further confirmed 1994 Recovery Plan conclusions the Eastern Colorado Recovery unit was one of the most genetically unique recovery units. While the proposed project site may have low desert tortoise densities (the DEIS fails to identify the actual number of desert tortoise estimated to be onsite), this particular recovery unit has also been documented to have the second highest declines in population over the last two years – 37% decline [5]. The DEIS fails to identify and consider the localized impact to this recovery unit that is already in steep decline.

While Bio-10 requires a Desert Tortoise Relocation/Translocation Plan (DEIS at pg. C.2-130), no desert tortoise relocation/translocation plan was included in the DEIS. Recent desert tortoise translocations have resulted in significant short-term mortality up to 45%[6] and unknown long-term survivorship. It is imperative to have this important plan available in the revised DEIS in order for the public and decision makers to be able to evaluate the effectiveness of the proposed strategies.

Mechanisms need to be included to assure that any and all mitigation acquisitions will be conserved in perpetuity for the conservation of the desert tortoise. If those acquisitions are within existing Desert Wildlife Management Areas (DWMAs), higher levels of protection than are currently in place for DWMAs need to be put in place. NEPA mandates consideration of the relevant environmental factors and environmental review of "[b]oth *short- and long-term* effects" in order to determine the significance of the project's impacts. 40 C.F.R. § 1508.27(a) (emphasis added). BLM has clearly failed to do so in this instance with respect to the impact to the desert tortoise.

The 1:1 mitigation ratio of desert tortoise habitat outside of critical habitat is actually inadequate to mitigate for the destruction of habitat. Mitigation presumes that acquisition will be appropriate tortoise habitat (occupied or unoccupied) which is currently existing and providing benefits to the species, to off-set the elimination of the proposed project site. However, this strategy is still *a net loss of habitat* to the desert tortoise, as currently they are using or could use both the mitigation site and the proposed project site. Therefore, in order to aid in recovery of this declining species, at a minimum a 2:1 mitigation ratio should be required as mitigation for the total elimination of desert tortoise habitat on the proposed project site.

If tortoises are relocated or translocated, then the relocation and/or translocation areas need to be secured for tortoise conservation, to preclude moving the animals subsequently if additional projects move forward on the relocation or translocation site(s).

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[2] USFWS 2009
[3] USFWS 1994
[4] Murphy et al. 2007
[5] USFWS 2009.
[6] Gowan and Berry 2010.

2. Desert Bighorn Sheep

The DEIS completely dismisses any desert bighorn sheep impacts from the proposed project because of the I-10 interstate. While we agree that the I-10 is currently a barrier to the movement of bighorn (and other species), clearly the DEIS fails to evaluate the opportunity via the propose project to re-establish historic linkage for bighorn sheep across the Chuckwalla Valley between the Palen Mountains (Bighorn Wildlife Habitat Management Area [WHMA]) and the Chuckwalla Mountains (Bighorn WHMA). The DEIS simply proposes to add another significant block to bighorn and wildlife movement in the area, without considering ways to ameliorate or improve the existing conditions.

3. Mojave fringe-toed lizard/Sand dunes/Sand Transport System

We agree with the DEIS conclusion that the impacts of the proposed project to the sand transport corridor, the sand dune habitat and the Mojave fringe-toed lizard will be significant impacts that cannot be mitigated unless the Project is reconfigured to avoid the obstruction of sand transport processes and the sand habitat of the Mojave fringe-toed lizard (DEIS at C.2-1). Clearly a supplemental DEIS must examine alternatives that reduce the significant impact to these rare communities, processes and species.

The proposed project would "directly impact 1,735 acres of Mojave fringe-toed lizard habitat and would interfere with part of a regional sand transport corridor, affecting approximately 1,412 acres of downwind sand dunes" (DEIS at pg. C.2-4). The DEIS proposes to mitigate Mojave fringe-toed lizard habitat at different mitigation ratios based on unexplained reasoning. For example occupied habitat of stabilized and partially stabilized dunes are proposed to be mitigated at 3:1, while occupied sand fields are to be mitigated at 1:1 (DEIS at pg C.2-65). Additionally indirect impacts (i.e. impacts caused to downwind sand deposits from impacts to the sand transport system) are proposed at only0.5:1 (DEIS at pg. C.2-65). Other solar energy projects proposed to impact Mojave fringe-toed lizard habitat have identified mitigation ratios of 5:1 and 3:1 for direct impacts to all occupied Mojave fringe-toed lizard habitat and lesser ratios for indirect impacts. The DEIS fails to identify why different mitigation ratios are being used in different areas, when clearly the direct impacts will eliminate all occupied habitat of Mojave fringe-toed lizards on the site, and really directly impact down wind sand deposits as well. In addition, Table 6 notes that the acreage of stabilized and partially stabilized sand dunes to be directly impacted "may change upon verification of the extent of stabilized and partially stabilized sand dunes present in the Project Disturbance Area" (DEIS at pg.66). Clearly a supplemental DEIS needs to clarify exactly how much Mojave fringe-toed lizard habitat would be impacted by the proposed project and identify a consistent mitigation ratio for impacts to the Mojave fringe-toed lizard.

The DEIS also fails to evaluate the impacts of the proposed project on Mojave fringe-toed lizard outside of the project site. As Barrows et al. (2006)[7] found, edge effects are significant for fringe-toed lizards and, in addition, the increase in predators associated with

[7] Barrows et al. 2006

developed edges may also have a significant adverse effect on fringe-toed lizards and other species.

4. Rare and Special Status Plants

As mentioned above, the botanical surveys were one of the inadequate surveys identified, and 2010 surveys were/are being done (DEIS at C.2-3). These incomplete data sets preclude evaluation of the impacts, or more importantly the ability to design the project to avoid and minimize impacts. Clearly a supplemental DEIS is required to present these missing data.

5. Migratory and Other Birds and Burrowing Owls

Birds

The DEIS downplays the fatalities that have been documented to occur from birds running into mirrors[8]. Adjacent to the proposed project site are agricultural fields, which also attract birds. The DEIS does not quantify the number of birds (rare, migratory or otherwise) that use/traverse the project site from the avian point count surveys, nor does it evaluate the impact to birds. McCrary[9] estimated 1.7 birds deaths per week on a 32 ha site with mirrors and a power tower configuration. The proposed project site is approximately 1,578 ha (almost 50 times larger). While it is a solar trough technology and has a different kind of mirror and power plant configuration other researchers have evaluated, impacts to avian species from reflective surfaces and power lines[10] are also a concern. The DEIS states that "there is insufficient information available to conclude with certainty that the PSPP would not be an ongoing source of mortality to birds for the life of the project" (DEIS at C.2-98). We note that because of insufficient information the opposite conclusion could also be drawn. The revised DEIS needs to analyze likely impacts to birds from the proposed project and mirror configuration based on the point counts. The failure to provide the baseline data from which to make any impact assessment violates NEPA. This failure to analyze impacts is not only a NEPA violation, but for migratory birds, may also lead to a violation of the Migratory Bird Treaty Act, 16 U.S.C. §§ 703 -711, because migratory birds may be "taken" if the proposed project is constructed. Bio-16 requires an Avian Protection Plan which is proposed to "provide the information needed to determine if operation of the Project posed a collision risk for birds, and would provide adaptive management measures to mitigate those impacts to less than significant levels" (DEIS at pg. C.2-98). However, the Avian Protection Plan is not available to provide an assessment of impacts to migratory birds.

While evaporation ponds noted as being part of the project in the DEIS (DEIS at pg. ES-11) we could not actually locate additional discussion of them in the DEIS. Open water of any kind in the desert is an attractant to wildlife, and this very important issue needs to be addressed in the supplemental DEIS particularly with regards to the number and size of the basins,

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[8] McCrary 1986
[9] Ibid
[10] Klem 1990, Erickson et al. 2005

attraction to animals including birds (including ravens), and strategies to keep them from attracting animals.

Additionally Executive Order 13186 states "Each Federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations is directed to develop and implement, within 2 years, a Memorandum of Understanding (MOU) with the Fish and Wildlife Service (Service) that shall promote the conservation of migratory bird populations." [11] Furthermore the EO states that goals pursuant to the MOU include "3) prevent or abate the pollution or detrimental alteration of the Environment for the benefit of migratory birds, as practicable;" and "(6) ensure that environmental analyses of Federal actions required by the NEPA or other established environmental review processes evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern;". Clearly, the supplemental DEIR needs to adequately identify the migratory bird issues on site and evaluate the impact to those species in light of the guidance in Executive Order 13186.

Burrowing Owls

The DEIS notes that burrowing owl including mated pairs are located in the proposed project area (DEIS at C.2-86-87). Preliminary results from the 2006-7 statewide census identified that the Sonoran desert harbors few Western burrowing owls.[12] The DEIS fails to evaluate the potential impact of the proposed project on this regional distribution of owls.

While "passive relocation" does minimize immediate direct take of burrowing owls, ultimately the burrowing owls' available habitat is reduced, and "relocated" birds are forced to compete for resources with other resident burrowing owls and may move into less suitable habitat, ultimately resulting in "take". While Bio-18 requires a Burrowing Owl mitigation plan, that plan is not provided. Bio-18 also requires a Burrowing Owl Relocation and Translocation Plan which is also not provided. As with other species, the lack of these plans does not enable the evaluation of proposed mitigation. Additionally, the requirements of the plan do not explicitly include long-term monitoring of passively relocated birds in order to evaluate survivorship of passively relocated birds.

Golden Eagle

While no golden eagles were documented on the project site, as the DEIS notes "focused surveys for nest sites were not conducted, nor was an assessment made of use of the Project site by wintering golden eagles" (DEIS at pg. C.2-4). In addition, it appears that 2 golden eagle nests are located less than 10 miles away from the project site (DEIS Figure 10b – no page number). The DEIS fails to present exactly how to mitigate the loss of a substantial amount of foraging habitat for the golden eagle. The fact still remains that significant amounts of foraging habitat will decrease carrying capacity of the landscape and could result in a potential loss of habitat needed to support a nesting pair, which would impact reproductive capacity.

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[11] http://ceq.hss.doe.gov/nepa/regs/eos/eo13186.html
[12] IBP 2008

Scientific literature on this subject is clear - the presence of humans detected by a raptor in its nesting or hunting habitat can be a significant habitat-altering disturbance even if the human is far from an active nest[13]. Regardless of distance, a straight-line view of disturbance affects raptors, and an effective approach to mitigate impacts of disturbance for golden eagles involves calculation of viewsheds using a three-dimensional GIS tool and development of buffers based on the modeling[14]. Golden eagles have also been documented to avoid industrialized areas that are developed in their territory.[15] Additionally, the DEIS does not actually clearly analyze the impacts to and mitigations for the golden eagle under the Bald Eagle and Golden Eagle Protection Act, which prohibits, except under certain specified conditions, the take, possession, and commerce of such birds.

6. Badger and Desert Kit Foxes

Badgers and desert kit foxes were identified to occur throughout the project area (DEIS C.2-4). Literature on the highly territorial badger indicates that badger home territories range from 340 to 1,230 hectares[16]. Therefore, the proposed project could displace *at least* one badger territory. While surveys prior to construction are clearly essential, even passive relocation of badgers into suitable habitat may result "take". Excluding badger from the site is likely to cause badgers to move into existing badger's territory. The same scenario of passive relocation for kit fox may also result in "take". Studies need to be provided on both on- and off-site badger and kit fox territories if animals are to be passively relocated in order to increase chances of persistence. At a minimum, the revised or supplemental DEIS should identify suitable habitat nearby if the project is relying on passive relocation as a mitigation strategy.

7. Cryptobiotic soil crusts and Desert Pavement

The proposed project is located in the Mojave Desert Air Quality Management District area, which is already in non-attainment for PM-10 particulate matter[17]. The construction of the proposed project further increases emissions of these types of particles because of the disruption and elimination of potentially thousands of acres of cryptobiotic soil crusts. Cryptobiotic soil crusts are an essential ecological component in arid lands. They are the "glue" that holds surface soil particles together precluding erosion, provide "safe sites" for seed germination, trap and slowly release soil moisture, and provide CO_2 uptake through photosynthesis[18].

The FEIS does not describe the on-site cryptobiotic soil crusts. The proposed project will disturb an unidentified portion of these soil crusts and cause them to lose their capacity to stabilize soils and trap soil moisture. The DEIS fails to provide a map of the soil crusts over the project site, and to present any avoidance or minimization measures. It is unclear how many acres of cryptobiotics soils will be affected by the project. The DEIS must identify the extent of

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[13] Richardson and Miller 1997
[14] Camp et al. 1997; Richardson and Miller 1997
[15] Walker et al. 2005
[16] Long 1973, Goodrich and Buskirk 1998
[17] http://www.mdaqmd.ca.gov/index.aspx?page=214
[18] Belnap 2003, Belnap et al 2003, Belnap 2006, Belnap et al. 2007

the cryptobiotic soils on site and analyze the potential impacts to these diminutive, but essential desert ecosystem components as a result of this project.

While desert pavements are mentioned as occurring on the proposed project site (DEIS at C.2-16), quantitative acreage of pavement are not identified. The impact to air quality from disturbance of desert pavement is not analyzed.

8. Insects

The DEIS fails to address insects on the proposed project site. In fact no surveys or evaluation of rare or common insects are included in the DEIS. Dune habitats are notorious for supporting endemic insects, typically narrow habitat specialists[19].

9. Decommissioning and Reclamation Plan

Desert lands are notoriously hard to revegetate or rehabilitate[20] and revegetation never supports the same diversity that originally occurred in the plant community prior to disturbance[21]. The task of revegetating almost eleven square miles will be a Herculean effort that will require significant financial resources. In order to assure that the ambitious goals of the revegetation effort is met post project closure, it will be necessary to bond the project, so that all revegetation obligations will be met and assured. The bond needs to be structured so that it is tied to meeting the specific revegetation criteria.

The project will cause permanent impacts to the on-site plant communities and habitat for wildlife despite "revegetation", because the agency's regulations based on the Northern and Eastern Colorado Plan's rehabilitation strategies[22] only requires 40% of the original density of the "dominant" perennials, only 30% of the original cover. Dominant perennials are further defined as "any combination of perennial plants that originally accounted cumulatively for at least 80 percent of relative density".[23] These requirements fail to truly "revegetate" the plant communities to their former diversity and cover even over the long term. While Bio-22 requires the development of a Decommissioning Plan, that plan is not available for public review. In fact the DEIS states that "Draft Conceptual Decommissioning Plan (AECOM 2010d) does not provide sufficient information to guide the decommissioning of the channel or restoration of the Project Disturbance Area, nor does it provide any information that could be used to develop an estimate of the funding needed for those activities (DEIS at pg. C.2-99). BLM's own regulations 43 CFR 3809.550 et seq. require a detailed reclamation plan and a cost estimate, they need to be included in the revised EIS. A comprehensive decommissioning plan must be developed not just for the proposed channels, but for the whole project site. This plan must be included in the revised or supplement DEIS in order to evaluate the effectiveness as mitigation.

10. Fire Plan

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[19] Dunn 2005.
[20] Lovich and Bainbridge 1999
[21] Longcore 1997
[22] http://www.blm.gov/ca/st/en/fo/cdd/neco.html
[23] Ibid

Fire in desert ecosystems is well documented to cause catastrophic landscape scale changes[24] and impacts to the local species[25]. The DEIS mentions the impacts of fire via the proliferation of nonnative weeds (DEIS at C.2-17), it fails to analyze the impacts of fire on adjacent natural desert habitat. The DEIS fails to adequately analyze the impact that an escaped on-site-started fire could have on the natural lands adjacent to the project site if it escaped from the site. The DEIS also fails to address the mitigation of this potential impact. Instead it defers it to the Worker Environmental Awareness Program (WEAP) and only requires "a discussion of fire prevention measures to be implemented by workers during project activities" (DEIS at C.2-153). A fire prevention and protection plan needs to be developed and required to prevent the escape of fire onto the adjacent landscape (avoidance), lay out clear guidelines for protocols if the fire does spread to adjacent wildlands (minimization) and a revegetation plan if fire does occur on adjacent lands originating from the project site (mitigation) or caused by any activities associated with construction or operation of the site even if the fire originates off of the project site.

11. Failure to Identify Appropriate Mitigation

Because the DEIS fails to provide adequate identification and analysis of impacts, inevitably, it also fails to identify adequate mitigation measures for the project's environmental impacts. "Implicit in NEPA's demand that an agency prepare a detailed statement on 'any adverse environmental effects which cannot be avoided should the proposal be implemented,' 42 U.S.C. § 4332(C)(ii), is an understanding that an EIS will discuss the extent to which adverse effects can be avoided." *Methow Valley*, 490 U.S. at 351-52. Because the DEIS does not adequately assess the project's direct, indirect, and cumulative impacts, its analysis of mitigation measures for those impacts is necessarily flawed. The DEIS must discuss mitigation in sufficient detail to ensure that environmental consequences have been fairly evaluated." *Methow Valley*, 490 U.S. at 352; *see also Idaho Sporting Congress*, 137 F.3d at 1151 ("[w]ithout analytical detail to support the proposed mitigation measures, we are not persuaded that they amount to anything more than a 'mere listing' of good management practices"). As the Supreme Court clarified in *Robertson*, 490 U.S. at 352, the "requirement that an EIS contain a detailed discussion of possible mitigation measures flows both from the language of [NEPA] and, more expressly, from CEQ's implementing regulations" and the "omission of a reasonably complete discussion of possible mitigation measures would undermine the 'action forcing' function of NEPA."

Although NEPA does not require that the harms identified actually be mitigated, NEPA does require that an EIS discuss mitigation measures, with "sufficient detail to ensure that environmental consequences have been fairly evaluated" and the purpose of the mitigation discussion is to evaluate whether anticipated environmental impacts *can be avoided*. *Methow Valley*, 490 U.S. at 351-52. As the Ninth Circuit recently noted: "[a] mitigation discussion without at least *some* evaluation of effectiveness is useless in making that determination." *South Fork Band Council of Western Shoshone v. DOI* , 588 F.3d 718 , 727 (9th Cir. 2009) (emphasis

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[24] Brown and Minnich 1986, Lovich and Bainbridge 1999, Brooks 2000, Brooks and Draper 2006, Brooks and Minnich 2007

[25] Dutcher 2009

in original).

Here, the DEIS does not provide a full analysis of possible mitigation measures to avoid or lessen the impacts of the proposed project and therefore the BLM cannot properly assess the likelihood that such measures would actually avoid the impacts of the proposed project.

D. Key Plans Not Included

The DEIS fails to include key plans for public review. Plans identified in the DEIS and relied upon for adequate mitigation but which are unavailable include:

- Weed Management Plan (DEIS at C.2-170)
- Biological Resources Mitigation Implementation and Monitoring Plan (DEIS at C.2-153)
- Raven Management and Monitoring Plan (DEIS at C.2-169)
- detailed revegetation plan for temporary disturbance (DEIS at C.2-158)
- Decommissioning and Reclamation Plan (for permanent closure) (DEIS at C.2-181)
- Burrowing Owl Mitigation and Monitoring Plan (DEIS at C.2-173)
- Burrowing Owl Relocation/Translocation Plan (DEIS at C.2-86)
- Avian Protection Plan (DEIS at C.2-171)
- Desert Tortoise Relocation/Translocation Plan (DEIS at C.2-162)
- Desert Tortoise Management Plan for Compensatory Mitigation Lands (DEIS at C.2-89)
- Special-status Plant Impact Avoidance and Mitigation Plan (DEIS at C.2-175)
- Management Plan for Sand Dune/Fringe-toed Lizard Compensation lands (DEIS at C.2-177)
- Ground Water Dependent Vegetation Monitoring Plan (DEIS at C.2-182)
- Compensatory Mitigation Plan for State Waters (DEIS at C.2-179)
- Desert Tortoise Compensatory Mitigation Plan (DEIS at C.2-89)

Plans that are not currently required but need to be included:

- Bat Protection Plan
- Plan for restoring sheet flow to the terrain downslope of the Project boundaries
- Management Plan for Sand Dune/Fringe-toed Lizard
- Fire Plan

All of these plans are key components to evaluating the avoidance, minimization and mitigation to biological resources by the proposed project. Their absence makes it impossible to evaluate the impacts from the proposed project. Each of these plans needs to be included in the supplemental EIS.

E. Impacts to Water Resources— Surface and Groundwater Water Impacts

As the DEIS notes, the proposed project will impact a large number of washes and ephemeral streams and is on an alluvial fan. These areas provide important habitat values that will be completely lost by the grading proposed for the project site. Moreover, the loss of natural surface water flows and the re-direction of surface waters will have significant impacts to the

dunes ecosystems. The impacts on soils and particularly on sand transport from the proposed project have not been adequately addressed in the DEIS.

The Center appreciates that the proposed Palen project would be dry-cooled with water use averaging 300 acre-feet/year. DEIS at C.9-4. While this proposed project would use significantly less water than proposed for other projects (particularly the proposed Genesis project which seeks to use an average of 1,644 acre-feet/yr), even with dry cooling, the amount of water use by the project will be significant in this arid area and the DIES does not contain sufficient information to show that surface resources on other public lands will not be affected by the drawdown of the water table *over the life of the project*. Moreover, the cumulative impacts to groundwater resources from this project and others in the area could be significant annually and over the life of the project.

Reserved Water Rights: As BLM is well aware, the California Desert Protection Act ("CDPA") expressly reserved water rights for wilderness areas that were created under the act including the Palen-McCoy Wilderness and others. 16 U.S.C. §410aaa-76.[26] The CDPA reserved sufficient water to fulfill the purposes of the Act which include to "preserve unrivaled scenic, geologic, and wildlife values associated with these unique natural landscapes," "perpetuate in their natural state significant and diverse ecosystems of the California desert," and "retain and enhance opportunities for scientific research in undisturbed ecosystems." 103 P.L. 433, Sec. 2. The priority date of such reserved water rights is 1994 when the CDPA was enacted. Therefore, at minimum, the BLM must ensure that use of water for the proposed project (and cumulative projects) *over the life of the proposed projects* will not impair those values in the wilderness that depend on water resources (including perennial, seasonal, and ephemeral creeks, springs and seeps as well as any riparian dependent plants and wildlife).

Although no *express* reservation of rights has been made for many of the other public lands in the CDCA, the DEIS should have addressed the federal reserved water rights afforded to the public to protect surface water sources on all public lands affected by the proposed project. Pursuant to Public Water Reserve 107 ("PWR 107"), established by Executive Order in 1926, government agencies cannot authorize activities that will impair the public use of federal reserved water rights.

PWR 107 creates a federal reserved water right in water flows that must be maintained to protect public water uses. *U.S. v. Idaho*, 959 P.2d 449,453 (Idaho, 1998) *cert. denied; Idaho v. U.S.* 526 U.S. 1012 (1999); *Cappaert v. U.S.*, 426 U.S. 128, 145 (1976). PWR 107 applies to reserve water that supports riparian areas, reserve water that provides flow to adjacent creeks and isolated springs that are "nontributary" or which form the headwaters of streams. *U.S. v. City & County of Denver*, 656 P.2d 1, 32 (Colo., 1982). Accordingly, BLM cannot authorize activities that will impair the public use of reserved waters covered by PWR 107.

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[26] The reservation excluded two wilderness areas with regard to Colorado River water. See 103 P.L. 433; 108 Stat. 4471; 1994 Enacted S. 21; 103 Enacted S. 21, SEC. 204. COLORADO RIVER. ("With respect to the Havasu and Imperial wilderness areas designated by subsection 201(a) of this title, no rights to water of the Colorado River are reserved, either expressly, impliedly, or otherwise.")

BLM must examine the federal reserved water rights within the area affected by the proposed project and other proposed projects in this area that will use significant amounts of groundwater. This examination must include a survey of the any water sources potentially affected by the proposed project. The BLM must ensure that any springs, seeps, creeks or other water sources on public land and particularly within the wilderness areas are not degraded by the proposed projects' use of water and continue meet the needs of the existing wildlife and native vegetation that depend on those water resources.

PWR 107 also protects the public lands on which protected water sources exist. Accordingly, BLM should not only consider the impact of projects on water sources present on public lands, but also the direct and indirect impacts of the proposed project on the surrounding lands as well as impacts to the ecosystem as a whole.

The Center is also concerned that the discussion in the DEIS is also incomplete because it fails to address any potential water rights that could arguably be created from use of groundwater by the proposed project on these public lands. While the Center recognizes that this issue may involve somewhat complex legal issues, at minimum, the BLM must address this question and to ensure that any water rights that could *arguably* be created will be conveyed back to the BLM owner and run with the land at the end of the proposed project ROW term. The BLM must provide a mechanism to insure that in no case will the use of water for the proposed project on these public lands result in water rights accruing to the project applicant that it could arguably convey to any third party. Therefore, any water rights *arguably* created by groundwater pumping on these public lands for the proposed project must not ultimately accrue to any third party for use *off-site or on-site* in the future for any other project. Moreover, BLM should ensure that the applicant will not use the groundwater associated with the project off-site for any purpose.

The DEIS states (at pg. ES-16) that based on the information provided in the soils and water analysis it is undetermined if the project proposal and mitigations complies with all of the LORS –based primarily on the lack of a jurisdictional determination from the Army Corps of Engineers. However, the DEIS then assumes impacts can be mitigated.

F. The DEIS Fails to Adequately Identify, Analyze and Off-set Impacts to Air Quality and GHG Emissions.

Federal courts have squarely held that NEPA requires federal agencies to analyze climate change impacts. *Center for Biological Diversity v. National Highway Traffic Safety Administration*, 508 F.3d 508 (9th Cir. 2007). As most relevant here, NEPA requires consideration of greenhouse gas emissions ("GHG emissions") associated with all projects and, in order to fulfill this requirement the agencies should look at all aspects of the project which may create greenhouse gas emissions including operations, construction, and life-cycle emissions from materials. Where a proposed project will have significant GHG emissions, the agency should identify alternatives and/or mitigation measures that will lessen such effects.

As part of the NEPA analysis federal agencies must assess and, wherever possible, quantify or estimate GHG emissions by type and source by analyzing the direct operational

impacts of proposed actions. Assessment of direct emissions of GHG from on-site combustion sources is relatively straightforward. For many projects, as with the proposed project, energy consumption will be the major source of GHGs. The indirect effects of a project may be more far-reaching and will require careful analysis. Within this category, for example, the BLM should evaluate, GHG and GHG-precursor emissions associated with construction, electricity use, fossil fuel use, water consumption, waste disposal, transportation, the manufacture of building materials (lifecycle analysis), and land conversion. Moreover, because many project may undermine or destroy the value of carbon sinks, including desert soils, projects may have additional indirect effects from reduction in carbon sequestration, therefore both the direct and quantifiable GHG emissions as well as the GHG effects of destruction of carbon sinks should be analyzed.

The discussion of greenhouse gas emissions ("GHG") in the DEIS notes that the solar project will produce GHGs primarily from the gas boilers and Heat Transfer Fluid ("HTF") heaters. The GHG emissions from the boilers during project operations is estimated to be 7,408 metric tons CO2 equivalent (however the emissions from the HTF heaters are not listed), with the metric tons CO2 equivalent annually for total operations emissions (including all sources) of 10,124 metric tons CO2 equivalent annually. DEIS at C.1-68 (Greenhouse gas table 3). The boilers and heaters are stated to be for start up or freeze control (DEIS at C.1-69), but the DEIS assumes that they may be allowed to be used for very long periods of time – up to 12 hours per day for the boilers up to 5,100 hours per year (no clear limits on the HTF heaters is provided) . *See* DEIS at C.1-25. No explanation is provided for these long hours of supplemental natural gas use for this solar power plant and no additional limits are discussed or analyzed in violation of NEPA. The DEIS also fails to adequately explore whether an alternative solar technology (such as PV) would reduce greenhouse gas emissions both during operations and over the life-cycle of the components of the proposed project. There is no discussion of reducing these sources by using alternative fuels or highly efficient vehicles and equipment and no discussion of providing off sets for these GHG emissions.

Another GHG emission source for this proposed project is SF6 from electrical equipment leakage. DEIS at C.1-68. However, the DEIS does not mention additional sources of SF6 from transmission lines associated with the project. Moreover, leakage of SF6 is of particular concern as it is many times more potent greenhouse gas than CO2—indeed, its potential as a GHG has been estimated at 23,900 times that of CO2 (for a 100 year time horizon) and it can persist in the atmosphere far longer than CO2 as well—up to 3,200 years.[27] The DEIS fails to state the actual amount of SF6 that is estimated to leak from equipment and provides only that 12 MTCO2E is expected in emissions each year. No information is provided on the calculation. Moreover, the DEIS does not analyze any alternatives to avoid or minimize the long-term emissions of this powerful GHG from operations and no mitigation measures are provided.

[27] P. Forster et al., *Changes in Atmospheric Constituents and in Radiative Forcing,*
in CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS. CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (Solomon, S., et al. eds., Cambridge University Press 2007) at p. 212, Table 2.14.

The GHG emissions from the construction phase of the project are stated to be over 101,000 metric tons CO2 equivalent (Greenhouse gas table 2, DEIS C.1-68). Again, there is no discussion of reducing these emissions by using more efficient equipment or vehicles.

The DEIS also fails to adequately address other air quality issues including PM10 both during construction and operation which is of particular concern in this area which is a nonattainment area for PM10 and ozone. It is clear that extensive on-site grading will result in significant amounts of bare soils and increased PM10 may be introduced into the air by wind and that the use of the area during construction and operations will lead to additional PM10 emissions from the site. Although some mitigation measures are suggested they are not specific and enforceable and because the extent of the impact has not been adequately addressed as an initial matter there is no way to show that the mitigation measures proffered will reduce the impacts to less than significance.

BLM fails to identify any significant GHG emissions and therefore does not provide for avoidance, minimization, or mitigation. BLM has also failed to include the loss of carbon sequestration from soils in its calculations or to provide a lifecycle analysis of GHG emissions that include manufacturing and disposal. Moreover, it is undisputed that in the near-term GHG emissions will increase emissions during construction, and in the manufacturing and transportation of the components. BLM fails to consider any alternatives to the project that would minimize such emissions or to require that these near-term emissions be off set in any way.

Although the proposed project may reduce GHG's overall it will also emit GHGs during both construction and operations that are not accounted for or off-set, BLM completely fails to explore this aspect of the impacts of the project in the DEIS in violation of NEPA.

G. The Analysis of Cumulative Impacts in the DEIS Is Inadequate

A cumulative impact is "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7. The Ninth Circuit requires federal agencies to "catalogue" and provide useful analysis of past, present, and future projects. *City of Carmel-By-The-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142, 1160 (9th Cir. 1997); *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 809-810 (9th Cir. 1999).

"In determining whether a proposed action will significantly impact the human environment, the agency must consider '[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment.' 40 C.F.R. § 1508.27(b)(7)." *Oregon Natural Resources Council v. BLM,* 470 F.3d 818, 822-823 (9th Cir. 2006). NEPA requires that cumulative impacts analysis provide "some quantified or detailed information," because "[w]ithout such information, neither courts nor the public . . . can be assured that the Forest Service provided the hard look that it is required to provide." *Neighbors*

of Cuddy Mountain v. United States Forest Service, 137 F.3d 1372, 1379 (9th Cir. 1988); *see also id*. ("very general" cumulative impacts information was not hard look required by NEPA). The discussion of future foreseeable actions requires more than a list of the number of acres affected, which is a necessary but not sufficient component of a NEPA analysis; the agency must also consider the actual environmental effects that can be expected from the projects on those acres. *See Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 995-96 (9th Cir. 2004) (finding that the environmental review documents "do not sufficiently identify or discuss the incremental impact that can be expected from each [project], or how those individual impacts might combine or synergistically interact with each other to affect the [] environment. As a result, they do not satisfy the requirements of the NEPA.") Finally, cumulative analysis must be done as early in the environmental review process as possible, it is not appropriate to "defer consideration of cumulative impacts to a future date. 'NEPA requires consideration of the potential impacts of an action *before* the action takes place.'" *Neighbors*, 137 F.3d at 1380 *quoting City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1313 (9th Cir. 1990) (emphasis in original).

The DEIS identifies many of the cumulative projects but does not meaningfully analyze the cumulative impacts to resources in the California desert from the many proposed projects (including renewable energy projects and others). Moreover, because the initial identification and analysis of impacts unfinished, the cumulative impacts analysis cannot be complete. For example, the identification of plant communities on site is unfinished and incomplete as is the evaluation of the impacts of the gen-tie line and the Red Bluff substation, the cumulative impacts are also therefore inadequate.

The DEIS also fails to consider all reasonably foreseeable impacts in the context of the cumulative impacts analysis. *See Native Ecosystems Council v. Dombek, et al,* 304 F.3d 886 (9th Cir. 2002) (finding future timber sales and related forest road restriction amendments were "reasonably foreseeable cumulative impacts"). The DEIS also fails to provide the needed analysis of how the impacts might combine or synergistically interact to affect the environment in this valley or region. *See Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 995-96 (9th Cir. 2004).

The NEPA regulations also require that indirect effects including changes to land use patterns and induced growth be analyzed. "Indirect effects," include those that "are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include *growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems*." 40 C.F.R. s.1508.8(b) (emphasis added). *See TOMAC v. Norton*, 240 F. Supp.2d 45, 50-52 (D.D.C. 2003) (finding NEPA review lacking where the agency failed to address secondary growth as it pertained to impacts to groundwater, prime farmland, floodplains and stormwater run-off, wetlands and wildlife and vegetation); *Friends of the Earth v. United States Army Corps of Eng'rs*, 109 F. Supp.2d 30, 43 (D.D.C. 2000) (finding NEPA required analysis of inevitable secondary development that would result from casinos, and the agency failed to adequately consider the cumulative impact of casino construction in the area); *see also Mullin v. Skinner*, 756 F. Supp. 904, 925 (E.D.N.C. 1990) (Agency enjoined from proceeding with bridge project which induced growth in island community until it prepared an adequate EIS identifying and discussing in detail

the direct, indirect, and cumulative impacts of and alternatives to the proposed Project); *City of Davis v. Coleman*, 521 F.2d 661 (9th Cir. 1975) (requiring agency to prepare an EIS on effects of proposed freeway interchange on a major interstate highway in an agricultural area and to include a full analysis of both the environmental effects of the exchange itself and of the development potential that it would create).

Among the cumulative impacts to resources that have not been fully analyzed are impacts to desert tortoise, impacts to Mojave fringe-toed lizard and sand dunes ecosystems, impacts to golden eagles, and impacts to water resources. The cumulative impacts to the resources of the California deserts has not been fully identified or analyzed, and mitigation measures have not been fully analyzed as well.

H. The EIS' Alternatives Analysis is Inadequate

NEPA requires that an EIS contain a discussion of the "alternatives to the proposed action." 42 U.S.C. §§ 4332(C)(iii),(E). The discussion of alternatives is at "the heart" of the NEPA process, and is intended to provide a "clear basis for choice among options by the decisionmaker and the public." 40 C.F.R. §1502.14; *Idaho Sporting Congress*, 222 F.3d at 567 (compliance with NEPA's procedures "is not an end in itself . . . [but] it is through NEPA's action forcing procedures that the sweeping policy goals announced in § 101 of NEPA are realized.") (internal citations omitted). NEPA's regulations and Ninth Circuit case law require the agency to "rigorously explore" and objectively evaluate "all reasonable alternatives." 40 C.F.R. § 1502.14(a) (emphasis added); *Envtl. Prot. Info. Ctr. v. U.S. Forest Serv.*, 234 Fed. Appx. 440, 442 (9th Cir. 2007). "The purpose of NEPA's alternatives requirement is to ensure agencies do not undertake projects "without intense consideration of other more ecologically sound courses of action, including shelving the entire project, or of accomplishing the same result by entirely different means." *Envtl. Defense Fund, Inc. v. U.S. Army Corps of Engrs.*, 492 F.2d 1123, 1135 (5th Cir. 1974). An agency will be found in compliance with NEPA only when "all reasonable alternatives have been considered and an appropriate explanation is provided as to why an alternative was eliminated." *Native Ecosystems Council v. U.S. Forest Serv.,* 428 F.3d 1233, 1246 (9th Cir. 2005); *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228-1229 (9th Cir. 1988). The courts, in the Ninth Circuit as elsewhere, have consistently held that an agency's failure to consider a reasonable alternative is fatal to an agency's NEPA analysis. *See, e.g., Idaho Conserv. League v. Mumma*, 956 F.2d 1508, 1519-20 (9th Cir. 1992) ("The existence of a viable, but unexamined alternative renders an environmental impact statement inadequate.").

If BLM rejects an alternative from consideration, it must explain why a particular option is not feasible and was therefore eliminated from further consideration. 40 C.F.R. § 1502.14(a). The courts will scrutinize this explanation to ensure that the reasons given are adequately supported by the record. *See Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 813-15 (9th Cir. 1999); *Idaho Conserv. League*, 956 F.2d at 1522 (while agencies can use criteria to determine which options to fully evaluate, those criteria are subject to judicial review); *Citizens for a Better Henderson*, 768 F.2d at 1057.

Here, BLM too narrowly construed the project purpose and need such that the DEIS did not consider an adequate range of alternatives to the proposed project.

The alternatives analysis is inadequate even with the inclusion of the alternative site configuration and a reduced acreage alternative. Additional feasible alternatives should be considered which would avoid all of the dunes habitat as well as alternatives that would have looked at alternative sites for the Red Bluff substation to avoid impacts to additional resources. In addition a phased alternative should have been included which would allow the portions of the project that have the fewest impacts to move forward while also affording the project proponent time to find and acquire permits for more appropriate sites for one or more additional phases of the project reconfigured on other BLM lands or on previously degraded disturbed lands in this area (for example such as the lands discussed in the North of Desert Center alternative) and also to explore other off-site alternatives.

The document also includes other alternatives that were stated as being "Site Alternatives Evaluated only under CEQA" which includes the proposed site and one off-site alternative – the North of Desert Center alternative. The document eliminated from consideration a distributed renewable energy alternative. The BLM (as well as the CEC) should have also looked alternative siting on previously degraded lands such as nearby farmlands, distributed solar alternatives, and other alternatives that could avoid impacts of the proposed project as well as impacts of the associated transmission lines and substations. In addition, as discussed above, the BLM should have looked at alternatives for construction and operations that would reduce GHG emissions by using alternative technology and/or on site conservation measures and offsets.

The BLM failed to consider any off-site alternative that would significantly reduce the impacts to biological resources including dunes ecosystems, desert tortoise habitat and key movement corridors, golden eagles, and others. Because such alternatives are feasible, on this basis and other the range of alternatives is inadequate. The Center urges the BLM to revise the DEIS to adequately address a range of feasible alternatives and other issues detailed above and then to re-circulate a revised or supplemental DEIS for public comment.

In addition, in order to meet the DOE's purpose and need states that: "The two principal goals of the loan guarantee program are to encourage commercial use in the United States of new or significantly improved energy-related technologies and to achieve substantial environmental benefits. The purpose and need for action by DOE is to comply with their mandate under EPAct by selecting eligible projects that meet the goals of the Act." DEIS at B.2-12. Assuming for the sake of argument alone that these are proper project objectives, the DEIS should have considered alternatives that would provide funding to other types of projects. Such alternatives could include, for example, conservation and efficiency measures that both avoid and reduce energy use within high-energy use load-centers including the Los Angeles area and the Inland Empire.

Alternative measures could include funding community projects for training and implementation of conservation measures such as increased insulation, sealing and caulking, and new windows for older buildings and new or improved technologies for accomplishing these important goals. For example, air conditioning creates the largest demand for energy during peak times and there already exist methods to reduce the energy use from air conditioning but implementation has lagged well behind technology. Conservation and efficiency measures are an excellent and quick way of reducing demand in both the short- and long-term and reduce the

need for additional power sources. In addition, many of the existing conservation and efficiency measures can provide immediate jobs and training in high population areas with significant unemployment (particularly among low skilled workers and youth).

The existence of these and other feasible but unexplored alternatives shows that the BLM's analysis of alternatives in the DEIS is inadequate.

IV. Conclusion

Thank you for your consideration of these comments. In light of the many omissions in the environmental review to date, we urge the BLM to revise and re-circulate the DEIS or prepare a supplemental DEIS before making any decision regarding the proposed plan amendment and right-of-way application. In the event BLM chooses not to revise the DEIS and provide adequate analysis, the BLM should reject the right-of-way application and the plan amendment. Please feel free to contact us if you have any questions about these comments or the documents provided.

Sincerely,

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Bonnie Heeley <bheeley@adamsbroadwell.com>
07/02/2010 10:30 AM

To "CAPSSolarPalen@blm.gov" <CAPSSolarPalen@blm.gov>
cc "Jason W. Holder" <jholder@adamsbroadwell.com>
bcc
Subject FW: CURE's Comments Concerning DEIS for Palen Solar Power Project (1)

Ms. Shaffer:

Yesterday I mistakenly emailed CURE's Comments Concerning the Draft Environmental Impact Statement for Palen Solar Power Project (09-AFC-7) to CAPSSolar**Blythe**@blm.gov rather than CAPSSolar**Palen**@blm.gov. I apologize for this error and hope that it has not caused your office any inconvenience. I am forwarding the emails. The hardcopy was sent via overnight mail yesterday.

We also note that on the Energy Commission's Proof of Service List CAPSSolar**Blythe**@blm.gov is shown as the email address for the Palen matter. We are not sure if this is intentional or an error.

See below for the Comments; exhibits to follow.

Bonnie Heeley
Adams Broadwell Joseph & Cardozo
(650) 589-1660
bheeley@adamsbroadwell.com

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From: Bonnie Heeley
Sent: Thursday, July 01, 2010 5:19 PM
To: 'CAPSSolarBlythe@blm.gov'
Subject: CURE's Comments Concerning DEIS for Palen Solar Power Project (1)

Ms Shaffer:

I will be sending CURE's Comments and Attachments in several emails. The original will follow via overnight mail.

Bonnie Heeley
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CURE Comments (2).pdf

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July 1, 2010

VIA E-MAIL [ORIGINAL TO FOLLOW VIA OVERNIGHT MAIL]

Allison Shaffer, Project Manager
Palm Springs South Coast Field Office
Bureau of Land Management
1201 Bird Center Drive
Palm Springs, CA 92262
Email: CAPSSolarPalen@blm.gov

Re: CURE's Comments Concerning Draft Environmental Impact Statement for Palen Solar Power Project (09-AFC-7)

Dear Ms. Shaffer:

On behalf of California Unions for Reliable Energy ("CURE"), please accept these comments on the Draft Environmental Impact Statement ("DEIS"), prepared pursuant to the National Environmental Policy Act ("NEPA"),[1] for Palen Solar I, LLC's ("Applicant") proposed 500- MW Palen Solar Power Project (the "Project," "Proposed Action," or "PSPP"). The Project requires an amendment to the California Desert Conservation Area ("CDCA") Plan, a right-of-way ("ROW") from the Bureau of Land Management ("BLM") to construct, operate and decommission the facility, California Energy Commission ("CEC") certification to construct and operate the facility, a cultural resources Programmatic Agreement ("PA"), a streambed alteration agreement, certification of waste discharge requirements and incidental take permits, among other agency actions.

As explained more fully below, the DEIS does not comply with the requirements of NEPA, or the California Environmental Quality Act ("CEQA")[2] for required discretionary approvals by California State agencies. Therefore, BLM may

[1] 42 U.S.C. §§ 4321 et seq. (2010).

[2] Public Resources Code, § 21000 *et seq.*

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not approve the CDCA Plan amendment or ROW until an adequate DEIS is prepared and circulated for public review and comment.

CURE is a coalition of labor unions whose members construct, operate, and maintain power plants throughout California. CURE encourages sustainable development of California's energy and natural resources. Environmental degradation jeopardizes future growth and jobs by causing construction moratoriums, depleting limited air pollutant emissions offsets, consuming limited fresh water resources, and imposing other stresses on the environmental carrying capacity of the state. This in turn reduces future employment opportunities for CURE's members. Additionally, union members live and work in the communities and regions that suffer the impacts of projects that are detrimental to human health and the environment. CURE therefore has a direct interest in enforcing environmental laws to minimize the adverse impacts of projects that would otherwise degrade the environment. Finally, CURE members are concerned about projects that risk serious environmental harm without providing countervailing economic benefits. The NEPA process allows for a balanced consideration of a project's socioeconomic and environmental impacts, and it is in this spirit that we offer these comments.

The BLM and the CEC have prepared a joint Staff Assessment/Draft Environmental Impact Statement for the Project to satisfy the requirements of NEPA and CEQA. We have been informed that the BLM's NEPA document and the CEC's CEQA functional equivalent document are no longer proceeding along a joint track towards completion. These comments are directed toward the BLM's Draft Environmental Impact Statement ("DEIS") document, and the extent to which the analyses comply with the requirements of NEPA.

We have reviewed the DEIS and its technical appendices in conjunction with other studies and materials developed as part of the concurrent review of the Project by BLM and CEC. The following technical consultants assisted us:

- Jim Cornett, M.S. (biological resources impacts).
- Matt Hagemann, P.G. (hazards and hazardous materials impacts)

Their comments and qualifications are appended hereto as Attachment A ("Cornett Comments") and Attachment B ("Hagemann Comments"). **We request that you consider and respond to these consultants' comments separately and individually.**

I. INTRODUCTION

California is experiencing an unprecedented wave of new alternative energy power plant development throughout its territory. As of January 2010, 244 renewable projects have been proposed in California.[3] 10 of these proposed projects would be located within 15 miles of the Project, and an additional 12 future projects would be located further away along the I-10 corridor. The DEIS acknowledges that 125 renewable energy projects would be "scattered throughout the California Desert Conservation Area" managed by the BLM.[4] While these plants will employ relatively clean solar thermal, solar photovoltaic, or wind technology and each would presumably be equipped with modern pollution control technologies, each one will unavoidably tax the state's limited air, water, land, and biological resources to a potentially significant cumulative extent. The final toll taken by this historic energy boom on California's environment, public health, and natural resource base may not be known for several years or longer, but currently available and substantial evidence shows that the effects will be severe. The public lands managed by the BLM will be similarly taxed. The DEIS for this Project is wholly inadequate, because it fails to adequately consider, among other impacts, the cumulative effects in the region that will cause environmental degradation.

This Project, as well as numerous other pending renewable energy projects, seeks funding through the American Recovery and Reinvestment Act of 2009. As recently stated in a proclamation by President Obama, the ARRA "reaffirmed NEPA's role in protecting public health, safety, and environmental quality, and in ensuring transparency, accountability, and public involvement in our Government."[5]

Under these unprecedented circumstances, it is even more imperative that this environmental document identify and analyze all foreseeable direct, indirect, and cumulative project impacts with the utmost degree of accuracy, care and detail. It is equally if not more imperative that any and all reasonable alternatives that are less environmentally damaging be presented and discussed as thoroughly as

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[3] DEIS, p. B.3-1; see also *Id.*, Cumulative Impacts Tables 1A and 1B; see also Press Release, Office of the Governor, Governor Schwarzenegger Announces 244 Proposed Renewable Energy Projects Throughout the State (Dec. 29, 2009), available at http://gov.ca.gov/press-release/14092/.

[4] *Id.* at p. C.12-33.

[5] Presidential Proclamation regarding the 40th Anniversary of the National Environmental Policy Act, December 31, 2009.

possible, together with any and all feasible mitigation measures. The strictures of NEPA and the maxims of sound public policy and informed environmental planning require nothing less. Based on these concerns, CURE and its members have a strong interest in ensuring that this Project complies with all applicable federal, State and local laws and regulations.

With that said, we must conclude with disappointment that this particular DEIS, while evidently drafted by skilled and conscientious experts, is so rife with omissions, incomplete analyses, and obsolete information regarding a changing Project that it simply does not even come close to complying with NEPA standards. As these comments will demonstrate, the DEIS is fatally deficient and must be substantially revised and recirculated for further public review and comment before it may be finalized.[6]

As explained at length below, the Project will generate a multitude of impacts in a number of impact areas, including: land use, air quality, public health, water supply, water quality, biological resources, and cultural resources. The DEIS either mischaracterizes, misanalyzes, underestimates, or fails to identify many of these impacts. The DEIS, for example, fails entirely to identify the impacts that will be caused by the proposed 8-12 mile-long transmission line[7] to the planned Red Bluff substation. Furthermore, the DEIS fails to mention or discuss a number of reasonable and perfectly feasible measures that could avoid or mitigate impacts to levels of insignificance with relative ease and with minimal expense. At the same time, many of the mitigation measures described in the DEIS will not in fact mitigate impacts to the extent claimed and in some instances will generate additional impacts that are not evaluated. For example, the DEIS does not describe the locations of available compensation habitat and does not address the impacts that may be caused by habitat enhancement. Finally, the DEIS impermissibly truncates the scope of alternatives discussed, and consequently fails to consider reasonable feasible alternative approaches to the project footprint, floodwater drainage facilities, and wildlife movement that would avoid altogether several of the project's most serious impacts. The only justification for eliminating these

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[6] 40 C.F.R. § 1502.9(a) (2009) ["If a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft of the appropriate portion"].

[7] The DEIS and other documents prepared by the Applicant inconsistently describes the length of the transmission line. *Compare Id.* at p. D.5-5 [describing 8-mile long transmission line], B.1-11 [describing 10-mile distance to Red Bluff substation] *with* Updated Plan of Development, dated July 20, 2009, p. 35 [describing 12-mile long gen tie line].

alternatives appears to be that the Applicant believes they are too costly. This simply flies in the face of both the letter and spirit of NEPA.

Below, after a brief summary of applicable legal requirements governing EIS preparation, we present our general comments and our more specific comments organized according to resource category. The general comments address analytical flaws that pervade the DEIS, while the specific comments address errors in individual analyses.

II. THE DEIS FAILS TO SATISFY NEPA'S PURPOSE AND GOALS

NEPA requires that agencies take a "hard look" at the environmental consequences of a proposed action.[8] A hard look is defined as a "reasoned analysis containing quantitative or detailed qualitative information."[9] The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of the impact caused by the proposed action and the alternatives.[10] An EIS must provide a "full and fair discussion of significant environmental impacts and shall inform the decision-makers and the public of the reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment."[11] "General statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided."[12] "[L]ack of knowledge does not excuse the preparation of an EIS; rather it requires [the agency] to do the necessary work to obtain it."[13]

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[8] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989); *Dubois v. U.S. Dep't of Agric.*, 102 F.3d 1273, 1284 (1st. Cir. 1996); see also *South Fork Band Council Of Western Shoshone Of Nevada v. U.S. Dept. of Interior*, 588 F.3d 718, 727 (9th Cir. 2009) ["NEPA requires that a hard look be taken, if possible, *before* the environmentally harmful actions are put into effect"].

[9] BLM, NEPA HANDBOOK, P. 55 (Jan. 2008) ("NEPA Handbook"), available at: http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_handbook.Par.24487.File.dat/h1790-1-2008-1.pdf.

[10] NEPA Handbook, p. 55; *see also* 40 C.F.R. § 1502.1 (2009).

[11] 40 CFR 1502.1.

[12] *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1380 (9th Cir. 1998).

[13] *National Parks & Conservation Association v. Babbitt*, 241 F.3d 722, 733 (9th Cir.2001), *abrogated on other grounds by Monsanto Co. v. Geertson Seed Farms*, 2010 WL 2471057, 12 (U.S.) (U.S., 2010) [An injunction should issue only if the traditional four-factor test is satisfied].

NEPA review makes information on the environmental consequences of a proposed action available to the public, which may then offer its insight to assist the agency's decision-making.[14] An EIS is more than just a disclosure device, however, it is an "action-forcing device" which ensures that NEPA's requirements are infused into the ongoing programs and actions of the federal government.[15] An EIS must provide a full and fair discussion of every significant impact, as well as inform decision-makers and the public of reasonable alternatives which would avoid or minimize adverse impacts.[16] The impacts analysis must include a discussion of the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented.[17] The discussion of impacts must include both "direct and indirect effects (secondary impacts) of a proposed project."[18] The agency need not speculate about all conceivable impacts, but it must evaluate the reasonably foreseeable significant effects of the proposed action.[19] In this context, reasonable foreseeability means that "the impact is sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision."[20]

In addition to a scientifically defensible analysis of project impacts, an EIS must also include a discussion of "appropriate mitigation measures not already included in the proposed action or alternatives."[21] An EIS is not complete unless it contains "a reasonably complete discussion of possible mitigation measures."[22] Mitigation includes "avoiding the impact altogether by not taking a certain action or parts of an action."[23] It also includes "minimizing impacts by limiting the degree or magnitude of the action and its implementation."[24] The mandate to thoroughly

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[14] *See Robertson*, 490 U.S. at 350; *Dubois*, 102 F.3d at 1284.

[15] 40 C.F.R. § 1502.1.

[16] *Id.*

[17] *Id.* at § 1502.16.

[18] *Id.* at § 1502.16(b); *see also Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir. 1992).

[19] *Sierra Club v. Marsh*, 976 F.2d at 767.

[20] *Ibid; see also Dubois v. Dept. of Agriculture*, 102 F.3d 1273, 1286 (1st Cir. 1996).

[21] 40 C.F.R. § 1502.14(f).

[22] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989).

[23] 40 C.F.R. § 1508.20(a).

[24] *Id.* at subd. (b).

evaluate all feasible mitigation measures is critical to NEPA's purposes.[25] Hence, a "perfunctory description" or a "mere listing" of possible mitigation measures is not adequate to satisfy NEPA's requirements.[26] That individual harms are somewhat uncertain due limited understanding of the Project characteristics and baseline conditions does not relieve BLM of the responsibility under NEPA to discuss mitigation of reasonably likely impacts at the outset.[27]

An EIS must "[r]igorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated."[28] This requirement is discussed in greater detail in a subsequent section of this letter.

Finally, an EIS should be "concise, clear, to the point, and supported by evidence that the agency has made the necessary environmental analyses."[29] A concise and clear EIS that is supported by evidence ensures that federal agencies are informed of environmental consequences ***before*** making decisions and that the information is available to the public.[30] As the Council on Environmental Quality ("CEQ") explains in its regulations, "[e]nvironmental impact statements shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made."[31]

The DEIS for the proposed Project fails to comply with these basic requirements. First, the lack of complete, accurate and consistent information in the DEIS precludes an informed comparison of the alternatives and an analysis of the Proposed Action. Second, the BLM failed to take a hard look at all of the Project's impacts. Finally, the BLM impermissibly limited its alternatives analysis by relying on an arbitrarily narrow purpose and need statement. For these reasons, the DEIS precludes a meaningful analysis of the Project, and the BLM must revise

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[25] *Id.* at § 1500.1(c).)

[26] *Neighbors of Cuddy Mountain*, 137 F.3d at 1380; *Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1151 (9th Cir. 1998).

[27] *See South Fork Band Council of Western Shoshone of Nevada*, 588 F.3d at 727, citing *National Parks*, 241 F.3d at 733.

[28] 40 C.F.R. § 1502.14(a).

[29] *Id.*

[30] *Inland Empire Pub. Lands Council v. U.S. Forest Serv.*, 88 F.3d 754, 758 (9th Cir. 1996).

[31] 40 C.F.R. § 1502.2(g).

the DEIS and recirculate the revised DEIS for public review and comment before making a decision.

III. GENERAL COMMENTS

A. Information in the DEIS Concerning the Size and Characteristics of the Proposed Action is Incomplete and Inaccurate.

A complete and consistent description of the Proposed Action and the affected environment is necessary for the public and decision makers to understand the effects of the proposed action and its alternatives.[32] A clear description results in more focused and meaningful public input and BLM participation, a more complete identification of issues, development of reasonable alternatives, sound analysis and interpretation of effects, focused analysis and a sound and supportable decision.[33]

It follows that information in the DEIS that is incomplete, inconsistent and/or inaccurate will skew the environmental consequences analysis and prevent informed public input. Courts have held that "[w]here the information in the initial EIS was so incomplete or misleading that the decisionmaker and the public could not make an informed comparison of the alternatives, revision of an EIS [was] necessary to provide a reasonable, good faith, and objective presentation of the subjects required by NEPA."[34]

The DEIS contains incomplete, inconsistent and inaccurate information that precludes a full understanding of the Proposed Action, a meaningful analysis of all Project impacts, and prevents an informed comparison of the alternatives. This violates the basic requirements of NEPA.

The importance of an accurate and complete description of the Project and its environmental impacts is especially critical here, given the immense scale of the Project. At 5,200 acres (8.125 square miles), the ROW for this single power plant project is larger than many cities in California including Monterey Park, Alhambra,

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[32] *See* 40 C.F.R. § 1502.15; *see also State of Cal. v. Block*, 690 F.2d 753. 761 (9th Cir. 1982) [starting point for analysis of whether a "critical decision" with respect to site development is "to describe accurately the 'federal action' being taken"].

[33] NEPA Handbook pp. 42-45.

[34] *Natural Res. Def. Council v. U.S. Forest Serv.*, 421 F.3d 797, 811 (9th Cir. 2005), citing *Animal Def. Council v. Hodel*, 840 F.2d 1432, 1439 (9th Cir. 1988).

La Habra, and Daly City.[35] A map of the Project lay-out demonstrates that nearly the entire area will be disturbed by roads, power units, buildings, underground utilities and support structures. This will dramatically impact every aspect of the ecosystem on the Project site and surrounding the Project area.

The DEIS inconsistently describes the number of acres that will be disturbed by the proposed Palen Solar Power Project ("PSPP" or "Project"): the figures range from 2,740 to 3,899 disturbed acres.[36] These inconsistent figures appear to reflect the varying ways in which the total "Project disturbance" area was considered (i.e., Project footprint, solar fields, transmission line, etc.), but this is not clear from the various DEIS references. The Application for Certification ("AFC") for the Project at the CEC similarly provided inconsistent figures for the Project disturbance area and facility footprint.[37]

Significantly, none of the inconsistently reported amounts of disturbed acreage took into account the proposed transmission line to the planned Red Bluff substation and the associated road.[38] Thus, as discussed in the following section, the DEIS failed to consider *any* of the impacts associated with this transmission line route.

The introduction to Applicant's responses to Energy Commission staff's Data Requests ("DR" or "DRs") regarding biological resources attempts to clarify the Project disturbance area.[39] This explanation only induces further confusion. The introduction recites the AFC Disturbance Area as 3,874 acres and the revised Project Disturbance Area as 3,945.8 acres. These figures suggest that at least some of the DEIS analyses failed to consider the impacts of the Project as a whole. Moreover, the revised Project Disturbance Area reported in the introduction to DR responses took into account the Transmission Line Disturbance Area for the

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[35] *See* 2000 Census: US Municipalities Over 50,000: Ranked by 2000 Population, available at: http://www.demographia.com/db-uscity98.htm.

[36] *See*, e.g., DEIS, Proposed Project, pp. B.1-1 [2,970 acres disturbed], B.2-16 [2,740 occupied by Units 1 and 2], Biological Resources, C.2-1 [3,899 acres disturbed], Health and Safety, C.5-21 [2,740 acres disturbed], C.9-3 [2,970 acres disturbed], C.12-14 [4.5 square miles].

[37] *See* AFC, § 2.0, Fact Sheet [2,970 acres disturbed]; *see also id.* at pp. 5.3-9 [3,871 acres disturbed and 2,970-acre facility footprint], 5.4-1 [3,871 acres disturbed].

[38] *See Id.* at p. C.6-1.

[39] *See* BIO-1.

formerly proposed transmission line to the south of the Project site, not the current much longer transmission line to the west of the Project site.[40]

The estimated amount of cut and fill for the Project is also inconsistent. In the Streambed Alteration Notification submitted to the California Department of Fish and Game ("CDFG") and in the DEIS, only 4.5 million cubic yards of earth movement is reported.[41] In contrast, the response to DR-S&W-181 states that 16.3 million cubic yards will be moved. Thus, the DEIS may have underreported the amount of earth movement by a factor of almost four.

As discussed further below, the DEIS also failed to accurately identify all Project characteristics. Project characteristics not considered in the DEIS, include:

- The transmission line to the Red Bluff substation and associated access roads and spur roads,
- Redesigned drainage facilities for the Project site,
- Newly proposed evaporation ponds for wastewater, and
- A new on-site concrete batch plant.[42]

The BLM must revise the DEIS to provide a reasonable, consistent, good faith and objective presentation of the Proposed Action characteristics, the qualities of the affected environment, and the environmental consequences of the Proposed Action and its alternatives.

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[40] *Ibid.*

[41] *See* Attachment C, Notification of Lake or Streambed Alteration, § 10, Project Description [describing preliminary site grading plan]; *see also* DEIS, p. C.9-35.

[42] *See* Attachment D, document entitled "Environmental Evaluation of Project Updates," submitted to CEC as Attachment 2 to Applicant's Initial Comments on SA/DEIS.

B. The DEIS Impermissibly Segments Environmental Review by Failing to Consider Project Impacts Associated with the Proposed Transmission Line, Redesigned Drainage Facilities, Evaporation Ponds, and On-site Concrete Batch Plant.

1. *Scoping Under NEPA Requires Evaluation of All Impacts Associated with a "Single Course of Action."*

"Major Federal actions" include not only those actions undertaken by federal agencies, but also "actions with effects that may be major and which are potentially subject to Federal control and responsibility."[43] This includes "projects and programs entirely or *partly* financed, assisted, conducted, *regulated, or approved by* federal agencies . . . ."[44]

When evaluating a project's environmental impacts under NEPA, a federal agency must consider the entire project. "Proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement."[45] This principle was established early in the development of NEPA law, and applies even when the federal involvement is limited to approving a relatively small aspect of the project.[46]

For example, in *Cady*, the U.S. Geological Survey approved a mining plan to be undertaken by a private mining company.[47] The mining plan covered 770 acres over 5 years; but the mining company had leased over 30,000 acres for a 20-year period. The court held that the agency was required to prepare an EIS for the whole project.[48]

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[43] 40 C.F.R. § 1508.18.

[44] *Id.* at § 1508.18, subd. (a) (emphasis added).

[45] *Id.* at § 1502.4, subd. (a).

[46] *E.g., Maryland Conservation Council, Inc. v. Gilchrist*, 808 F.2d 1039, 1042 (4th Cir. 1986); *Sierra Club v. Hodel*, 544 F.2d 1036, 1040-41 (9th Cir. 1976); *Cady v. Morton*, 527 F.2d 786, 795 (9th Cir. 1975).

[47] 527 F.2d at 795.

[48] *Ibid.* An agency's duty to evaluate all environmental impacts associated with a privately undertaken project may even be triggered by its duty to protect lands adjacent to the project area. *Sierra Club* dealt with a County's plan to improve a road within an existing BLM right-of-way. (848 F.2d at 1073.) Portions of the road were adjacent to wilderness study areas. The court held that

The DEIS must address closely related "connected actions," as well as similar actions and cumulative actions.[49] Under NEPA, actions are connected if they:

(i) Automatically trigger other actions which may require environmental impact statements.
(ii) Cannot or will not proceed unless other actions are taken previously or simultaneously.
(iii) Are interdependent parts of a larger action and depend on the larger action for their justification.[50]

The BLM's Processing Guidance document, which addresses general requirements for processing solar power projects in the California Desert District, is consistent with the requirement that transmission lines must be treated as part of the Proposed Action.[51] The guidance documents states that the transmission line and associated infrastructure must be analyzed in the DEIS, to the extent information concerning the transmission line is available at the time the analysis is prepared.[52] Further, the BLM NEPA handbook instructs BLM to evaluate whether studying connected actions in a single NEPA document would improve the quality of analysis and efficiency of the NEPA process, and provide a stronger basis for decision-making.[53]

The DEIS only covers the Project's footprint and a formerly proposed transmission line ROW and substation to the south of the Project site.[54] While some chapters of the DEIS mention the proposed route to the Red Bluff

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BLM's statutory duty to protect wilderness study areas from unnecessary degradation "injects an element of federal control for the required action that elevates this situation to one of major federal action." (*Id.* at 1090-91.)

[49] 40 CFR §1508.25(a).

[50] 40 CFR §1508.25(a)(1).

[51] Processing Guidance, pp. 2, 6.

[52] References in the DEIS and the July 2009 Updated Plan of Development to the Red Bluff substation indicate information regarding this transmission line route was available at the time the DEIS was prepared. *See, e.g.* DEIS, D.5-5 [describing 8-mile long transmission line], B.1-11 [describing 10-mile distance to Red Bluff substation]; *see also* Updated Plan of Development, dated July 20, 2009, p. 35 [describing 12-mile gen tie line].

[53] NEPA Handbook, p. 45.

[54] *See, e.g.*, DEIS, C.2-13 [Biological Resources chapter description of proposed project, describing original 1.2-mile transmission line corridor to the south of Project site].

substation,[55] the DEIS does not address the impacts associated with transmission lines now under consideration. The DEIS also fails to consider several new Project components that the Applicant has proposed since release of the DEIS.[56] Failure to consider all aspects of the proposed action violates NEPA because it improperly segments the Project.

The transmission line to the Red Bluff substation is an integral component of the Project. The Project requires the transmission line in order to deliver the power it will generate to Southern California Edison ("SCE") and to the grid.[57] As such, the transmission line is a necessary conduit for the Project's electricity, and is merely one aspect of the larger Project. By authorizing the transmission line ROW, BLM would enable the Project to proceed. Similarly, the concrete batch plant is necessary for Project construction, and the evaporation ponds are necessary for Project operations. Thus, BLM must also consider these Project characteristics during its environmental review under NEPA, and must provide an opportunity for the public to comment on revisions to the proposed Project and the associated impacts.

> NEPA requires responsible opposing viewpoints to be included in the final EIS. [Citations.] This reflects the paramount Congressional desire to internalize opposing viewpoints into the decision-making process to ensure that an agency is cognizant of all the environmental trade-offs that are implicit in a decision. [Citations.] To effectuate this aim, NEPA requires not merely public notice, but public participation in the evaluation of the environmental consequences of a major federal action. [Citation.] ¶ *Failure to disclose a Proposed Action before the issuance of a final EIS can defeat this aim, at least when the Proposed Action differs radically from the alternatives mentioned in a draft EIS.*[58]

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[55] *See* DEIS, p. B.1-11 [describing 10-mile distance to Red Bluff substation]; *see also Id.* at pp. C.11-1, C.11-4; *see also* Updated Plan of Development, dated July 20, 2009, p. 35 [describing 12-mile gen tie line]; *see also* Applicant's Responses to CEC Data Requests Set 1, Vol. A, Biological Resources, (January 6, 2010), Figures: DR-BIO-60-2, DR-BIO-63-1, DR-BIO-64-1, DR-BIO-91, DR-BIO-98-2, DR-BIO-98-3, DR-BIO-98-4, DR-BIO-101.

[56] *See generally* Attachment D, Environmental Evaluation of Project Updates.

[57] DEIS, p. D.5-1.

[58] *State of Cal. v. Block*, 690 F.2d 753, 771 (9th Cir. 1999), citations omitted and italics added.

Further, NEPA requires preparation of a supplement to a draft EIS when "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts."[59] A supplemental EIS is required if a new proposal "will have a significant impact on the environment in a manner not previously evaluated and considered."[60]

The change in the transmission line route from the route analyzed in the DEIS (from the Project site to a nearby proposed Substation to the south) to a proposed substation that is substantially further away is one example of new information that necessitates recirculation of a supplemental EIS. The newly proposed transmission line route and its associated roads will cross numerous desert washes and will traverse a substantially longer expanse of undisturbed desert. This aspect of the Project will have impacts to biological resources and to drainage features within the transmission line ROW.

Here, it is undisputed that the proposed Project cannot be constructed or operated without a transmission line connecting the Project to the electricity grid, a concrete batch plant, evaporation ponds, and redesigned drainage infrastructure. Because these Project characteristics are necessary parts of the Project, they are connected actions with potentially significant impacts that must be analyzed in a revised DEIS or a supplement to the DEIS that is circulated for public review and comment.

2. *The DEIS Failed to Analyze Project Impacts Associated with the New Transmission Line Route, the Evaporation Ponds, the Concrete Batch Plant, and Redesigned Drainage Facilities.*

NEPA "promotes its sweeping commitment" to environmental integrity "by focusing Government and public attention on the environmental effects of proposed agency action. [citation] By so focusing agency attention, *NEPA ensures that the*

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[59] 40 C.F.R. § 1502.9 [agencies shall "prepare supplements to either draft or final environmental impact statements if: (i) the agency makes substantial changes in the proposed action that are relevant to environmental concerns; or (ii) there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts"].

[60] *S. Trenton Residents Against 29 v. Fed. Highway Admin.* (1999) 176 F.3d 658, 663; *see also* NEPA Handbook, pp. 29-30.

agency will not act on incomplete information, only to regret its decision after it is too late to correct."[61]

With respect to this DEIS, the BLM has not taken the required "hard look" at impacts associated with the transmission upgrades it has already identified as necessary. Nor has the BLM analyzed the impacts associated with other newly proposed Project features. Potentially significant impacts not identified or evaluated in the DEIS include the following:

- Air quality – Equipment used for construction of the transmission lines and associated access and spur roads would emit nitrogen oxides ("NO_x"), volatile organic compounds ("VOC"), particulate matter ("PM_{10}" and "$PM_{2.5}$"), carbon monoxide ("CO") and carbon dioxide ("CO_2"). The Project area is classified non-attainment for ozone and PM_{10}.[62] Operation of the concrete batch plant during Project construction will also produce emissions that were not considered in the DEIS.

- Water Quality – An access road and spur roads will be built along the transmission line route. These roads will impact natural drainage patterns in numerous washes flowing north from the Chuckwalla Mountains to the south. The redesigned drainage facilities will also cause unaddressed impacts to water quality.

- Cultural resources – Construction of the new transmission line has the potential to impact recorded archaeological and historical sites.[63]

- Biological resources – The area that will be impacted by the transmission line supports a variety of biological resources, including threatened and endangered species. Transmission line construction and operation would temporarily and permanently disturb habitat supporting these species.

We note that this is not a complete list of the potentially significant impacts associated with the transmission line to the planned Red Bluff substation and other

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[61] *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 371, 109 S.Ct. 1851, 104 L.Ed.2d 377 (1989), italics added.

[62] DEIS, p. C.1-10.

[63] Such impacts trigger BLM's duties under the National Historic Preservation Act, 16 U.S.C. § 470 *et seq*. *See The Extent to Which the National Historic Preservation Act Requires Cultural Resources to be Identified and Considered in the Grant of a Federal Right of Way*, 87 Interior Dec. 27 (1979).

newly proposed Project features. The CEC's licensing process and the BLM's permitting process are underway and issues are still being developed. The EIS should identify, evaluate and mitigate, where feasible, all of the potentially significant impacts associated with all Project features, including those identified above.

C. The DEIS Fails to Adequately Analyze the Project's Contribution to Several Acknowledged Categories of Significant Cumulative Impacts.

A proper consideration of a Project's cumulative impacts requires "'some quantified or detailed information; ... [g]eneral statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided.'"[64] The analysis "must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past, present, and future projects."[65]

The DEIS Fails to consider the Project's contribution to adverse cumulative impacts to wildlife connectivity and other cumulative impacts that will be caused by the influx of immense solar facilities in the CDCA Plan area. The Project's contribution must be considered together with nearby proposed large-scale solar projects, including but not limited to:

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[64] *Ocean Advocates v. U.S. Army Corps of Eng'rs*, 361 F.3d 1108, 1128 (9th Cir. 2004), quoting *Neighbors of Cuddy Mountain*, 137 F.3d at 1379-80.

[65] *Id.*, internal quotations and citations omitted.

Table 1: Proposed Large Scale Solar Projects in the Vicinity of PSPP

Project Name/ Serial No.	Applicant	Type	BLM Acreage[66]	CEC Acreage[67]	DEIS Acreage[68]
Chuckwalla Solar 1, CACA 48808	Chuckwalla Solar, LLC	Photo-voltaic ("PV")	4,099	Not Available	ROW: 4,091 (or 4,083)
Blythe, CACA 48811	Solar Millennium	Solar Thermal ("ST")	11,056	ROW: 9,400 Disturbed: 7,030	ROW: 7,239 (or 9,400)
Genesis Ford Dry Lake, CACA 48880	NextEra Energy/ Florida Power & Light ("FPL")	ST	18,083	ROW: 4,640 Disturbed: 1,800	ROW: 1,768
Genesis McCoy, CACA 48728	FPL	ST	20,608	Not Available	Not Available*
CACA 49097	Bullfrog Green Energy, LLC	ST	6,634	Not Available	Not Available*
Desert Sunlight, CACA 48649	First Solar, Inc.	PV	14,905	Not Available	ROW: 5,119 (or 5,000-6,000)
Desert Quartzite, CACA 49397	First Solar, Inc.	PV	7,548	Not Available	ROW: 7,530 (or 7,724)

[66] *See* Attachment E, First-In-Line Solar Applications, dated December 21, 2009, available at http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/pa/energy/solar.Par.45875.File.dat/Renew_Energy_2_09_solar.pdf (as of June 11, 2010).

[67] *See* links to CEC descriptions of pending solar projects, available at: http://www.energy.ca.gov/sitingcases/all_projects.html#review (as of June 11, 2010). Some acreage figures were taken from the environmental review documents prepared for the respective project, when available.

[68] *See* DEIS, Biological Resources Table 9; *see also id.* at Cumulative Scenario Table 2 [figures in parenthesis included where DEIS inconsistently reports the size of some pending projects].

Project Name/ Serial No.	Applicant	Type	BLM Acreage[66]	CEC Acreage[67]	DEIS Acreage[68]
CACA 49488	EnXco Development, Inc. ("EnXco")	ST	1,327	Not Available	Not Available*
CACA 49489	EnXco	ST	16,088	Not Available	Not Available*
CACA 49490	EnXco	ST	20,608	Not Available	Not Available*
CACA 49491	EnXco	ST	1,327	Not Available	Not Available*
Big Maria Vista, CACA 49702	Bullfrog Green Energy, LLC	ST	22,717	Not Available	ROW: 22,663 (or 2,864)
CACA 50379	Lightsource Renewables, LLC	ST	2,446	Not Available	Not Available*
		Totals:	**147,446**		

* The DEIS apparently did not consider these projects in the cumulative impacts analyses.

Together, these nearby pending projects would occupy almost **150,000 acres** (the amount of disturbed acres has been inconsistently reported by the CEC and BLM), primarily within desert valleys where groundwater and vegetation generally are more plentiful than in upland areas.[69]

D. <u>The Baseline for Analyzing Environmental Impacts is Improper.</u>

The BLM must analyze the Project's impacts on the affected environment.[70] This process begins by describing "the present condition of the affected resources within the identified geographic scope" and by providing "a baseline for cumulative effects analysis."[71]

Once a project begins, the "pre-project environment" becomes a thing of the past, thereby making evaluation of the project's effect on pre-project resources

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[69] *See* Attachment F, BLM Map: Renewable Energy Projects and Utility Corridors, Projects as of May 21, 2010.

[70] NEPA Handbook, p. 53.

[71] *Ibid.*

impossible.[72] Without establishing the baseline conditions which exist in the vicinity of the proposed Project before it is built, there is simply no way to determine what effect the proposed large-scale solar facility will have on the environment and, consequently, no way to comply with NEPA.[73]

An accurate description of the affected environment is an essential prerequisite for an adequate analysis of Project impacts. For example, information on the type(s) and level(s) of habitat disturbance in the Project area is necessary to make inferences about the presence, abundance, and distribution of the special-status species that may be impacted by the Project. Here, however, baseline information was collected after release of the DEIS. The Spring 2010 surveys were conducted in part to identify the environmental baseline information for the transmission line corridor for the Project, a portion of the Project that was not adequately addressed in the DEIS.[74] BLM staff apparently recognized that the transmission line for the Project and its associated access road and spur roads are parts of the Project that must be analyzed in the RSA.[75] Numerous wildlife and plant species with special-status listing were identified as present in the Project study area and the proposed transmission line alignments or have the potential to occur in these areas.[76] These include desert tortoise ("DT"), Mojave fringe-toed lizard ("MFTL"), Western burrowing owl ("WBO"), the golden eagle, and Coachella Valley milk-vetch. Therefore, information regarding the likelihood of their occurrence along the transmission line corridor is relevant to the BLM's basic assessment of the "affected environment."

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[72] *Half Moon Bay Fishermans' Marketing Ass'n v. Carlucci* 857 F.2d 505, 510 (9th Cir. 1988), citing *LaFlamme v. FERC,* 842 F.2d 1063, 1071 (9th Cir.1988)

[73] *Ibid.*

[74] *See, e.g.*, DEIS, p. C.2-13 [describing transmission line as extending 1.2 miles to the south of the Project site, rather than extending approximately 10 miles to the west of the site]; see also *id.* at C.9-35 [describing minor excavation required for transmission line, but omitting discussion of excavation required for access and spur roads]; *see also* Attachment G, Survey Approach and Methodologies for the Solar Millennium Parabolic Trough Palen Solar Power Project, April 10, 2010 ("2010 Survey Protocol") [acknowledging need for surveying along westward transmission line corridor].

[75] *See, e.g.*, DEIS, pp. C.11-1, C.11-4 [chapter regarding transmission line safety acknowledges need to analyze impacts associated with transmission line and correctly identifies transmission line route].

[76] *See* DEIS, pp. C.2-27 – C.2-60; *see also* Attachment G, 2010 Survey Protocol, pp. 1-14; *see also* Attachment H, Letter regarding Preliminary Spring 2010 Survey Results for Desert Tortoise, Rare Plants and Jurisdictional Waters, dated May 7, 2010 ("Preliminary Spring 2010 Survey Results").

The transmission line corridor will be approximately 8-12 miles long.[77] The DEIS recognized that the transmission line route had changed from the route identified in the AFC and that additional information and analysis would be required in order to properly address the impacts associated with developing the transmission line.[78] The Applicant also evidently recognized that the description of the environmental baseline and the analysis of Project impacts would have to be modified in a Revised Staff Assessment, after conducting surveys along the new transmission line corridor.[79]

According to the survey protocol provided by the Applicant, the 2010 surveys were only conducted in Project disturbance and buffer areas that were not surveyed in 2009.[80] As a result, the Spring 2010 surveys did not provide a thorough or robust sampling and may not have yielded a representative capture of the species present within the Project disturbance area, along the transmission line route and in the buffer areas.

The DEIS must be revised to accurately describe the affected environment.

E. <u>The DEIS Fails to Adequately Address the Irreversible Commitment of Resources Associated with the Project.</u>

The impacts analysis must include a discussion of the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented.[81] Here, the Project lifespan is projected to be 30 years. While the DEIS purports to

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[77] Documents submitted to and prepared by the CEC and BLM inconsistently describe the length of the transmission line. *See*, e.g., SA/DEIS, pp. B.1-11 [describing 10-mile distance to substation], D. 5-5 [describing 8-mile gen tie line]; *see also* Updated Plan of Development, dated July 20, 2009, p. 35 [describing 12-mile gen tie line].

[78] *See* DEIS, pp. B.1-11, C.2-13, C.11-1.

[79] *See* PSI's Initial Comments on SA/DEIS, dated May 4, 2010, p. 2 ["The required biological resources and cultural resources surveys for [the selected gen-tie] route are underway and results will be reported when they are available later this spring"].

[80] *See* Attachment G, 2010 Survey Protocol, pp. 2-6, 10.

[81] 40 C.F.R. § 1502.16.

analyze Project decommissioning, it does not adequately address the long-term ramifications of disturbing the landscape to build and operate this Project.[82] This type of problem solving must occur now, before the BLM approves a proposed Project that will disturb thousands of acres of habitat and the wildlife that currently occupy this habitat.

F. Under NEPA, the DEIS Must Integrate All Applicable Federal and State Environmental Laws.

If a Project requires State approval, the federal agency must cooperate with State and local agencies "to the fullest extent possible to reduce duplication between NEPA and State and local requirements."[83] In California, this requires that federal agencies cooperate with State and local agencies to prepare a joint EIS/EIR under CEQA.[84] BLM policy recommends that State agencies be identified as joint lead agencies at the earliest possible stage.[85]

The Project will require site certification from the CEC and will also require approval of a streambed alteration agreement from the CDFG and waste discharge requirements ("WDRs") by the Regional Water Quality Control Board ("RWQCB"). Thus, the Applicant will require approval under CEQA before it can proceed with Project construction. The BLM must work with the CEC, CDFG and RWQCB to facilitate this process. It is essential for the BLM to encourage preparation of a joint EIS/EIR at the earliest possible stage to avoid duplication of materials and resources and unnecessary delay.

The DEIS does not comply with CEQA. First, California courts have repeatedly held that "an accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient [CEQA document]."[86] Compliance with CEQA, therefore, requires that the environmental document provide an accurate, consistent and complete description of the Project. As discussed above, the DEIS fails to do so.

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[82] *See, e.g.*, DEIS, pp. C.2-99 – C.2-100 [acknowledging Applicant's Draft Conceptual Decommissioning Plan inadequate for evaluating success of site restoration].

[83] 40 C.F.R. § 1506.2(b).

[84] 14 C.C.R. §§ 15222(a)(1), 15226, 15227 (2010).

[85] NEPA Handbook p. 114.

[86] *County of Inyo v. City of Los Angeles*, 71 Cal.App.3d 185, 193 (Cal. Ct. App. 1977).

Second, CEQA imposes an affirmative obligation on agencies to avoid or reduce environmental harm by adopting feasible project alternatives or mitigation measures.[87] The DEIS does not propose sufficient mitigation measures, however, to reduce or avoid the Project's impacts. For example, the DEIS states that impacts to cultural resources will be mitigated through implementation of unspecified requirements in a yet-to-be-developed programmatic agreement ("PA").[88] Because the terms of the PA have not been developed, it is impossible to determine whether the Project's impacts to cultural resources will be sufficiently mitigated. The mitigation measures proposed to address impacts to biological resources are similarly flawed because they impermissibly defer the formulation of measures that will effectively avoid the impacts or reduce them to less-than-significant levels.

Because the CDFG and the RWQCB must issue permits ***before*** the Applicant can begin ***any*** development on the Project site, the BLM must abide by the requirements of NEPA and work with the State agencies to develop a joint EIS/EIR. This will avoid duplication of government materials and resources.

IV. SPECIFIC COMMENTS REGARDING IMPACT ANALYSES AND MITIGATION MEASURES

In an EIS, the agency must consider every significant aspect of a proposed action.[89] An EIS's discussion of environmental impacts forms the scientific and analytic basis for comparison of the alternatives.[90] The discussion of impacts must include both "direct and indirect effects (secondary impacts) of a proposed project."[91] An agency need not speculate about all conceivable impacts, but it must evaluate the reasonably foreseeable significant effects of the proposed action.[92] Reasonable foreseeability means that "the impact is sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision."[93]

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[87] Cal. Pub. Res. Code §§ 21002, 21002.1.

[88] DEIS, p. C.3-93.

[89] *Balt. Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 97 (1983); *Dubois v. U.S. Dep't of Agric.*, 102 F.3d 1273, 1286 (1st Cir. 1996).

[90] 40 C.F.R. § 1502.16; *Dubois*, 102 F.3d at 1286.

[91] 40 C.F.R. § 1502.16 (a), (b); *Sierra Club v. Marsh*, 976 F.2d at 767; *Dubois*, 102 F.3d at 1286.

[92] *Sierra Club v. Marsh*, 976 F.2d at 768.

[93] *Dubois*, 102 F.3d at 1286, citing *Sierra Club v. Marsh*, 976 F.2d at 767.

The DEIS does not consider all of the Project's significant and foreseeable environmental impacts to biological resources, water resources, transmission and communication systems, hazards and cultural resources and land use, among others. The BLM's failure to take a hard look at the Project's impacts violates the basic requirements of NEPA. The BLM must revise its impacts analysis and issue a substantially revised or supplemental DEIS for public review and comment.

A. Impacts to Biological Resources and Special-Status Species

Jim Cornett, a certified wildlife biologist, reviewed the portions of the DEIS addressing impacts on biological resources and special status species. His comments, summarized below, are attached, together with copies of his *curriculum vitae*.

1. *The Analysis of Impacts to Biological Resources Fails to Consider Impacts Associated With the Transmission Line, Evaporation Ponds, Concrete Batch Plant and Redesigned Drainage Facilities*

As stated above, the DEIS fails to consider impacts associated with the transmission line to the planned Red Bluff substation, the newly proposed evaporation ponds, the on-site concrete batch plant, and the redesigned drainage facilities for the Project site.

The Applicant has recently provided a more detailed and presumably accurate description of the transmission line design, including the access and spur roads that will be built along the transmission line route.[94] The same document from the Applicant briefly describes the four proposed evaporation ponds and the concrete batch plant.[95]

The preliminary results for the Spring 2010 surveys reveal the presence of DT, WBO, and desert washes along the transmission line route.[96] The evaporation

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[94] *See* Attachment D, Environmental Evaluation of Project Updates, pp. 7-8. According to the Applicant, Southern California Edison ("SCE") is considering two alternative locations for the Red Bluff substation. *Ibid.* The transmission line to one alternative location would be approximately 5.25 miles long. The transmission line to the other alternative location would be 11.75 miles long. *Ibid.* The transmission line route considered in the DEIS biological resources analysis was only 1.2 miles long. DEIS, p. C.2-13.

[95] *See id.* at pp. 1-4.

[96] *See generally*, Attachment H, Preliminary Spring 2010 Survey Results.

ponds may pose a hazard to migratory birds. The redesigned drainage facilities will directly impact the desert washes on the Project site and will also impact downstream drainage features and associated habitats. The DEIS must be revised to consider these impacts.

2. Inadequate Analysis Of Impacts On The Threatened Desert Tortoise

Desert tortoises are listed as a threatened species under both the ESA and the California Endangered Species Act ("CESA"). Despite the protected status of desert tortoises, the BLM failed to take a hard look at the direct, indirect, and cumulative impacts caused by the Proposed Action and the action alternatives.

a. Inadequate baseline for measuring Project impacts

In surveys conducted by the Applicant's consultant in Spring 2009, no live DT were observed on-site, but fresh DT sign such as scat and active burrows were observed.[97] A total of 5 live DT and extensive DT sign were detected during surveys conducted in Spring 2010: 1 on the proposed Project site and 4 within the buffer area.[98] The DEIS failed to report the number of DT individuals and their sign found present on the Project site.[99] The DEIS recognizes that the Project will cause both short- and long-term, as well as direct and indirect impacts, to tortoises, but it underestimates the severity of these impacts because it is based on inadequate survey data and assumes the Project site offers low quality DT habitat.[100] The results of the Spring 2010 survey undermines this assumption. As stated by Mr. Cornett in his attached comments, the presence of active burrows on the Project site suggests the presence of multiple DT individuals.[101] Based on his observations during a recent site visit and his review of the DEIS and other materials, Mr. Cornett has found that the Project site offers "excellent tortoise habitat," not moderate or low quality habitat as stated by the Applicant and repeated in the DEIS.[102]

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[97] *See* AFC, Table 5.3-7.

[98] *See* Attachment H, Preliminary Spring 2010 Survey Results, Table 1.

[99] *See* DEIS, pp. C.2-73 – C.2-76.

[100] See *Ibid.*; see also Attachment A, Cornett Comments, pp. 3-5 [identifying flaws in survey methodology].

[101] *See* Cornett Comments, p. 3.

[102] *Compare id.* at pp. 5-8 *with* DEIS, p. C.2-77.

b. Inadequate analysis of direct and indirect impacts

Direct and indirect impacts to desert tortoises will be severe. For example, the tortoises would be susceptible to mortality from collisions with vehicles entering and leaving the site and vehicles using the transmission line access and spur roads.[103] This latter hazard was not considered in the DEIS. Clearing of the site, construction of the security fence, and Project operations would pose additional collision risks to the DT and would increase DT predators such as the common raven, the Desert kit fox, coyote, and feral dogs.[104] While the DEIS acknowledged the risk of increased predation due to the introduction of raven perching sites, it failed to consider the 8-12-mile long transmission line as an additional source of raven perching sites.[105]

The DEIS did not consider several sources of DT impacts. For example, during Project construction, vibrations of heavy equipment could cause burrows to collapse, burying the tortoises alive and destroying their habitat. In addition, relocated/translocated tortoises that are forced to construct new burrows would be exposed to death by dehydration or upper respiratory tract disease. In addition, the spread of invasive plant species on the site, especially Sahara mustard, would cause an indirect loss to foraging habitat.

c. Inadequate analysis of cumulative impacts

The DEIS concludes that there would be cumulative effects to the DT, such as loss of connectivity between the Chuckwalla and Chemehuevi DWMAs and critical habitat areas.[106] However, the methodology for analyzing the Project's contribution to cumulative DT impacts does not follow the BLM's guidance.[107] For example, the analysis does not define the geographic scope for analysis of DT cumulative impacts.[108] Nor does the analysis address short-term verses long-term cumulative impacts, as recommended in BLM's guidance.[109] Short-term impacts include the

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[103] *Id.* at p. C.2-81.

[104] *Id.* at p. C.2-80.

[105] *Ibid.*

[106] *Id.* at p. C.2-123.

[107] *See* NEPA Handbook, pp. 57-61.

[108] *See* DEIS, pp. C.2-122 – C.2-124.

[109] *See ibid.*; see also NEPA Handbook, p. 58.

immediate loss of at least 3,899 acres of occupied DT habitat and dislocation of the DT present on the Project site. Long-term impacts include the loss of connectivity between a large expanse of habitat in the Chuckwalla Valley and the upland designated critical habitat in the Chuckwalla DWMA.

The following six solar project ROWs are proposed within just 10 miles of the Project,[110] totaling almost 56,000 acres of land devoted to solar projects within the Chuckwalla Valley and Palen Valley: Chuckwalla Solar (CACA 48808), Genesis (CACA 48880), Desert Sunlight (CACA 48649), EnXco (#1) (CACA 49488), EnXco (#2) (CACA 49489), and EnXco (#3) (CACA 49491).[111] The discussion of cumulative impacts in the DEIS fails to accurately report the total number of ROW acres for each project.[112] The BLM must analyze what impact the loss of thousands of acres of habitat land within a 10-mile radius will have on the long-term success of the species. As Mr. Cornett states in his comments "Even though the desert tortoise is an officially threatened species, it is now facing the greatest assault on its habitat in the history of the United States."[113]

The above comment regarding cumulative impacts to DT applies not just to the analysis of cumulative impacts to DT but to the cumulative impacts to all species that are present on multiple sites in the region that are currently planned for intensive large-scale industrial development.

The BLM must also rigorously compare the Proposed Action's cumulative effects with the reduced cumulative effects of the Reconfigured Alternative, the revised Reduced Acreage Alternative and the use of alternate sites.[114]

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[110] *See* Attachment F, Regional Setting with Vicinity Projects, dated April 14, 2009; *see also* Attachment E, First-In-Line Solar Applications, dated December 21, 2009, available at http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/pa/energy/solar.Par.45875.File.dat/Renew_Energy_2_09_solar.pdf (as of June 24, 2010).

[111] *Ibid.* Two projects proposed by Solel, Inc. (CACA 49493 and CACA 49494) were omitted from the total acreage calculation because these ROW applications have apparently been rejected.

[112] *See* DEIS, pp. C.2-118 – C.2-119 [describing, for example, the ROW for the Project as 3,001 acres instead of the accurate ROW area, 5,200 acres (not including the transmission line ROW)].

[113] Cornett Comments, p. 9.

[114] *See* NEPA Handbook, p. 59.

3. *Inadequate Analysis Of Impacts On The Mojave Fringe-Toed Lizard*

a. *Inadequate baseline for measuring Project impacts*

Although the resource agencies have not issued survey guidelines for the MFTL, Jones and Lovich (2009) indicate that MFTLs are most commonly detected from late spring (May) through early fall (into October).[115] Because MFTLs are generally difficult to detect, they are more easily detected by teams of at least two people.[116] In the past, CDFG and FWS has required both pitfall trapping and intensive area searches to effectively survey Colorado Desert fringe-toed lizards.[117] These surveys were to be conducted monthly between March and November.[118]

Here, nothing resembling a protocol survey was conducted for the MFTL even though some survey parameters exist for this species.[119] Observations on the project site, therefore, were incidental.[120] These observations were made during surveys conducted in the early spring of 2009 and early spring of 2010, before the most active period for MFTL. There is no evidence that the surveys were conducted by two or more people. Likewise, pitfall trapping and intensive surveys for MFTL were not conducted. Thus, the presence of MFTL on the Project site was likely underreported.

Nonetheless, during the 2009 spring surveys, 112 incidental observations were recorded within the PSPP disturbance area and dozens of additional sightings

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[115] Jones LC, RE Lovich, eds. 2009. Lizards of the American Southwest: A Photographic Field Guide. Rio Nuevo Publishers, Tucson (AZ). p. 567.

[116] *Ibid.*

[117] CH2MHILL. 2002. Final Environmental Impact Report /Environmental Impact Statement. Imperial Irrigation District: Water Conservation and Transfer Project. Appendix F. Available at: http://iid.com/Media/Appendix-F-General.pdf.

[118] *Id.*

[119] See, e.g., Cablk, M.E. and J.S. Heaton. 2002 Nov. Mojave Fringe-Toed Lizard surveys at the Marine Corps Air Ground Combat Center at Twentynine Palms, California and nearby lands administered by the Bureau of Land Management. California: Marine Corps Air Ground Combat Center. Report M67399-00-C-0005, available at: http://www.dri.edu/People/mcablk/Cablk_Heaton_Final_Report.pdf (as of June 23, 2010).

[120] Palen Solar Power Project Biological Technical Report, Riverside County, California, August, 2009, p. 82; see also Attachment I, Preliminary Spring 2010 Survey Results Corrected and Preliminary Impact Calculations for Biological Resources, dated May 27, 2010 ("Corrected Preliminary Spring 2010 Survey Results"), Table 3.

were recorded in the BRSA. In 2010, field surveyors made a total of 388 incidental observations of MFTL in previously unsurveyed areas, including the transmission line corridor.[121] These latter survey results are not reflected in the DEIS. Consequently, the DEIS fails to address all of the Project's impacts to MFTL.

b. Inadequate analysis of direct and indirect impacts

The DEIS appropriately recognizes some but not all of the direct and indirect impacts to MFTL habitat.[122] More MFTL individuals are likely present on the Project site and within the disturbance area that were reported in the DEIS and in the more recent Spring 2010 survey results.

Furthermore, as discussed above, the DEIS failed to address the impacts to MFTL that may occur along the transmission line route to the Red Bluff substation. In addition, the DEIS fails to address the impacts to MFTL associated with the proposed Sand Replenishment Program.

c. Inadequate analysis of cumulative impacts

As with the DT, cumulative impacts to the MFTL would surely occur as a consequence of building the eight currently proposed solar projects in the Project vicinity. The DEIS acknowledges that these cumulative impacts would be significant, but it fails to acknowledge the extent of these impacts and the Project's contribution to them.[123] For example, the analysis overestimated the total habitat in the NECO area and in the Chuckwalla Valley because it included lands, such as dry playas, that do not offer similar quality habitat for MFTL and the analysis made no attempt to rank habitat value.[124] The analysis also did not include habitat land that would be indirectly impacted by a number of factors including interruption of sand transport systems and premature stabilization of dunes due to the spread of noxious weeds.[125]

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[121] Attachment I, Corrected Preliminary Spring 2010 Survey Results, Table 3.

[122] DEIS, p. C.2-83 [acknowledging direct loss of 1,735 acres of habitat and indirect impacts to downwind habitat].

[123] *Id.* at p. C.2-84 [acknowledging cumulative impacts to MFTL]; *see also id.* at pp. C.2-125 – C.2-127.

[124] *Id.* at pp. C.2-125 – C.2-127.

[125] *Id.* at p. C.2-126.

The analysis of the Project's contribution to cumulative impacts must be revised to specifically address the cumulative impacts that will occur as a consequence of approving numerous immense solar projects within a confined geographic area. The discussion of pending projects that may disturb dune-dependant species including the MFTL appears to ignore the large projects proposed by enXco adjacent to the proposed Genesis project (CACA 49489 and CACA 49488). According to information provided by the BLM, these two projects alone will occupy approximately 17,415 acres of what appears to be predominantly dune habitat.[126] The analysis also appears to underestimate the amount of acres the First Solar Desert Sunlight project will impact: while the DEIS states that this project will occupy only 5,119 acres, other documents produced by the BLM state that this Project will occupy 14,905 acres.[127] The DEIS must be revised to address the Project's contribution to cumulative impacts to MFTL habitat.

4. Inadequate Analysis Of Impacts On The Western Burrowing Owl

The WBO is protected by the Migratory Bird Treaty Act, considered a Bird of Conservation Concern by the USFWS, and Sensitive species by the BLM.[128] The burrowing owl's special status both federally and within the State mandates that the BLM take a hard look at any potential impacts the Project may have on the species. Due to the inadequacies described below, the BLM must revise the DEIS analysis of impacts to the WBO.

a. Inadequate baseline for measuring Project impacts

The DEIS acknowledges that suitable habitat exists on the site and that the species was observed in the area in the past.[129] During the burrowing owl survey, two owl pairs with two juveniles each and four active burrows with sign were identified within the survey area.[130] The DEIS only reported one of these pairs and

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[126] *See* Attachment E, First-In-Line Solar Applications, dated December 21, 2009, available at http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/pa/energy/solar.Par.45875.File.dat/Renew_Energy_2_09_solar.pdf (as of June 24, 2010); *see also* DEIS, Exhibit A to Soil and Water Report, Figure 4, Regional Geology Map.

[127] *Compare Ibid. with* DEIS, p. C.2-144.

[128] U.S. Fish & Wildlife Serv., Status Assessment & Conservation Plan for the Western Burrowing Owl in the United States, pp. 4-5 (2003).

[129] DEIS, pp. C.2-38, C.2-86 – C.2-87.

[130] *See* Draft Burrowing Owl Plan, dated January 2010, Introduction.

two of the four juveniles, underreporting the WBO observed onsite by at least half.[131]

According to the CDFG, a site should be assumed occupied if at least one burrowing owl has been observed occupying a burrow within the last three years.[132] Thus, the BLM should assume that the site is occupied by the WBO.

The WBO Technical Report indicates the Applicant conducted burrowing owl surveys in 2009 according to California Burrowing Owl Consortium ("CBOC") Guidelines.[133] Survey protocols require that tracks, feathers, pellets, or other items (prey remains, animal scat) at burrows should be reported. The Applicant determined several burrows to be "inactive."[134] However, the Applicant does not describe the analysis used to determine inactivity, including the estimated age and condition of sign. Thus, the Applicant may have underreported the amount of active WBO burrows on the Project site and within the buffer area.

In addition, the biologists may have missed observing additional burrowing owls because the surveys were deficient. Owl surveys are frequently conducted with binoculars and involve looking upward to identify flushed owls and listening for owl calls. The Phase II WBO surveys conducted in 2009 for the Project, however, were conducted in conjunction with DT surveys.[135] Phase II of the 2010 Surveys appear to have also been conducted in conjunction with DT surveys.[136] If the surveys were in fact conducted at the same time, it is likely that biologists may have missed observing the burrowing owl because they were looking down. Tortoise surveys do not require the biologist to look upward towards flushing owls, listen for calls or use binoculars.

The Applicant has not yet released the results of WBO surveys conducted in Spring 2010. Only these surveys examined the presence or absence of burrowing owl along the transmission line corridor and in areas that would be disturbed by

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[131] *Id.* at p. C. 2-87.

[132] Dep't of Fish & Game, Staff Report on Burrowing Owl Mitigation, 2 (Oct. 17, 1995).

[133] Attachment J to BRTR, WBO Technical Report, p. 5.

[134] Attachment J to BRTR, WBO Technical Report, pp. 7-8; *see also* Draft Burrowing Owl Plan, dated January 2010, § II (B) 2009 Burrowing Owl Survey Results.

[135] Attachment J to BRTR, WBO Technical Report, p. 5.

[136] *See* Attachment G, 2010 Survey Protocol, p. 4.

alternative Project configurations. The DEIS must be revised to consider the impacts to WBO (and other species) that are associated with the transmission line for the Project and with Project alternatives. It is essential that the BLM specifically determine the extent to which the WBO is present on the site in order to adequately mitigate potentially significant impacts and in order to decide between feasible Project alternatives.

b. Inadequate analysis of direct and indirect impacts

Because the surveys for WBO were inadequate and incomplete, the DEIS failed to sufficiently analyze the Project's impacts to WBO.

c. Inadequate analysis of cumulative impacts

The inadequacies of the cumulative impacts analysis concerning WBO are very similar to those described for the DT and MFTL described above. While the DEIS acknowledges some of the cumulative impacts to this species, it fails to provide the required "hard look" at the Project's contribution to these impacts.[137]

5. Inadequate Analysis Of Impacts On The Golden Eagle

The Golden eagle is protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Act. The DEIS contains a simplistic impact analysis concerning Golden eagles and their habitat.[138]

a. Inadequate baseline for measuring Project impacts

The DEIS recognizes that Golden eagles are present in the Mojave Desert and that a Golden eagle nest is located approximately 5.5 miles from the Project site.[139] No Golden eagles were identified during the avian point-count survey.

The USFWS has developed protocol for Golden eagle surveys. In February 2010, the USFWS released its "Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations."[140] According to this protocol, "[t]he

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[137] DEIS, p. C.2-131.

[138] *Id.* at pp. C.2-87 – C.2-88.

[139] DEIS, p. C.2-39.

[140] Pagel, J.E., D.M. Whittington, and G.T. Allen. 2010. Interim Golden Eagle inventory and monitoring protocols; and other recommendations. Division of Migratory Bird Management, U.S.

Applicant is responsible for providing up-to-date biological information about eagles that breed, feed, shelter, and/or migrate in the vicinity of the activity that may potentially be affected by the proposed activity."[141] The USFWS reports "[t]hese field efforts are the mutual responsibility of agencies authorizing activities and their permittees."[142] Despite these requirement, the DEIS relies on outdated information concerning the locations of nests in the region.[143]

The Applicant has apparently conducted helicopter surveys for Golden eagle nests in Spring 2010, following the release of the DEIS. On June 24, 2010, the Applicant submitted the results of the helicopter surveys. It is not clear whether the surveyors complied with the requirements for aerial and ground surveys described in the USFWS guidance document.[144]

Because nesting sites are within ten miles of the Project site and typical prey species occur on the Project site, the Project site likely lies within the hunting territory of the Golden eagle. The BLM must therefore consult with the USFWS and conduct a focused survey for this species.

b. Inadequate analysis of direct and indirect impacts

The DEIS assesses the impacts of the Project to golden eagle foraging habitat, based on incomplete and outdated information and no survey data, and concluded that the Project would not result in direct or indirect impacts to golden eagles.[145] The DEIS must be revised to take into consideration the results of the Spring 2010 golden eagle surveys. The DEIS must also resolve whether a permit from the USFWS would be required for the "take" of golden eagle(s).

Fish and Wildlife Service ("2010 Golden Eagle Survey Protocol"), available at: http://www.fws.gov/southwest/es/oklahoma/Documents/Wind%20Power/Documents/USFWS_Interim_GOEA_Monitoring_Protocol_10March2010.pdf (as of June 23, 2010).

[141] *Id.* at p. 4.

[142] *Id.* at p. 4.

[143] DEIS, p. C.2-128 [reported nest locations rely on data developed in 1978, 1979, and 1984].

[144] 2010 Golden Eagle Survey Protocol, pp. 11-17.

[145] DEIS, pp. C.2-87 – C.2-88.

c. Inadequate analysis of cumulative impacts

The DEIS acknowledges the Project would contribute to the cumulative loss of golden eagle foraging habitat within the NECO planning area.[146] In addition, Staff concluded the Project would reduce the availability of foraging habitat in the Project area and could degrade foraging habitat through the introduction and spread of noxious weeds and an increase in human activity in the area.[147]

6. Inadequate analysis of impacts to migratory/special-status bird species

a. Inadequate baseline for measuring Project impacts

The DEIS discussion concerning impacts to migratory/special-status bird species fails to acknowledge that surveys of the current transmission line route had not been conducted.[148] The preliminary results of the Spring 2010 surveys indicate that additional Desert Dry Wash Woodland will be impacted by the Project.[149] As reported in the DEIS, this type of riparian habitat supports 90% of birdlife within the Sonoran Desert.[150] Thus, the amount of acreage of habitat for migratory and special-status bird species reported in the DEIS is not accurate and must be revised.

b. Inadequate analysis of direct and indirect impacts

Because the surveys for jurisdictional waters along the transmission line route were inadequate and incomplete, the DEIS failed to sufficiently analyze the Project's impacts to migratory and special-status bird species that depend on the associated riparian vegetation for habitat.

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146 *Ibid.*

147 *Id.* at p. C.2-88.

148 DEIS, p. C.2-89.

149 Attachment I, Corrected Preliminary Spring 2010 Survey Results, Figure 3, Preliminary Results State Waters Spring 2010 Surveys.

150 DEIS, p. C.2-89.

c. Inadequate analysis of cumulative impacts

The section of the analysis concerning cumulative impacts to biological resources fails to mention (much less address) the cumulative impacts to migratory and special-status bird species.[151] The DEIS must be revised to address the Project's contribution to these cumulative impacts.

7. Inadequate analysis of impacts to rare plants

a. Inadequate baseline for measuring Project impacts

The DEIS acknowledges that the types and quantities of rare plants had not been determined at the time that the DEIS was published due to the inadequacy of the Applicant's botanical survey efforts.[152] The DEIS proposed that surveys be conducted for special status plants in the spring *and fall* of 2010.[153]

As the DEIS acknowledges, the Spring 2009 surveys were inadequate for several reasons, not least of which is the fact that certain rare plants are difficult if not impossible to detect outside of their blooming period.[154] Additional rare plant surveys were conducted in Spring 2010, after the release of the DEIS. The Applicant's protocol for the Spring 2010 rare plant surveys was similarly inadequate.[155] As of yet, no Fall rare plant surveys have been conducted. Several species have been identified as target species for Fall surveys, including Abram's spurge (*Chamaesyce abramsiana*), Flat-seeded spurge (*Chamaesyce platysperma*), Harwood's phlox (*Eriastrum harwoodii*) but targeted Fall surveys for these species have not been conducted.[156]

Despite incomplete information regarding the presence of rare plants both on and near the Project disturbance area, the DEIS concludes that the Project's impacts to rare plants will be reduced to less-than-significant levels through

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[151] *See id.* at pp. C.2-118 – C.2-146.

[152] DEIS, p. C.2-94.

[153] *Ibid.*

[154] *Ibid.*

[155] *See* Attachment G, Spring 2010 Protocol Doc.

[156] *See* DEIS, pp. C.2-30, C.2-44 – C.2-53.

mitigation.[157] The Applicant's botanical surveys, however, have not provided an adequate basis for analyzing potential Project impacts. The results of the Spring 2010 surveys for rare plants, for example, were not considered in the DEIS analysis.[158]

b. Inadequate analysis of direct and indirect impacts

The analysis of Project direct and indirect impacts to the two species identified during Spring 2009 surveys fails to consider the direct and indirect impacts to plant specimens that were not discovered during the surveys. Because the surveyors walked wide transects, they certainly could not have observed every rare plant present on the Project site and in the buffer area. Because some rare plants were observed, the site should be considered occupied by those species and the direct and indirect impacts to the species must be considered significant.

c. Inadequate analysis of cumulative impacts

The analysis of cumulative impacts to dune-dependant rare plants relied on inaccurate and incomplete information concerning the size of the PSPP project and other pending projects in the region. This analysis describes the Project's disturbance area as 3,001 acres, when, earlier in the chapter, the Project is described as disturbing 3,899 acres.[159] In addition, the discussion of pending projects that may disturb dune-dependant rare plant habitat also appears to ignore the large projects proposed by enXco adjacent to the proposed Genesis project (CACA 49489 and CACA 49488). According to information provided by the BLM, these two projects alone will occupy approximately 17,415 acres of what appears to be predominantly dune habitat adjacent to Ford Dry Lake.[160]

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[157] *Ibid.*

[158] *See* Attachment I, Corrected Preliminary Spring 2010 Survey Results, Table 2, Rare Plant Population Counts Spring 2010, Figure 2, Rare Plant Spring 2010 Surveys.

[159] *See* DEIS, p. C.2-144. Again, this figure fails to consider the transmission line to the planned Red Bluff substation.

[160] *See* Attachment E, First-In-Line Solar Applications, dated December 21, 2009, available at http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/pa/energy/solar.Par.45875.File.dat/Renew_Energy_2_09_solar.pdf (as of June 24, 2010); *see also* DEIS, Exhibit A to Soil and Water Report, Figure 4, Regional Geology Map.

8. Inadequate analysis of impacts to desert washes as wildlife movement/genetic exchange corridors

a. Inadequate baseline for measuring Project impacts

In desert environments such as the Chuckwalla Valley, wildlife movement corridors allow long-term genetic exchange between animal and plant populations. The DEIS acknowledges the importance of desert washes as wildlife movement corridors and the impacts that past projects have had on the Palen watershed.[161]

As with the surveys for individual species discussed above, the 2009 surveys for the desert washes failed to consider the washes that traverse the proposed transmission line to the proposed Red Bluff substation. While the 2010 surveys attempted to identify jurisdictional waters that traverse the transmission line corridors, the survey results provided by the Applicant do not attempt to identify or measure the function and value of these washes as wildlife movement corridors.[162]

In response to Staff's requests for information about potential wildlife use of desert washes within the Project site as movement corridors, the Applicant provided information and a qualitative analysis, based on reconnaissance level surveys which were confounded by rainstorms.[163] The Applicant concluded that a movement study conducted throughout the course of an entire year would be necessary to determine the extent of wildlife movement within the washes versus the uplands.[164] However, the Applicant did not provide any information about the methodology of such a survey, and commited only to make note of wildlife sign in washes during subsequent visits.[165] The most recent information concerning the Spring 2010 surveys does not mention wildlife sign observations.[166] The DEIS description of the

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[161] *See* DEIS, pp. C.2-120 – C.2-121, C.2-135; *see also id.* at p. C.2-120 ["Standing dead ironwood trees, stunted, drought-stressed creosote bushes and other shrubs, sparse cover and very low diversity seen north of I-10 in the Palen watershed are a testament to the downstream effects that channel diversions can have on both upland and riparian plant communities"].

[162] *See* Attachment G, Spring 2010 Survey Protocol, pp. 11-12; *see also* Attachment I, Corrected Preliminary Spring 2010 Survey Results, Figure 3, Preliminary Results State Waters Spring 2010 Surveys.

[163] *See* Applicant's Response to DR-BIO-70, DR-BIO-71, and DR-BIO-76.

[164] *See* Applicant's Response to DR-BIO-76, p. BIO-49.

[165] *Ibid.*

[166] *See* Attachment I, Corrected Preliminary Spring 2010 Survey Results, p. 1.

desert washes as wildlife movement corridors was therefore based on incomplete and inadequate information.

b. Inadequate analysis of direct and indirect impacts

The Applicant notes that the Project would impact movement by large mammals such as coyote, desert kit fox, mule deer, bobcat, American badger, mountain lion, and Nelson's bighorn sheep.[167] The DEIS incorporates some of this information regarding impacts to wildlife movement, acknowledging that the Project "could impede wildlife movement."[168] However, the DEIS fails to accurately conclude that the massive Project *would* impede movement and fails to provide any information or analysis concerning impacts to the movement of invertebrates, small mammals, amphibians and reptiles (except DT), and the impacts to species at both individual and intergenerational movement levels.

c. Inadequate analysis of cumulative impacts

Biological Resources Table 16 fails to accurately report the Project's contribution to the cumulative loss of several habitat types, including Desert Dry Wash Woodland, Sand Dunes, Chenopod Scrub, and Playas.[169] The table erroneously reports that the Project will not contribute to any cumulative loss of these habitat types. This conclusion is inconsistent with other information provided in the DEIS, which indicates the presence of Desert Dry Wash Woodland, Sand Dunes, and Playas within the Project disturbance area and one-mile buffer.[170]

The cumulative impacts to desert washes did not adequately address the cumulative direct and indirect impacts caused by projects in the Palen watershed.[171] While the DEIS acknowledged these impacts would be significant, there was no attempt to quantify these impacts or measure the Project's contribution to these cumulatively significant impacts. For example, the DEIS failed to specifically address the Project's contribution to cumulative impacts to wildlife movement,

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[167] *See* Applicant's Response to DR-BIO-80, p. BIO-52.

[168] *See* DEIS, pp. C.2-67, C.2-120 – C.2-121, C.2-133 – C.2-135.

[169] *See id.* at pp. C.2-134 – C.2-135.

[170] *See id.* at pp. C.2-2-15, Biological Resources Table 2.

[171] *See* DEIS, pp. C.2-119 – C.2-120.

when combined with the nearby proposed large-scale projects such as Chuckwalla Solar I (CACA 48808) and Genesis (CACA 48880).

In addition, the transmission line and drainage facilities for the Projects have been redesigned since the DEIS was released. Depending on the desert washes traversed by the transmission line and the modifications to on-site natural drainage features, the Project's incremental contribution to cumulative impacts to desert washes may be significant. The analysis of this issue must be revised to consider the westward transmission line and associated roads and the modified drainage plan.

9. Inadequate Analysis Of Toxicity Impacts From Wildlife Exposure To HTF Soil Remediation Areas and Evaporation Ponds.

As discussed in the DEIS, the Project will use two land treatment units to bioremediate or land farm soil contaminated with heat transfer fluid ("HTF").[172] The DEIS lacks sufficient information to gauge the magnitude of the impacts to biological resources associated with the land treatment units and therefore does not comply with NEPA. The DEIS fails to identify wildlife exposure to HTF as a potential issue. There is no meaningful information, for example, on the concentration of toxic minerals that would be present in the land treatment units, no information on what measures would be taken to reduce use of the HTF land treatment units by birds, and no information on what potential adverse biological effects would result. This is a potentially significant impact that must be discussed in the DEIS.

Similarly, the DEIS does not address the potential hazards to wildlife posed by the recently proposed evaporation ponds for the Project.[173] The DEIS could not have addressed these potential impacts because the evaporation ponds were not proposed as part of the Project until after the DEIS was prepared. The DEIS must therefore be revised to consider the impacts associated with this Project component.

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[172] *See* DEIS, pp. C.13-15 – C.13-16.

[173] *See* Attachment D, Environmental Evaluation of Project Updates, pp. 3-4.

10. The DEIS Fails to Disclose BLM's Consultation and Potential Permit under the Endangered Species Act.

a. *General obligations under the ESA*

Section 7(a)(2) of the federal Endangered Species Act prohibits agency action that is "likely to jeopardize the continued existence" of any endangered or threatened species or "result in the destruction or adverse modification" of its critical habitat.[174] To "jeopardize the continued existence of" means "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species."[175] An action is "jeopardizing" if it keeps recovery "far out of reach," even if the species is able to cling to survival.[176] Thus, "an agency may not take action that will tip a species from a state of precarious survival into a state of likely extinction. Likewise, even where baseline conditions already jeopardize a species, an agency may not take action that deepens the jeopardy by causing additional harm."[177] To satisfy this obligation, the federal agency undertaking the action (here, the BLM) must prepare a "biological assessment" that evaluates the action's potential impacts on species and species' habitat.[178]

If the proposed action "is likely to adversely affect" a threatened or endangered species or adversely modify its designated critical habitat, the BLM must engage in "formal consultation" with the USFWS to obtain its biological opinion as to the impacts of the proposed action on the listed species.[179] Once the consultation process has been completed, USFWS must give the BLM a written biological opinion "setting forth [USFWS's] opinion, and a summary of the

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[174] 16 U.S.C. § 1536(a)(2).

[175] 50 C.F .R. § 402.02; *see also Nat'l Wildlife Fed'n v. NMFS,* 524 F.3d 917 (9th Cir. 2008) (*NWF v. NMFS II*) [rejecting agency interpretation of 50 C.F.R. § 402.02 that in effect limited jeopardy analysis to survival and did not realistically evaluate recovery, thereby avoiding an interpretation that reads the provision "and recovery" entirely out of the text].

[176] *NWF v. NMFS II, supra,* 524 F.3d at 931.

[177] *Id.* at 930.

[178] 16 U.S.C. § 1536(c); 50 C.F.R. § 402.12(a).

[179] 16 U.S.C. § 1536(a)(2), (b)(3); *see also* 50 C.F.R. § 402.14(a), (g).

information on which the opinion is based, detailing how the agency action affects the species or its critical habitat."[180]

If USFWS determines that jeopardy, destruction or adverse modification of critical habitat is likely, USFWS "shall suggest those reasonable and prudent alternatives which [it] believes would not violate subsection (a)(2) of this section and can be taken by the Federal agency or applicant in implementing the agency action."[181] "Following the issuance of a 'jeopardy' opinion, the [BLM] must either terminate the action, implement the proposed alternative, or seek an exemption from the Cabinet-level Endangered Species Committee pursuant to 16 U.S.C. § 1536(e)."[182]

b. The Draft Biological Assessment fails to satisfy ESA requirements

Like NEPA, federal agency action is broadly defined under the Endangered Species Act. The ESA regulations define agency "action" as follows:

> [A]ll activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas. Examples include, but are not limited to: [¶¶]
>
> > (c) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; . . . .[183]

When fulfilling their duties under the ESA, federal agencies must also take a broad view of the project and its potential effects, as demonstrated by the following definitions in the ESA regulations:

> *Action area* - "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action."

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[180] 16 U.S.C. § 1536(b)(3)(A); *see also* 50 C.F.R. § 402.14(h).

[181] 16 U.S.C. § 1536(b)(3)(A).

[182] *National Ass'n of Home Builders v. Defenders of Wildlife,* 551 U.S. 644, 652 (2008).

[183] 50 C.F.R. § 402.02. These regulations implement 16 U.S.C. § 1536(a)(2), which requires federal agencies to consult with the Secretary of Interior and/or Secretary of Commerce to "insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an 'agency action') is not likely to jeopardize the continued existence of any endangered species or threatened species . . . ."

> *Effects of the action* - "the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action . . . . Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration."[184] "Effects of the action" include both direct and indirect effects of an action "that will be added to the environmental baseline."[185]
>
> *Environmental baseline* - includes "the past and present impacts of all Federal, State or private actions and other human activities in the action area" and "the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation."[186]

As the above discussion demonstrates, what constitutes agency action and the scope of environmental review required for agency action is virtually the same under NEPA and ESA. Both statutes require the BLM to broadly consider actions related to the proposed action. The Draft Biological Assessment submitted by the Applicant, however, fails to accurately describe the transmission line to the planned Red Bluff substation and the redesigned drainage channels for the Project site. Consequently, the Draft Biological Assessment fails to address the associated impacts to listed species such as the DT. As discussed below, the transmission lines, as well as other project features, would have the potential to significantly impact the DT and its habitat in numerous respects not considered in the DEIS.

c. *The DEIS fails to disclose Section 7 Consultation*

The DEIS fails to disclose the details of BLM's required consultation under the ESA with the USFWS for the federally and State threatened DT.[187] The DEIS also fails to analyze the USFWS's potential issuance of a biological opinion and

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[184] *Ibid.*

[185] *Ibid.*

[186] *Ibid.*; see also *National Wildlife Federation v. National Marine Fisheries Service,* 524 F.3d 917, 924 (9th Cir. 2008)

[187] See, e.g., DEIS, p. C.2-148 [describing BO requirement]

incidental take permit under Section 7 of the ESA. Therefore, the DEIS is wholly inadequate. The BLM must disclose and analyze these activities in a revised DEIS that is circulated to the public for review and comment.

The ESA prohibits "take" of threatened and endangered species.[188] "Take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct."[189] "Harm" includes "the destruction or adverse modification of habitat resulting in potential injury to a species, including injury from impairment of essential behavioral patterns, such as breeding, feeding or sheltering."[190] Under ESA Section 7, a federal agency must initiate consultation with the USFWS "at the earliest possible time" whenever the agency proposes to undertake an action that "may affect" a listed species or species' critical habitat.[191] If a "may affect" determination is made, which is certain for the proposed Project, then the USFWS must develop and issue a biological opinion containing terms and conditions to ensure that the activities are not likely to jeopardize protected species.[192] Furthermore, USFWS's issuance of a biological opinion requires environmental review under NEPA.

Here, despite protected species on the proposed Project site, there is no indication in the DEIS or its appendices that the BLM has initiated consultation under Section 7 of the ESA, or that the DEIS reviews the environmental effects of the USFWS's issuance of a biological opinion and incidental take permit.[193] A total of four desert tortoises were detected during surveys conducted in Spring 2010 within the transmission line ROW and buffer areas.[194] Incidental DT observations were also made during surveys conducted in 2009, and numerous DT burrows, bones, and other sign were identified within the site and buffer zone.[195] As explained by Mr. Cornett, the observed DT and DT sign indicate the presence of DT

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[188] 16 U.S.C. § 1538 (2010).

[189] 16 U.S.C. § 1532(19).

[190] 50 C.F.R. § 17.3 (2009).

[191] 50 C.F.R. § 402.14(a).

[192] *See* 16 U.S.C. § 1536.

[193] DEIS pp. A-3, C.2-148.

[194] *See* Attachment I, Corrected Preliminary Spring 2010 Survey Results, Table 1.

[195] DEIS p. C.2-35; *see also* Attachment I, Corrected Preliminary Spring 2010 Survey Results, Table 1 [three DT detected outside buffer area].

in greater numbers than the amount observed.[196] The DEIS recognizes that the Project will cause both short- and long-term, as well as direct and indirect impacts to federally protected tortoises.[197]

Direct and indirect impacts to desert tortoises will be severe. For example, the tortoises could be susceptible to mortality from collisions with vehicles entering and leaving the site.[198] Clearing of the site and construction of the security fence and transmission line could introduce feral dogs and the presence of ravens, raptors, and other DT predators.[199] Vibrations of heavy equipment could cause burrows to collapse, burying the tortoises alive and destroying their habitat. Relocated tortoises forced to construct new burrows would be exposed to death by dehydration or upper respiratory tract disease.[200] In addition, the spread of invasive plant species on the site would cause an indirect loss to foraging habitat.[201]

Because desert tortoises have been found on the site, and the Project will clearly impact the species, the BLM must undertake Section 7 consultation. The DEIS acknowledges that the BLM must initiate consultation with the USFWS, but it does not describe the status of such consultation and it fails to confirm that all terms and conditions associated with these consultations would be implemented.[202] In addition, the DEIS fails to disclose any of the terms and conditions the USFWS and CDFG would require the Applicant to implement.

In sum, the DEIS must disclose the status of BLM consultation with the USFWS and must incorporate the terms and conditions imposed by the USFWS. Without this information, it is impossible for the public to meaningfully assess the environmental effects and mitigation for impacts to the DT. Furthermore, without full public disclosure and opportunity for comment, USFWS will be required to conduct further environmental review under NEPA.

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[196] Cornett Comments, p. 3.

[197] DEIS, pp. C.2-73 – C.2-83.

[198] *Id.* at p. C.2-73.

[199] *Id.* at p. C.2-80.

[200] *Id.* at p. C.2-76.

[201] *Id.* at p. C.2-81.

[202] *Id.* at p. C. 2-148.

11. Inadequate Analysis of the Impacts Associated with Nighttime Noise and Lighting

The DEIS recognized that nighttime noise and lighting associated with Project construction and operation may significantly impact biological resources.[203] The Applicant recently proposed changes to the construction schedule for the Project, which will result in more noise and lighting at night than the amount considered in the DEIS.[204] The DEIS does not consider the modified construction schedule, which will result in increased nighttime noise and lighting impacts to wildlife.

12. Inadequate and Incomplete Discussion of Feasible Mitigation Measures

An EIS is not complete unless it contains "a reasonably complete discussion of possible mitigation measures."[205] Mitigation expressly includes "avoiding the impact altogether by not taking a certain action or parts of an action."[206] It also includes "minimizing impacts by limiting the degree or magnitude of the action and its implementation."[207] In this case, the discussion of mitigation measures to avoid or minimize impacts to special-status and other species is inadequate.

a. Failure to incorporate feasible measures to avoid or reduce impacts to desert tortoise and its habitat

Mitigation Measure BIO-12 calls for the acquisition of 4,737 acres of DT habitat to compensate for the Project's direct and indirect impacts to DT.[208] This compensation land has not been identified. There is no evidence that this amount of privately-owned acreage of equivalent habitat function and value is available for purchase. Due to the high quality of DT habitat on the Project site, Mr. Cornett recommends substantially more mitigation acreage.[209] In addition, there is insufficient evidence that this proposed mitigation will be adequate for the *recovery*

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[203] *See* DEIS, pp. C.2-91 – C.2-92, C.2-95.

[204] *See* Attachment D, Environmental Evaluation of Project Updates, pp. 12-14.

[205] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989).

[206] 40 C.F.R. § 1508.20(a).

[207] *Id.* at subd. (b).

[208] DEIS, pp. C.2-165 – C.2-166.

[209] Cornett Comments, p. 8.

of the species as required in the NECO plan and under the Federal ESA. For these reasons, the proposed mitigation is inadequate under both NEPA and CEQA.[210]

b. Failure to incorporate feasible measures to avoid or reduce impacts to Mojave fringe-toed lizards and their habitat

According to a report published by the BLM regarding MFTL, "[s]and dune ecosystems, including their source sand and sand corridors, are necessary for the long-term survivorship of aeolian sand specialists, such as, fringe-toed lizards."[211] The criteria for compensation lands included in measure BIO-20 reflects this fact.[212]

There are several steps that may and should be taken to avoid or minimize direct project impacts on MFTL habitat, as described in Mr. Cornett's comments. First, the Reduced Acreage Alternative (Revised) should be selected. This would entirely avoid any impact to the sand transport corridor adjacent to the Project site. In the event the Project is configured over the existing MFTL habitat, a mitigation/habitat restoration plan should incorporate carefully crafted success criteria that are strictly abided, as well as adaptive management provisions that facilitate adjustments to the restoration effort if success criteria are not met. The DEIS should be revised to discuss these measures in greater detail.

The Applicant has proposed a "Sand Replenishment Program" as mitigation for the Project's indirect impacts to areas that are downwind from the Project's footprint.[213] This mitigation proposal, however, would result in impacts to MFTL and other species that must be addressed. For example, vehicles collecting sand along the Project's fence-line and depositing sand in areas downwind from the Project site could crush or bury MFTL and other animals. The Sand Replenishment Program proposed by the Applicant does not address these impacts.[214]

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[210] *See Sierra Club v. Marsh* 816 F.2d 1376, 1389 (9th Cir. 1987) [Under ESA, "if an agency plans to mitigate its project's adverse effects on an endangered species by acquiring habitat and creating a refuge, it must insure the creation of that refuge before it permits destruction or adverse modification of other habitat"].

[211] Bradford D. Hollingsworth and Kent R. Beaman, Mojave Fringe Toed Lizard, available at: http://www.blm.gov/ca/pdfs/cdd_pdfs/fringe1.PDF.

[212] DEIS, pp. C.2-176 – C.2-177.

[213] *See* Draft Aeolian Sand Mitigation Summary Report, dated May 14, 2010.

[214] *Ibid.*

To the extent mitigation is achieved through compensation habitat, it is essential that the mitigation measure include performance standards such as "no net loss" of habitat and equivalent functions and values. Potential compensation habitat should be identified to ensure that this type of mitigation is feasible. According to one BLM resource regarding MFTL:

> Protected land should contain viable, long-term habitat, encompassing ecosystem-level processes that lead to the formation of these habitats. The physical mechanisms attributed to the formation of sand dunes should be integrated into management plans. Protected land should include areas for source sand, wind and sand corridors, as well as the sand dune habitat and its associated shade plants.[215]

c. *Failure to incorporate feasible measures to avoid or reduce impacts on WBO*

As with mitigation to impacts to the DT and MFTL, the DEIS proposes acquisition of 78 acres of habitat as mitigation for impacts to the WBO.[216] The amount of acreage required for mitigation, however, is deficient. According to the California Burrowing Owl Consortium ("CBOC"), the amount of compensation habitat required depends on whether the habitat is occupied or unoccupied and contiguous or not contiguous with the disturbed habitat.[217] The proposed mitigation does not take into consideration these factors.

d. *Failure to incorporate feasible measures to avoid or reduce impacts on golden eagles*

The DEIS did not recommend mitigation to reduce impacts to golden eagle.[218] Without the inventory data from the recent golden eagle aerial surveys, one cannot conclude mitigation will reduce potentially significant Project impacts on golden eagles. Acquisition of desert tortoise and state waters within 10 miles of *potential* nesting sites for golden eagles does not necessarily mitigate Project impacts. To help stem the decline in eagle populations, acquisition lands need to be within the foraging territory of *actual* nesting sites.

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[215] Hollingsworth and Beaman, Mojave Fringe Toed Lizard, *supra*, p. 4.

[216] DEIS, p. 2-87.

[217] *Id.* at p. C. 2-86.

[218] DEIS, p. 2-90.

e. Failure to incorporate feasible measures to avoid or reduce impacts on rare plants

Without reliable information on the rare plant species that occur—and as a result, the level and types of Project impacts on those species—the DEIS cannot conclude proposed mitigation would reduce Project impacts to less than significant levels. A conclusion of this nature would rely on the presumption that all impacts can be mitigated to a less than significant level. Such a presumption is unrealistic for two reasons. First, it is difficult to predict the outcomes of surveys due to the new and unexpected discoveries that have been occurring in the desert (and thus the inability to pre-assign mitigation). Second, the flora of the Desert Floristic Province is poorly understood and therefore surveys may yield completely unexpected results that cannot be mitigated by standard conditions.

Although the DEIS attempts to analyze the impacts and formulate mitigation measures before adequate survey data are obtained, the analysis and mitigation may change after the additional survey efforts are better able to identify impacts to rare plants. The revised baseline data that makes up the affected environment must be shared with the public and the public should have the opportunity to comment. Without this information, the affected environment is inadequately defined in the DEIS.

f. Failure to incorporate feasible measures to avoid or reduce impacts on wildlife movement and connectivity

The DEIS concludes that the habitat acquisition requirements of BIO-12 and 21 would be sufficient to reduce the Project's impacts to wildlife movement and connectivity to less-than-significant levels. The analysis, however, does not provide any evidence to support this conclusion. Neither BIO-12 nor BIO-21 require the Applicant to purchase contiguous acreage for habitat, and neither measure requires the compensation habitat to provide wildlife movement function and value. Specific mitigation measures must be proposed to address the Project's substantial impacts to wildlife movement and connectivity.

The conclusion that no mitigation measures are available to address the Project's contribution to cumulative impacts to wildlife movement is incorrect and lacks any supporting evidence.[219] The Project could, for example, contribute funds

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[219] *See* DEIS, p. C.2-134.

for the purchase of conservation easements on private land that would provide wildlife connectivity between WHMAs and DWMAs.

g. Failure to incorporate feasible measures to avoid or reduce impacts from wildlife exposure to HTF soil remediation areas and evaporation ponds

The DEIS does not propose any mitigation measures designed to avoid or reduce the impacts to wildlife species that may be caused by land farming of HTF contaminated soil and operation of the recently proposed evaporation ponds.

Any body of water situated in this arid region will attract birds and terrestrial species. A complete discussion of the measures that will be taken to prevent bird and wildlife exposure to HTF land treatment units and evaporation ponds, ideally in the form of a monitoring and action plan, must be presented in the DEIS.

h. Failure to evaluate the impacts of herbicide use for weed abatement

The BLM must take a hard look at impacts associated with herbicide use for weed abatement. The DEIS recognizes that the Project would directly affect native vegetation by allowing the increase of invasive weeds, such as Sahara mustard, to spread in the disturbed areas.[220] Neither the Weed Management Plan submitted by the Applicant nor the DEIS describe the specific types of herbicides that would be used to control the weeds.[221] In addition, the Weed Management Plan identifies only Saharan mustard as a potentially noxious weed that must be controlled, but omits discussion of tamarisk, Russian thistle and Mediterranean grass, weed species identified as present in the Project area.[222]

The BLM must not approve use of herbicides unless and until specific studies have been conducted indicating that they are harmless. Herbicides that may be approved can still cause a cancer outbreak in humans and/or serious mutations in wildlife.[223] The BLM must identify which herbicides will be used and disclose any

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[220] *Id.* at pp. C.2-94 – C.2-95.

[221] *See id.* at p. C.2-170 [description of measure BIO-14]; Attachment to Response DR-BIO-100, Draft Weed Management Plan (Jan. 2010), pp. 17-18, 23, 25-29.

[222] *See ibid.*

[223] Cornett Comments, p. 14.

studies that prove the herbicides are harmless, or take a hard look at the Project's impacts to human health and biological resources.

B. Impacts to Air Quality

1. The DEIS Fails to Consider the Emissions from Changed and Newly Added Project Components and From an Expanded Daily Construction Schedule

Since the release of the DEIS, the Applicant has proposed using a concrete batch plant on-site during Project construction, rather than trucking concrete in from an off-site producer.[224] The operation of the batch plant will produce emissions that were not considered in the DEIS.

The Applicant has also added four evaporation ponds to the Project design.[225] These ponds will be used to process the Project's industrial wastewater. Evaporation from these ponds may result in the release of toxic contaminants, a possible impact the DEIS has failed to consider.

Unlike other chapters of the DEIS, the air quality analysis considered the air quality impacts that would result from constructing an 11.5 mile-long transmission line to the planned Red Bluff substation.[226] It's not clear from the air quality analysis, however, whether the associated access and spur roads for the transmission line were considered. The DEIS must be revised to describe and address all air quality emissions associated with constructing and operating the transmission line and associated roads.

The Applicant recently submitted a revised construction schedule that would result in additional daily construction emissions not considered in the DEIS.[227] The Applicant proposes to conduct concrete pours, some electrical work, and some welding at night to avoid high daytime ambient temperatures, and to conduct solar collector assembly work 24 hours per day in order to meet the construction schedule.[228] The Applicant claims that the most polluting activities (associated

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224 *See* Attachment D, Environmental Evaluation of Project Updates, pp. 1-3.

225 *See id.* at pp. pp. 3-4.

226 DEIS, p. C.1-16.

227 *See* Attachment D, Environmental Evaluation of Project Updates, pp. 12-13.

228 *See ibid.*

with heavy earthwork) would only occur during the day, but this limitation is not included as a condition of Project approval. If heavy earthwork and other polluting activities are conducted for longer periods each day than that assumed in the DEIS, Project construction will result in emissions that exceed those analyzed in the DEIS. Due to the accelerated schedule for Project approval and construction, the Applicant may be tempted to conduct other construction activities at night. As such, the DEIS should include measures limiting the construction activities that may be conducted beyond the 8-10 hour workday.

2. The Air Quality Model Did not Provide a Worst-Case Analysis Because it Focused on a Location Upwind from the Project

In responses to data requests from CEC staff, the Applicant claimed that the air quality model used to measure Project construction and operation emissions provides a "worst-case" analysis because it focused on Unit #1, a location the Applicant claimed was downwind from the locations where Project construction emissions will occur.[229] This assertion is incorrect, however, because the prevailing wind direction is from the west and north-west, not the south and south-east as the Applicant claims.[230] By focusing on the northwest quadrant of the Project site, the model fails to reflect the full amount of Project construction emissions.

3. The Project Does Not Comply with all LORS

As explained at considerable length in the CURE's comments regarding the Preliminary Determination of Compliance ("PDOC") issued by the South Coast Air Quality Management District (the "Air District"), the Air District's analysis of air quality impacts failed to use the correct methodology for calculating the volatile organic compounds (VOCs) that will be emitted from the HTF ullage and piping systems. Our comments regarding this issue, and the comments of Dr. Pless, are incorporated herein by reference.

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229 *See* Response to DR-AIR-10.

230 *See* DEIS, Appendix A to Soil and Water Report, Figures 8 and 9 [figures prepared by Applicant's consultant depicting prevailing wind direction from west and northwest].

4. Underestimation of HTF Ullage Tank and Piping System VOC Emissions

It appears that, like the PDOC, the DEIS underestimated HTF ullage tank and piping system emissions. The DEIS states that the HTF ullage tank vents and the HTF piping system would emit 1.90 tons/yr of VOCs.[231] As Dr. Pless explained in her comments regarding the PDOC, these emissions were calculated using a novel and incorrect procedure that departed significantly from the approach recommended by CEC staff, and consequently substantially underestimates Project-related VOC emissions. Indeed, the Applicant's methodology (accepted by the Air District) produces an emissions rate almost 10 times lower than the result produced by the recommended procedure. Had the recommended procedures been employed, the VOC emissions from the HTF ullage tank and piping system would increase from 1.90 tons/yr to approximately ***19 tons/yr***.

5. Failure to Consider all Pending Projects in Cumulative Impacts Analysis

The DEIS states that it considered projects within a 6-mile radius that were either under construction or permitted when conducting the analysis of localized cumulative impacts.[232] The preparers should have also considered pending projects that were reasonably foreseeable at the time the analysis was prepared.[233] By failing to consider pending projects, the preparers failed to consider the Project's contribution to localized cumulative impacts caused by the Chuckwalla Valley Raceway, the Chuckwalla Solar 1 project, the Genesis project, and the two pending enXco projects: each of these projects is within 6 miles of the proposed Project site and each will contribute substantially to cumulative air quality impacts.

6. Inadequate Discussion Of Mitigation Measures For Air Quality Impacts During Project Construction And Operation

The DEIS' discussion of available measures to mitigate air quality impacts is substantially incomplete, omitting mention of a wide variety of feasible, cost-effective technical solutions that other agencies routinely require developers of powerplants and other industrial facilities throughout the west to implement.

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[231] DEIS, Air Quality Table 9, p. C.1-19.

[232] DEIS, p. C.1-40.

[233] *See* NEPA Handbook, pp. 58-59.

a. Inadequate mitigation for construction vehicle emissions

The DEIS lists several mitigation measures to control emissions during project construction.[234] These measures are primarily directed at mitigating fugitive dust impacts. Only measure AQ-SC6 addresses exhaust emissions from construction equipment.

As explained further below, numerous reasonable and feasible mitigation measures are available to alleviate the environmental impacts of construction equipment exhaust emissions. These are routinely employed in powerplant construction in California and elsewhere. They include: (1) low-sulfur diesel fuel to limit emissions of VOCs, NOx, PM10, PM10 precursors, and toxic emissions; (2) fuel additives to improve engine efficiency; (3) use of low-emissions construction equipment; (4) post-combustion controls such as soot filters, oxidation catalysts, and oxidizing particulate traps; and (5) SCR. There are also a number of additional fugitive dust control measures that are routinely implemented throughout the country that the DEIS fails to identify or discuss.

b. Inadequate mitigation of fugitive dust emissions

Fugitive dust has long been a major problem in the arid southwest. Several agencies in the area have conducted comprehensive studies of methods to alleviate emissions of dust during construction and other activities, published the results in agency guidance, and promulgated regulations to control these dusts. The DEIS does not recognize any of this work, including the resulting best management practices for dust control. At the same time, the mitigation program proposed in the DEIS is inadequate because the measures are not enforceable, the proposed measure would reduce very little of the emissions, and all feasible mitigation measures have not been identified. Further, please note that the Record of Decision must include a monitoring and enforcement program for each mitigation measure that is a condition of project approval.[235] This information must be presented in the DEIS.

Further, there are a number of routinely implemented measures to mitigate fugitive dust emissions that are neither identified nor discussed in the DEIS. These include: (1) applying moisture to backfilled areas when not in use; (2) prewetting

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[234] DEIS, pp. C.1-45 – C.1-46 [descriptions of AQ-SC2 – AQ-SC4].

[235] 40 C.F.R. § 1505.2(c).

surface soils during clearing and grubbing; (3) prewatering during cut and fill activities; (4) preventing access to disturbed areas using fences or other barriers; and numerous other measures. The following section provides more comprehensive list of measures that other permitting agencies, including Clark County, Nevada, have imposed on construction projects.

c. Mitigation for Construction Air Quality Impacts

i. CARB-certified construction equipment

Both the U.S. EPA and CARB have established emission limits on new off-road engines. CARB-certified off-road engines are engines that are 3 years old or less at the time of use and which comply with these new low emission limits. This equipment is widely available in the construction fleet. The use of CARB-certified equipment should be required for this Project. For example, the SMAQMD and other agencies require the use of at least 20 percent CARB-certified off-road engines in the mix of construction equipment operating on-site, or alternatively, setting a NOx, ROG, and/or PM10 emission reduction goal for the construction fleet.

ii. Post-combustion Controls

Post-combustion controls, such as oxidation catalysts and particulate filters, are devices that are installed downstream of the engine on the tailpipe to treat the exhaust. These devices are now widely used on construction equipment and are capable of removing over 90% of the PM10, CO, and ROG from engine exhaust, depending on the fuel and specific engine. The most common and widely used post-combustion control devices are particulate traps (*i.e.*, soot filters), oxidation catalysts, and combinations thereof. The many variants of these devices have been identified, evaluated, and comprehensively reviewed by CARB[236] and others.[237]

All of these post-combustion controls are feasible for construction of this Project. Therefore, the air quality mitigation measures should be revised to require

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[236] California Air Resources Board, Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, October 2000; California Air Resources Board, Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines, October 2000.

[237] Manufacturers of Emission Controls Association, Demonstration of Advanced Emission Control Technologies Enabling Diesel-Powered Heavy-Duty Engines to Achieve Low Emission Levels, Final Report, June 1999.

the use of post-combustion controls on off-road equipment specifying target control levels.

d. Mitigation measures for Project operational impacts

A number of California air districts have identified numerous other feasible measures for commercial/industrial operations. Some of these additional measures, include:

- Use electrically or CNG-powered specialty equipment, *e.g.*, utility carts (BAAQMD);
- Use propane-powered specialty equipment, *e.g.*, forklifts, utility carts, etc. (BAAQMD);
- Use lighting controls and energy-efficient lighting (SLOAPCD, SCAQMD, SBAPCD, BCAQMD);
- Use energy-efficient low sodium parking lot and street lights (SLOAPCD, SCAQMD);
- Use light-colored roof materials (SCAQMD) and paint (SBAPCD) to reflect heat;
- Use concrete or other non-pollutant materials for parking lots instead of asphalt (SBAPCD);
- Pay an air quality mitigation fee;
- Secure emission offsets; and
- Reduce standard paving by 20%.

Further, some air districts recommend that large projects that cannot be fully mitigated with on-site measures should implement off-site mitigation measures. For example:

- Retrofit existing homes and businesses in the project area with approved energy conservation devices (SLOAPCD);
- Replace/repower school/transit bus with cleaner vehicles (SLOAPCD);
- Construct satellite work stations (SLOAPCD);
- Fund a program to buy and scrap older, high-emission vehicles (SLOAPCD);
- Contribute to an off-site TDM fund (VCAPCD);
- Repair smog-check waived vehicles (SLOAPCD);
- Introduce electric lawn and garden equipment exchange program (SLOAPCD); and

- Retrofit/purchase clean heavy-duty trucks, construction equipment, diesel locomotives, and marine vessels (SLOAPCD).

The BLM should consider incorporating the mitigation measures described above in order to address the Project's underreported construction and operation air quality impacts.

C. Impacts to Land Use, Recreation, and Wilderness

As part of the Federal Land Policy and Management Act of 1976 ("FLPMA"), Congress designated 25 million acres of southern California as the CDCA.[238] In establishing the CDCA, Congress declared that the California desert is a "total ecosystem that is extremely fragile, easily scarred, and slowly healed," and that it is a rich and unique environment with "historical, scenic, archaeological, environmental, biological, cultural, scientific, educational, recreational, and economic resources."[239] Congress also stated that "the use of all California desert resources can and should be provided for in a multiple use and sustained yield management plan to conserve these resources for future generations, and to provide present and future use and enjoyment. . . ."[240]

The DEIS fails to adequately describe or address the direct, indirect, and cumulative impacts to land use that will be caused by the Project's proposed amendment to the CDCA and multiple other amendments that will be required for the numerous energy projects in the region.[241] These solar thermal, solar voltaic, and wind energy projects will have direct impacts on wildlife species and their obligate habitat and will reduce wildlife habitat connectivity. These impacts directly conflict with goals and purposes of the CDCA, as amended in 2002 by the Northern & Eastern Colorado Coordinated Management Plan ("NECO").[242] For

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[238] 43 U.S.C. § 1781(c).

[239] *Id.* § 1781(a)(1)-(2).

[240] *Id.* § 1781(a)(4)

[241] *See* DEIS, p. C.6-24.

[242] As mandated by Congress, the CDCA is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality. *See* CDCA, As Amended, p. 5, available at http://www.blm.gov/pgdata/etc/medialib//blm/ca/pdf/pdfs/cdd_pdfs.Par.aa6cc747.File.pdf/CA_Desert_.pdf (as of June 27, 2010). "Congress directed BLM to prepare and implement a comprehensive, long-range plan for the management, use, development and protection of the public lands within the CDCA." BLM website regarding CDCA, available at: http://www.blm.gov/ca/st/en/fo/cdd/cdca_q_a.html (as of June 27, 2010).

example, the impacts to the threatened desert tortoise conflict with multiple CDCA and NECO policies designed to not only protect the survival of this species but promote its *recovery*.[243]

While the DEIS acknowledges some of these impacts, it does not grapple with them in the manner required by NEPA. Instead, the DEIS defers meaningful analysis to a "regional and coordinated effort aimed at preserving and enhancing large, intact expanses of wildlife habitat and linkages."[244] The CDCA and the NECO were products of such regional and coordinate efforts.[245] The NECO, for example, took years of analysis and policy debate to develop, but the goals of the NECO are being compromised by multiple amendments which each contribute to habitat fragmentation.

1. Inadequate Baseline for Measuring Project Impacts

The DEIS inconsistently describes the land use designation for the Project site. In the chapter concerning alternatives to the Project, the site is described as designated Multiple Use Class ("MUC") L (Limited Use), whereas in the chapter concerning Land Use, the site is described as within the MUC M (Moderate Use) category. The DEIS must be revised to consistently and accurately describe the MUC designation(s) for the Project site. The BLM must provide adequate notice to the public regarding Project impacts, but has not due to these errors in the DEIS.

Class L lands "are managed to protect sensitive, natural, scenic, ecological, and cultural resource values. They provide for generally lower-intensity, carefully controlled multiple uses that do not significantly diminish resource values."[246] In contrast, more intense uses are allowed on Class M lands, but all damage that results from the permitted use must be mitigated.[247]

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[243] *See* NECO Coordinated Management Plan/Final Environmental Impact Statement ("NECO CMP/FEIS"), July 2002, pp. 2-17 – 2-18, available at: http://www.blm.gov/ca/st/en/fo/cdd/neco.html (as of June 29, 2010).

[244] *Id.* at p. C.6-27.

[245] *See* NECO CMP/FEIS, July 2002, pp. 1-1 – 1-3.

[246] *See* http://www.blm.gov/ca/st/en/fo/cdd/cdca_highlights.html (as of June 27, 2010); see also CDCA, As Amended, p. 13.

[247] *Ibid.*

The proposed Project site is within two Multiple-species Wildlife Habitat Management Areas ("WHMAs").[248] The DEIS does not indicate whether a portion of the Project site is within a 2,300 acre area designated in the NECO as the "Chuckwalla Valley Dune Thicket Area of Critical Environmental Concern" or within the 3,632-acre Palen Dry Lake ACEC.[249] The DEIS must also clearly describe the protective land use designations both on the Project site and in the surrounding area.

As with other categories of impacts, the impacts to land use, recreation and wilderness cannot be adequately identified without complete surveys of the entire area that will be disturbed by the Project, including the transmission line corridor. The recent surveys along this corridor must be considered in a revised discussion of the Project's impacts to land use, recreation, and wilderness.

2. Inadequate Analysis of Direct and Indirect Impacts

As stated above, the Project site is located within areas designated MUC L or M. Unlike MUC I (Intensive), these land use designations restrict the intensity of development. The Project site may be within or adjacent to two ACECs established by the NECO. Because the proposed Project may conflict with the land use restrictions established by the NECO, these potential land use conflicts must be addressed in a revised DEIS.

The Project site is located directly between the Palen/McCoy Wilderness Area and the Chuckwalla Mountain Wilderness Area, two areas designated MUC C (Controlled) in the CDCA, and therefore subject to the highest level of protection under the NECO plan.[250] As discussed in the section regarding biological resources above, the Project will result in unmitigated impacts to wildlife connectivity, including connectivity between the Palen and Chuckwalla mountain ranges.

3. Inadequate Analysis of Cumulative Impacts

The DEIS concludes that some of the Project's contributions to cumulative impacts can only be addressed at a regional level. This approach to acknowledging and addressing the Project's significant contribution to cumulative impacts is

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[248] DEIS, p. C.2-14.

[249] *See* NECO CMP/FEIS, p. 4-21.

[250] *See* DEIS, pp. C.6-10 – C.6-11.

unacceptable. As stated repeatedly above, the Project must address its contribution to cumulatively considerable impacts caused by multiple pending large-scale renewable energy projects in the nearby vicinity and in the region. For example, the DEIS must address how the BLM's response to the current wave of renewable energy projects meets the recovery criteria for the DT, including the criteria that "[l]and management commitment is sufficient to ensure long-term protection of tortoise populations and habitat."[251] The DEIS must also address how the following objectives are satisfied by this Project and the other Projects in the region that will impact DT:

- Reduce tortoise direct mortality resulting from interspecific (e.g., raven predation) and intraspecific (e.g., disease) conflicts that likely result from human-induced changes in ecosystem processes.[252]

4. Inadequate Mitigation for Project Impacts

In lands designated Class M under the CDCA, "[a]ny damage, which permitted uses cause, *must be mitigated*."[253] Moreover, the NECO requires the BLM to "[m]itigate effects on tortoise populations and habitat outside DWMAs to provide connectivity between DWMAs."[254] While the DEIS states that BIO-12 will provide the necessary mitigation, there is no evidence that sufficient land is available to provide such connectivity.

D. Impacts to Cultural Resources

The analysis regarding the Project's impacts to cultural resources is not supported by substantial evidence. The DEIS acknowledges that additional surveys must be completed in order to reach conclusions regarding the Project's impacts and to propose effective and feasible mitigation measures to address such impacts.[255]

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251 *See* NECO CMP/FEIS, p. 2-17.

252 *Ibid.*

253 *See* CDCA, As Amended, p. 13; see also http://www.blm.gov/ca/st/en/fo/cdd/cdca_highlights.html (as of June 27, 2010).

254 *See* NECO CMP/FEIS, p. 4-21.

255 *See, e.g.*, DEIS, pp. C.3-1, C.3-86 – C.3-87 [acknowledging need for further surveys and studies to identify extent of cultural resources impacts and to formulate appropriate mitigation measures].

The incomplete analysis in the DEIS does reveal that the Project will adversely affect hundreds of cultural resources including ancient cremation zones, trails and village sites, and will directly block at least one major prehistoric trail. As discussed in a subsequent section, the DEIS failed to provide ANY mitigation for impacts to cultural resources and instead explained that a future consultation process would work out the details of a mitigation proposal.

1. Project Impacts to Pre-historic and Historic Resources

The discussion regarding the Project's construction-related effects is incomplete on its face. It includes, for example, the placeholder "(yet to be determined)" in the description of the various ground disturbing activities.[256]

The DEIS does not reach a conclusion regarding the Project's impacts to the Halchidhoma Trail and the possible designation of a Prehistoric Trails Network/Historic District.[257] Similarly, the DEIS fails to reach a conclusion regarding the Project's impacts to the DTC/C-AMA Cultural Landscape/Historic District.[258] These incomplete analyses constitute a failure to take the required "hard look" at Project impacts.

A 3,632-acre area adjacent to Palen Dry Lake has been designated an Area of Critical Environmental Concern ("ACEC"): the ACEC was established to protect cultural resources.[259] Native American artifacts have been observed on the former shoreline of what is now a playa. The DEIS does not analyze the Project's potential to significantly impact these cultural resources or the designated ACEC.

2. Project Impacts to Native American Traditional Cultural Properties

The DEIS did not disclose the significance of the area on and around the Project site to contemporary tribal members. The DEIS focused almost solely on archeological resources and failed to analyze traditional cultural properties, which are areas on and around the Project site that have importance to tribes and Native Americans today. More specifically, a "traditional cultural property" is a property, a place, that is eligible for inclusion on the National Register of Historic Places

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[256] DEIS, p. C.3-84.

[257] *Id.* at p. C.3-82.

[258] *Id.* at p. C.3-83.

[259] *See* CDCA, As Amended, Table 15, Areas of Critical Environmental Concern, p. 104.

because of its association with cultural practices and beliefs that are (1) rooted in the history of a community, and (2) are important to maintaining the continuity of that community's traditional beliefs and practices.[260]

The purpose of an EIS is to address any major federal action significantly affecting the quality of the human environment.[261] The definition of "human environment," as defined in the NEPA regulations, "shall be interpreted comprehensively to include the natural and physical environments and the relationship of people with that environment."[262]

Section 101 of NEPA declares it is a matter of national policy to preserve important historic, cultural, and natural aspects of our national heritage. Policy direction in BLM Manual 8100, section 8110.05D, further provides that BLM should "[i]ncorporate cultural resource considerations into all aspects of planning and decision making."

The cultural resources section of the DEIS fails to acknowledge the traditional cultural properties in and around the proposed action. Tribal members and other Native Americans have described significant non-archeological cultural resources within the Project boundaries and surrounding the Project.[263] These cultural resources include biological resources on the Project site that are sacred to local tribes and the impacts of the Project on sacred areas on or near the Chuckwalla and Palen Mountains. The Project may result in visual, audible, and atmospheric impacts to these sites.

These resources were not analyzed in the DEIS; in fact, the DEIS included no information about the direct, indirect or cumulative effects on potential traditional cultural properties. The BLM should conduct an ethnographic study and interviews with local Native Americans and tribal representatives to further refine the BLM's understanding of the importance of these potential traditional cultural properties. At a minimum, the scope of analysis in the DEIS must include areas where the Project would have direct, indirect and cumulative impacts on areas which could be directly impacted by views and sounds from the property.

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[260] National Register Bulletin 38.

[261] 40 CFR § 1502.1.

[262] *Id.* at § 1508.14.

[263] *See* Attachment J, Testimony of Alfredo Acosta Figueroa on Issues Concerning U.S. BLM Cultural Resources Data.

E. Hazardous Materials Impacts

1. The DEIS Fails to Adequately Analyze Hazards Associated with HTF

a. Inadequate evaluation of potential public health and safety hazards from HTF transport

As stated, the project will involve the transportation, storage, and use of substantial quantities of HTF, a known hazardous substance. HTF would likely be imported to the site by tanker truck from a major population center, likely from Southern California. Accidents involving tankers can be catastrophic, as indicated by the accident descriptions presented in Matt Hegemann's comments.

The discussion regarding impacts associated with decommissioning the Project does not address the potential impacts of transporting the HTF off the Project site. None of the mitigation measures concerning Hazardous Materials address transporting such materials from the Project site.[264] The DEIS must be revised to specifically address the severity of this potentially significant impact and the specific measures proposed to address this impact.

b. Insufficient analysis of toxic air contaminant emissions associated with Project equipment

The DEIS states that the only toxic air contaminant ("TAC") that would be emitted from the Project would be diesel particulate from emergency diesel-fueled engines.[265] This statement is not accurate. Later in the discussion regarding TAC emissions, the DEIS acknowledges that the Project will have TAC emissions from the auxiliary boilers, emergency fire water pump and generator engines, and HTF ullage system vent.

According to the Preliminary Determination of Compliance ("PDOC") issued by the SCAQMD, the TAC emissions from the Project will be greater than those reported in the DEIS. The DEIS may be underreporting these emissions.

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[264] *Id.* at p. C.4-21 – C.4-24.

[265] DEIS, p. C.5-4.

c. *Requirements for monitoring equipment fail to address a toxic component of HTF: benzene.*

As Mr. Hagemann states in his comments, the DEIS fails to analyze potential soil and groundwater contamination that could be caused by HTF leaks and by bioremediation of HTF in improperly lined land treatment units. The DEIS must be revised to address this potentially significant impact.

d. *The geographic scope for considering other projects in the cumulative impacts analysis is too narrow*

The DEIS concludes, without substantial evidence, that the geographic scope for considering other past, present, and foreseeable future projects in the cumulative health and safety impacts analysis is "within the project boundaries or within ½ mile of the project."[266] As discussed above, numerous similar solar thermal power projects are being proposed in the region.[267] Each of the projects will emit TACs similar to those emitted by the Project. The DEIS must consider whether the Project's incremental contribution to the overall increase of TAC emissions is cumulatively considerable.

e. *Inadequate discussion of feasible mitigation measures to minimize the likelihood of an accidental release*

Because the DEIS did not discuss the hazards of HTF transport, it did not discuss any mitigation measures for potential impacts associated with it. Several mitigation measures exist that are routinely implemented at power generating facilities in California and elsewhere. These include: (a) improving driver hiring and training; (b) improving vehicle inspection and maintenance procedures; (c) restricting delivery routes and times; (d) requiring more solidly built tanker trucks; (e) and improving emergency response. The DEIS should be expanded to include a discussion of these additional measures and recirculated for public review.

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[266] DEIS, p. C.5-26.

[267] For example, as the DEIS acknowledges, the Chuckwalla Solar I project would be approximately 2 miles from the Project site. *See id.* at pp. C.5-26 – C.5-27.

f. Inadequate discussion of measures to mitigate impacts of an accidental release after it occurs

As already stated, the consequences of an accidental HTF spill are potentially catastrophic. Fortunately, these can often be readily mitigated by reducing the exposed surface area of spilled HTF; using relief, recirculation, block and check valves; or by improving the tank design. Several other mitigation measures are available,[268] none of which was identified or discussed in the DEIS. The DEIS must be revised to identify and evaluate these and any other feasible mitigation measures.

2. The DEIS Fails to Adequately Analyze Hazards Associated with Former Military Use of the Site.

Although the DEIS identified unexploded ordinance ("UXO") in the Project area, and generally described the history of the DTC-CAMA, the BLM failed to take a hard look at potential health risks associated with previous military activities on the site.[269] Mr. Hagemann, an expert in hazardous materials, reviewed the DEIS with respect to hazards associated on the site from remnants of the military's use of the site in the 1940s. In his comments, he concludes that unevaluated significant impacts to construction workers and future site workers from UXO and hazardous debris may occur.[270] Those impacts include dermal contact and ingestion of dust with soils that may contain metals and chemicals at concentrations that are hazardous to human health.[271]

Mr. Hagemann recommends that the BLM conduct a Phase I Environmental Site Assessment to specifically evaluate these potential human health risks. If the Phase I Assessment finds the UXO and hazardous debris to represent potential human health risks, a Phase II Environmental Site Assessment should be conducted to include sampling of the debris.[272] To assess the Project's impacts

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[268] Center for Chemical Process Safety, Guidelines for Safe Storage and Handing of High Toxic Hazard Materials, 1988; Center for Chemical Process Safety, Guidelines for Design Solutions for Process Equipment Failures, 1998; Center for Chemical Process Safety, Plant Guidelines for Technical Management of Chemical Process Safety, 1992.

[269] *See* DEIS, pp. 13-10.

[270] Hagemann Comments pp. 9-10.

[271] *Id.*

[272] *Id.*

adequately, the BLM must conduct a Phase I Assessment and include the results in a revised DEIS that is circulated for public review.

F. Project Impacts to Drainage

1. Inadequate Analysis Impacts Caused by Drainage Facilities.

The description of the Project's impacts to numerous dry washes traversing the site is inadequate because the drainage facilities for the Project are currently being redesigned. In addition, the DEIS does not address modifications to natural drainage patterns that will be necessary for the transmission line access and spur roads. The BLM must revise the description of the drainage facilities and provide a complete analysis of the Proposed Action's impacts to natural drainage systems.

The information regarding modifications to natural drainage patterns that will occur is fundamental and is required to provide the public an opportunity to meaningfully compare the Proposed Action with the alternatives. For example, to compare alternatives, the public must know whether the Proposed Action would modify the same drainages as the Reconfigured Alternative and the revised Reduced Acreage Alternative. In addition, there may be other alternate site designs that would impact drainages less than the proposed Project and the alternatives considered in the DEIS.[273] Because desert washes provide valuable wildlife habitat, the BLM must consider alternatives that would reduce impacts to these washes.

The DEIS must also adequately describe what fill material the Applicant will use to modify the drainages.[274] If soil cement is used for bank stabilization and protection for transition and curve segments, the Project will significantly impact the ability of wildlife to utilize the surrounding area.[275] If the Applicant will use natural substrate (i.e. compacted earthen material along with rip rap), however, impacts to biological resources may be reduced.[276] It is not clear, however, that adequate compaction can be achieved using natural substrate.

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[273] *See* DEIS, pp. C.9-57 – C.9-62.

[274] *Id.* at p. C.9-49 [acknowledging requested information regarding drainage design and modeling information was not provided by applicant].

[275] *Id.*

[276] *Id.*

The BLM must provide the public with a complete and final Hydrology Report and Storm Water Pollution Prevention Plan ("SWPPP") before approving the Project. Information normally contained in these reports helps the public understand and assess the water table, the natural flow pattern onsite and offsite and the Applicant's measures to address flooding. Without the basic information contained in these reports, the public cannot meaningfully assess the Project's impacts.

The BLM's failure to provide accurate information on impacts to drainages precludes meaningful public input on the Proposed Action's effect on drainages and on alternatives to the Proposed Action. The BLM must provide this information so that it can take a hard look at impacts to the drainages and provide mitigation where feasible. Feasible mitigation measures include compensation to restore and enhance bioswales and downstream drainages.

2. *Failure to Consider Compliance with Section 1602 of the California Fish & Game Code*

The Project requires a streambed alteration agreement from the CDFG under Section 1602 of the Fish & Game Code. Under NEPA, the BLM's effects analysis must identify possible conflicts between the Project and State laws and regulations.[277]

The California Fish & Game Code requires project Applicants to obtain a streambed alteration agreement from the CDFG before substantially diverting, obstructing, or changing a river, stream, or lake.[278] A "stream" is defined as a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life.[279] This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation.[280]

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[277] 40 C.F.R. §§ 1506.2(d), 1502.16(c); NEPA Handbook p. 55.

[278] Cal. Fish & Game Code § 1602.

[279] Dep't of Fish & Game, A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607 (1994).

[280] *Id.*

The CDFG must issue a streambed alteration agreement before this Project can proceed. The proposed Project site contains several washes under the jurisdiction of the CDFG. Construction of the Project and the transmission line road will alter the natural flow patterns of these washes where concrete pads and structures are installed, and within the solar array field. Thus, development of the proposed Project will temporarily and permanently impact these washes. The Applicant submitted a Streambed Alteration Notification to the CDFG, but this document failed to identify the washes along the transmission line that will be impacted by the Project.[281] The CDFG must issue a streambed alteration agreement covering the entire Proposed Action before the Project Applicant impacts these drainage systems.

Because a streambed alteration agreement is required from the CDFG before modifications to the drainages can occur, the BLM must ensure that the Applicant complies with Section 1602 of the Fish & Game Code before approving the Project.[282] Failure to receive the necessary permits could jeopardize downstream drainages and wildlife, as well as violate California law. The BLM must revise the EIS to reflect and disclose compliance with the Fish & Game Code.

G. Impacts to Surface and Groundwater Resources

After the release of the DEIS, the Applicant submitted information regarding a proposed concrete batch plant that will be used on site during Project construction. This new Project component will increase the Project's construction water demands from approximately 1,440 af during the 3 year construction period to approximately 5,750 af.[283] The impacts to water resources caused by the increased Project construction water demand was, of course, not analyzed in the DEIS.

The Project will consume up to 300 acre-feet per year (ac-ft/yr), of fresh local groundwater during its projected 30-year life. The Applicant intends to further develop the groundwater resources of the aquifer underlying the Project vicinity. All this fresh, potable water will be permanently lost to evaporation.

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281 *See* Attachment C, Notification of Lake or Streambed Alteration, § 10, Project Description [describing preliminary site grading plan].

282 DEIS p. 2-19.

283 *See* Attachment D, Environmental Evaluation of Project Updates, pp. 1-2; *see also* DEIS, p. C.9-38.

Unfortunately, the DEIS' analysis of project impacts to surface and groundwater resources is as flawed as its analysis of other Project impacts.

1. Inaccurate Analysis Of Potential Impacts From Groundwater Pumping

a. Failure to address impacts to Colorado River flows and surface water rights

The DEIS acknowledges the project's potential to induce additional recharge to the Chuckwalla Valley Groundwater Basin ("CVGB") from Colorado River percolation, which in turn could reduce instream flows and affect existing surface water rights.[284] Rather than allow the Applicant to conduct a revised impact analysis using a refined model following Project approval, the BLM must now take a hard look at the Project's water supply.[285]

In March 2010, The Colorado River Board of California wrote to the CEC to inform the agency that the Applicant would likely need to acquire a contractual entitlement for the necessary construction and operation water requirements from the Metropolitan Water District of Southern California ("MWD") in order to avoid conflicts with senior water rights holders.[286]

It is thus manifestly foreseeable that project-related groundwater pumping from the aquifer will induce leakage from shallow zones that will necessarily be replenished by percolation from the Colorado River. Much of the Colorado's streamflow infiltrates into the alluvium, and much of this water is either transpired by plants or evaporated. By lowering water levels, groundwater pumpage results in diminished baseflows, increased floodflow infiltration, and potentially die-off of riparian habitat.

In 2008, the USGS prepared a report that clearly demonstrated that the "river aquifer" as stated in the 2006 Supreme Court Consolidated decree extends

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[284] *See* DEIS, p. C.9-39.

[285] *See ibid.*; *see also id.* at pp. C.9-106 – C.9-108 [mitigation measure Soil & Water 18, which would allow the Applicant to conduct a future analysis of Project impacts to water supply and potentially revise the requirements for mitigation].

[286] *See* Attachment K, letter from Executive Director of CRBC to CEC Project Manager, dated March 22, 2010, pp. 2-3.

into the tributary valleys of the Colorado River aquifer including the Chuckwalla Valley.[287] The USGS states:

> Ground water in the river aquifer beneath the flood plain is considered to be Colorado River water regardless of water levels. Water pumped from wells on the flood plain is presumed to be river water and is accounted for as Colorado River water.[288]

The concept of distance from the Colorado River had no bearing on whether the underlying groundwater was indicated as part of the "river aquifer." The USGS characterized the "river aquifer" as:

> The river aquifer consists of permeable, partly saturated sediments and sedimentary rocks that are hydraulically connected to the Colorado River so that water can move between the river and the aquifer in response to withdrawal of water from the aquifer or differences in water-level elevations between the river and the aquifer. The subsurface limit of the river aquifer is the nearly impermeable bedrock of the bottom and sides of the basins that underlie the Colorado River valley and adjacent tributary valleys, which is a barrier to ground-water flow.[289]

Consequently, any well in the CVGB is considered to be taking Colorado River water regardless of water level and are extracting water from the "river aquifer." As such, the Applicant is required to obtain a contractual entitlement to pump groundwater to meet its construction and operation water needs.

The foregoing analytic deficiencies must be corrected, and potential impacts to surface flows in the Colorado, which are foreseeable, must be thoroughly evaluated in the DEIS in order to comply with NEPA.

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[287] Wiele et al., Update of the Accounting Surface Along the Lower Colorado River, 2008, available at: http://pubs.usgs.gov/sir/2008/5113/sir2008-5113_text.pdf (as of July 1, 2010); *see also* http://pubs.usgs.gov/sir/2008/5113/ (as of July 1, 2010).

[288] *Id.* at p. 5.

[289] *Id.* at p. 6.

b. Failure to address impacts from groundwater overdraft

The DEIS fails to include an adequate discussion of potential indirect impacts from groundwater overdraft. These impacts, which include land subsidence, earth fissuring and potential interference with other wells, would worsen if development in the basin continues or increases beyond the project period.

In sum, the Project will result in long-term groundwater overdraft. This will interfere with and/or preempt other current and future beneficial uses of groundwater, and may induce land subsidence and earth fissuring. These impacts are not sufficiently discussed in the DEIS. The DEIS must therefore be substantially revised to include sufficient evaluation of the foreseeable impacts.

V. THE DEIS FAILS TO CONSIDER A REASONABLE RANGE OF ALTERNATIVES.

A. The Purpose and Need Statement is Arbitrarily Narrow and Promotes Private Interests

An EIS must briefly describe the underlying purpose and need to which the agency is responding in proposing the alternatives, including the Proposed Action.[290] The BLM's *NEPA Handbook* mandates that the purpose and need statement for an externally generated action must describe the BLM's purpose and need, not an applicant's or external proponent's purpose and need.[291] The "need" for the action is the underlying problem or opportunity to which the BLM is responding with the action.[292] The "purpose" is the goal or objective that the BLM is trying to reach.[293] Clearly distinguishing the purpose and the need clarifies for the public and decision makers why the agency is proposing to spend large amounts of taxpayers' money, while at the same time causing significant environmental

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[290] 40 C.F.R. § 1502.13.

[291] NEPA Handbook p. 35 (citing 40 C.F.R. § 1502.13).

[292] *Id.*

[293] *Id.*

impacts.[294] As recently repeated by the Ninth Circuit, "an agency cannot define its objectives in unreasonably narrow terms."[295]

The DEIS contains an arbitrarily narrow purpose and need statement that impermissibly promotes private objectives. The purpose and need statement states that the BLM's purpose and need for the PSPP is to respond to the application for the ROW.[296] This narrowly defined statement implies that BLM stands to gain nothing more than a rubber-stamped document at the end of this process. It is nonsensical to think that the BLM would spend taxpayer money and impact the environment for such an inconsequential result. While the introduction to the purpose and need statement recites statutes, regulations and orders that encourage the development of renewable energy on public lands, these sources of authority do not encourage the development of some parcels over others.[297]

B. Reasonable Alternatives Omitted from Analysis

Under NEPA, federal agencies must consider alternatives to their proposed actions as well as their environmental impacts.[298] The alternatives analysis has been called the "linchpin" of the Environmental Impact Statement.[299]

An EIS must "[r]igorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated."[300] It is "absolutely essential to the NEPA process that the decisionmaker be provided with a detailed and careful analysis of the relative environmental merits and demerits of the proposed action and possible alternatives, a requirement that courts have characterized as 'the

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294 Ronald E. Bass et al., The NEPA Book 89 (2d. ed. 2001).

295 *National Parks & Conservation Ass'n v. Bureau of Land Management* (2010) 2010 WL 1980717, 8 (9th Cir. 2010), quoting *City of Carmel-By-The-Sea v. United States Dep't. of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997).

296 DEIS p. B.2-11; *see also id.*, Executive Summary, p. 6 ("The BLM's purpose and need for the PSPP is to respond to [PSI's] application . . . for a right-of-way (ROW) grant. . . .").

297 *Ibid.*

298 40 CFR § 1502.14.

299 *Monroe County Conservation Council, Inc. v. Volpe* (2d Cir. 1972) 472 F.2d 693.

300 40 C.F.R. § 1502.14(a).

linchpin of the entire impact statement.'"[301] This is particularly true in cases where there may be "unresolved conflicts concerning alternative uses of available resources."[302]

The alternative discussion must include not only primary alternatives, *i.e.*, substitutes for the agency's proposed action that accomplish the action in another manner, but also secondary alternatives, which are means of carrying out the action in a different manner.[303] The range of alternatives to be discussed is governed by a "rule of reason." Agencies have a duty "to study all alternatives that appear reasonable and appropriate for study . . ., as well as significant alternatives suggested by other agencies or the public during the comment period."[304] Reasonable alternatives are those that may be feasibly carried out based on technical, economic, environmental, and other factors. **It is well established that an alternative is not infeasible merely because the project proponent does not like it or is not capable of implementing it.**[305] "The 'existence of a viable but unexamined alternative renders an environmental impact statement inadequate.'"[306]

Thus, if an EIS is prepared in connection with an application for a permit or other federal approval, the EIS must rigorously analyze and discuss alternatives that are "reasonable," *regardless of whether the proponent or applicant likes or is*

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[301] *NRDC v. Callaway*, 524 F.2d 79, 92 (2d Cir. 1975) (citation omitted); *see Silva v. Lynn*, 482 F.2d at 1285; *All Indian Pueblo Council v. United States*, 975 F.2d 1437, 1444 (10th Cir. 1992) [a thorough discussion of the alternatives is "imperative"].

[302] *See* 42 U.S.C. § 4332(2)(E); *California v. Block*, 690 F.2d 753, 766-767 (9th Cir. 1982).

[303] *See Methow Valley Citizens Council v. Regional Forester*, 833 F.2d 810 (9th Cir. 1987), *rev'd on other grounds*, 490 U.S. 332 (1989); *see also* Mandelker, *NEPA Law and Litigation* (2d ed., rel. 8, 2000).

[304] *Roosevelt Campobello Int'l Park Comm'n v. United States EPA*, 684 F.2d 1041, 1047 (1st Cir. 1982) (quotations omitted); *City of Carmel-By-The-Sea v. U.S. Dept. of Transp.*, 95 F.3d 892, 903 (9th Cir. 1996).

[305] *See* CEQ, *Forty Most Asked Questions Concerning CEQ's NEPA Regulations* (1981), question No. 2(a), 46 Fed.Reg. 18026, 18027 (March 23, 1981).

[306] *Resources Ltd. v. Robertson*, 35 F.3d 1300, 1307 (9th Cir. 1993), *quoting Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992); *see Grazing Fields Farm v. Goldschmidt*, 626 F.2d 1068, 1072 (1st Cir. 1980) [Even the existence of supportive studies and memoranda contained in the administrative record but not incorporated in the EIS cannot "bring into compliance with NEPA an EIS that by itself is inadequate"].

itself capable of carrying out a particular alternative. "Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant."[307] Courts have shown little reluctance in striking down EIS's that fail to include a thorough discussion of reasonable, less environmentally damaging alternatives.[308] Finally, please note that an EIS must include a discussion of "natural or depletable resource requirements *and conservation potential of various alternatives and mitigation measures.*"[309]

1. *Alternative Analysis Relies on Inaccurate Description of the Proposed Project*

As with other analyses in the DEIS, the comparison between alternatives relies on inaccurate information concerning the amount of acreage that would be disturbed by the Proposed project. The discussion regarding the Reduced Acreage Alternative, for example, states that the proposed Project would occupy approximately 2,740 acres, whereas other sections of the DEIS state that this area would be 2,970 acres or 3,899 acres.[310]

2. *Feasibility of Revised Reduced Acreage Alternative*

During the CEC workshops following the release of the DEIS, the applicant expressed concern regarding the feasibility of the Revised Reduced Acreage Alternative. Specifically, the Applicant's legal counsel stated that the Project may not be viable at the 375 MW generating capacity that could be achieved under the Revised Reduced Acreage Alternative. The DEIS does not address the economic feasibility of this preferred alternative. The applicant has not provided any other information and analysis demonstrating this alternative is infeasible. Thus, there is no substantial evidence in the record substantiating the claim that this alternative is infeasible.

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[307] Forty Most Asked Questions Concerning CEQ's [NEPA] Regulations at Question 2a.

[308] *See, e.g., Marble Mountain Audubon Society v. Rice*, 914 F.2d 179 (9th Cir. 1990); *Dubois v. U.S. Dept. of Agriculture,* 102 F.3d 1273 (1st Cir. 1996).

[309] 40 C.F.R. § 1502.16(f), emphasis added.

[310] *See*, e.g., SA/DEIS, Proposed Project, pp. B.1-1 [2,970 acres disturbed], B.2-16 [2,740 occupied by Units 1 and 2], Biological Resources, C.2-1 [3,899 acres disturbed], Health and Safety, C.5-21 [2,740 acres disturbed], C.9-3 [2,970 acres disturbed], C.12-14 [4.5 square miles].

3. The BLM Must Consider an Alternative Design that Reduces Impacts to Drainage Systems

The BLM must consider an alternative design that reduces impacts to drainage systems. As discussed above, the Project will impact the natural drainage systems that run through the Project site, which will in turn impact water quality and biological resources, as well as increase the potential for flooding on the Project site. The BLM should consider a site design that avoids, or significantly minimizes, these impacts.

4. The DEIS Failed to Seriously Consider Alternative Sites

The DEIS states "all site alternatives proposed to be located on lands not under the jurisdiction of the BLM are considered unreasonable by the BLM because none would accomplish the purpose and need for the proposed action, which is to respond to [PSI's ROW application]."[311] The BLM's decision not to consider alternate sites on private land is impermissible because it is based on an arbitrarily narrow purpose and need statement. The BLM may not adopt private interests to draft a narrow purpose and need statement that excludes alternatives that fail to meet specific private objectives.[312]

Yet, that was the result of the process here. The BLM must consider reasonable alternatives, even if the Applicant does not like the alternative or is incapable of implementing the Project on an alternative site.[313] Here, the only alternative location for the Project evaluated in the DEIS was the North of Desert Center location, but this alternative was rejected primarily because the parcels are owned by numerous landowners and would be more difficult to acquire.[314] (Ironically, while the DEIS admits that it is difficult to purchase private parcels for the purpose of acquiring sufficient acreage for the Project itself, it fails to admit that it would be difficult to acquire private parcels for the purpose of mitigating the Project's impacts to biological resources.)

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[311] DEIS, p. B.2-51.

[312] NEPA Handbook p. 50.

[313] *See* CEQ, Forty Most Asked Questions Concerning CEQ's NEPA Regulations No. 2(a) (1981).

[314] DEIS, p. B.2-49. Four other alternative sites were considered but not evaluated in detail. *Id.* at p. B.2-50.

Thus, as drafted, the DEIS violates NEPA's basic requirement to consider alternatives to the proposed Project. Numerous environmental organizations have recommended criteria to consider when selecting land for siting renewable energy projects.[315] The proposed site for the Project does not satisfy any of these criteria. The proposed Project site is not ideal for long-term energy generation. This particular site lies within undisturbed desert habitat that contains untouched and intact environmental resources. As discussed at length in the preceding sections, the site is characterized by desert scrub vegetation, desert washes, sand dunes, and sand fields. Special-status species, such as the desert tortoise, were observed on the site. In addition, many prehistoric and historic sites have been recorded on and around the Proposed Action site.

The BLM should consider an alternate site on disturbed land. In the desert to the northwest of the Project site, for example, there is an extensive amount of abandoned farmland that would facilitate long-term energy generation while reducing the Project's impacts on environmental resources.[316] These areas have existing infrastructure and are near roads and existing power lines. The BLM must evaluate siting the Proposed Action on these alternate sites, or risk failing to evaluate a viable alternative.

5. *The DEIS Improperly Eliminated Alternative Solar Energy Technologies From Consideration*

The DEIS includes a basic discussion regarding Fresnel solar technology.[317] Despite the smaller footprint required for this technology, and the corresponding reduced environmental impacts, this technological alternative to the proposed solar thermal project was improperly rejected without adequate review.

The DEIS does not adequately consider distributed solar technologies as viable alternatives to the proposed Project. Because such technologies could be installed in urban and other developed areas that have already been disturbed, they would have substantially fewer environmental impacts.

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[315] *See* Attachment L, Renewable Siting Criteria for California Desert Conservation Area.

[316] *See* Attachment M, Map: Abandoned Farmland – Eastern Riverside County, Coachella Valley Assoc. of Governments.

[317] DEIS, pp. B.2-58 – B.2-59.

6. *The DEIS Must Consider The Above Alternatives Regardless of The Applicant's "Preference"*

Lest there be any lingering belief that the applicant's desires dictate the range of alternatives that NEPA requires be discussed in an EIS, we wish to state emphatically that this is **not** the case under applicable law. The fact that the CEC and BLM are acting in permitting roles, rather than initiating the project themselves, in no way limits the extent of their obligations under NEPA. CEQ and the courts have repeatedly declared that the duty to discuss alternatives in an EIS is no different when the action is initiated by a Federal agency or by private parties.[318] The agencies here must therefore consider all alternatives that are reasonably related to the project and evaluate them in the EIS.

In this case, the project's purpose and need could be fully satisfied by an off-site alternative or by a technological alternative that requires less acreage and resources. Each of these approaches is feasible, economic, and will minimize or avoid potentially significant impacts. Under NEPA, it is imperative that they be evaluated in detail irrespective of the applicant's preference.

VI. CONCLUSION

The DEIS fails as an informational document because it fails to establish the Project setting, it does not fully and fairly describe the Proposed Action, it provides incomplete analysis of some Project impacts and wholly omits discussion of a number of other potentially significant environmental impacts, and it fails to provide a reasonable range of alternatives to avoid or mitigate the Project's adverse impacts. The DEIS must be revised to fully describe the project setting, the Project, the impacts from the Project, mitigation and alternatives; and the revised DEIS should be circulated for public review and comment, as required by NEPA. We respectfully urge the BLM to do so prior to taking any action of any kind on the Applicant's pending federal permit applications.

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[318] CEQ, *Guidance Regarding NEPA Regulations*, 58 Fed.Reg. 34263 (1983), available at: http://ceq.hss.doe.gov/nepa/regs/1983/1983guid.htm (as of July 1, 2010).

Please do not hesitate to call if you have any questions or require any further information in support of these comments.

Sincerely,

Jason W. Holder

JWH:bh

Attachments

ATTACHMENT A

James W. Cornett — Ecological Consultants

June 30, 2010

Jason W. Holder
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037

Subject: Palen Solar Power Project -- Draft Environmental Impact Statement

Dear Mr. Holder:

Per your request, I have reviewed the Draft Environmental Impact Statement (hereinafter the SA/DEIS) for the Palen Solar Power Project (hereinafter the "PSPP") which would be located on public lands managed by the Bureau of Land Management (hereinafter the "BLM"). My review focuses on the Biological Resources analysis of the SA/DEIS. My qualifications to perform this review include thirty years experience as a professional California desert ecologist, hundreds of protocol desert tortoise surveys, and published papers on fringe-toed lizards. I have both prepared and reviewed the biological resources sections of environmental documents. My professional resume is attached hereto.

My comments on the SA/DEIS follow.

INTRODUCTORY COMMENTS

The Palen Solar Power Project (PSPP) offers Southern California a much needed clean and renewable source of energy. The creation of the facility, however, can be expected to result in significant adverse impact to biological resources in the region. Though there are some adverse impacts that can be mitigated to a level of insignificance, there are several impacts that cannot be mitigated. The Staff Assessment/Draft Environmental Impact Statement (SA/DEIS) for the PSPP acknowledges some but not all of the significant unmitigable impacts that the PSPP would cause.[1]

Direct adverse impacts to the officially Threatened desert tortoise (DT), sensitive Mojave fringe-toed lizard (MFTL) and sensitive desert wash environments (DDWW) will be adverse, significant, and not adequately mitigated both on the project site itself as well as in the general region. With regard to the DT, this is primarily because it is highly unlikely that thousands of acres of appropriate compensatory habitat in the Chuckwalla

[1] Staff Assessment and Draft Environmental Impact Statement, Palen Solar Power Project, Application for Certification, March, 2010 (09-AFC-7) CEC-700-2010-007 (SA/DEIS), Executive Summary, pp. 16-17.

Valley can be acquired. The inability to identify compensatory habitat also applies to mitigation for the MFTL but is compounded by the inability of the SA/DEIS or the Project Proponent to assess indirect impacts to the lizard's habitat. In short, the SA/DEIS does not include any evidence demonstrating there is adequate, private compensatory land in the region available for mitigation of impacts to not only the DT, but the MFTL, western burrowing owl (WBO), and other special-status species.

In several instances the ability to assess potential impacts on listed and sensitive species and habitats has been compromised by inadequate or inappropriate data-gathering methods and faulty data analysis. Based upon my examination of field conditions and data from the project site, survey transects for DT were too widely spaced, searches for rare plants were not sufficiently comprehensive, and focused surveys for the sensitive MFTL were lacking. The analysis of field data regarding the DT, western burrowing owl (WBO) and rare plants failed to adequately analyze variations in precipitation from year to year and, with regard to the DT, the significance of a long-term decline in numbers. As a result, impacts to certain listed and sensitive species could not be determined or were minimized.

Indirect effects resulting from the PSPP are significant in the number of sensitive species affected, expanse of offsite acreage potentially altered, and impacts at the ecosystem level. Of particular note is the absence in the SA/DEIS of a regional analysis of the significance of the Desert Dry Wash Woodland habitat within the project boundaries. In addition, there is no analysis of potential impacts to species, habitats and ecosystems as a result of the application of toxic compounds that are intended to be used to suppress dust and control weeds.

LISTED AND SENSITIVE SPECIES – Desert Tortoise

As stated in the SA/DEIS for the PSPP, desert tortoise populations within California are listed as Threatened by both the state and federal governments.[2] Nonetheless, the applicant has applied for a "take" of Threatened tortoises within the project boundaries.[3] The applicant also urges changes to proposed mitigation measures that would substantially diminish and compromise the level of protection afforded this species.

The applicant's arguments in favor of granting a take permit and adopting diluted mitigation measures essentially embrace the position that (1) there are few, if any, tortoises on the project site and that (2) poor habitat is to blame for the inability to find live tortoises. These arguments are not supported by evidence.

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[2] Staff Assessment and Draft Environmental Impact Statement, Palen Solar Power Project, Application for Certification, March, 2010 (09-AFC-7) CEC-700-2010-007 (SA/DEIS), Executive Summary, p C.2-1.

[3] Application for the California Endangered Species Act Section 2081 (B) Incidental Take Permit and Revised Desert Tortoise Technical Report (including fall 2009), January, 2010.

(1) Though only two active burrows were found within the initial project boundaries in 2009, the spring 2010 surveys found three live tortoises within the power line corridor which is now part of the disturbance area.[4] Four additional tortoises were observed in the buffer area.[5] Since no tortoise surveys were conducted within the original project boundaries during the spring of 2010, no one knows how many tortoises might be present one year later in 2010.

(2) No zone of influence surveys were conducted in either 2009[6] or 2010.[7] No one knows how dense the tortoise population may be from the original disturbance area boundary to ¾ of a mile beyond the boundary, the distance of the closest offsite transect.

(3) The take application states that "two active DT burrows were found" during the 2009 tortoise surveys.[8] Active means the burrow is in use and that it should be assumed that tortoises are within the project boundaries. Studies by Woodbury and Hardy demonstrate that up to 23 tortoises may occupy a single burrow.[9] An active burrow can be used by more than one tortoise.

(4) There was no measureable precipitation in January of 2009, usually the wettest month of the year in the California deserts. Based upon long-term data, there was also markedly below average precipitation for the entire year.[10] Tortoises are known to reduce or cease activity when food resources are in short supply as a result of below average precipitation.[11] Tortoises on and near the site may have been less active in the spring of 2009 and, therefore, would be less likely to be observed as compared with a year of above average precipitation.

(5) I conducted a site visit on June 18, 2010, and found that in and near washes visibility was obstructed by dense vegetation. Visibility was also obstructed across open flatlands because of dense skeletons of Sahara mustard (*Brassica tournefortii*) that were present. The biologists who conducted the tortoise surveys walked transects at intervals slightly in

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[4] Preliminary Results, Desert Tortoise Spring 2010 Surveys, Figure 1.

[5] Ibid. Figure 1.

[6] Palen Solar Power Project Biological Technical Report, Riverside Co., California, August, 2009, page 34.

[7] Survey Approach and Methodologies for the Solar Millennium Parabolic Trough Palen Solar Power Project 2010, p. 2.

[8] Application for the California Endangered Species Act Section 2081 (B) Incidental Take Permit and Revised Desert Tortoise Technical Report (including fall 2009), January, 2010, page 12.

[9] Woodbury, A.M. and R. Hardy. 1948. Studies of the desert tortoise, *Goperhus agassizii.* Ecological Monographs 18:145-200.

[10] Precipitation records for five localities at the Boyd Deep Canyon Research Center, Colorado Desert, California. Available at http://deepcanyon.ucnrs.org/weather_data.htm.

[11] Ernst, C.H. and J. E. Lovich. 2009. *Turtles of the United States and Canada.* The John Hopkins University Press, Baltimore, Maryland, p. 551.

excess of 32 feet in 2009[12] and at 30 feet in 2010.[13] The Report indicates that the 1992 Survey Protocol was followed.[14] The Protocol, however, says that in addition to walking transects at 30-foot intervals, "In some locations belt transects less than 30 feet wide may be appropriate."[15] The protocol description further states that "If the project area contains locations with vegetation or topography that obscures or reduces that surveyor's ability to see tortoise sign at distances of up to 15 feet on the ground, the width of the survey should be reduced to 10 feet." My site visit indicated that across half the site vegetation obscured the ground to such a degree that evidence of tortoise presence could easily go undetected by even the most observant biologist at 15 feet. Therefore, surveys should have been conducted at 20-foot, rather than 30-foot intervals through washes and areas of heavy concentration of Sahara mustard plants. In short, due to inadequate survey techniques it is probable that much evidence of tortoise presence went undetected.

(6) Related to the above deficiency, is the fact that approximately half of all tortoise survey field time was conducted in the early morning when tortoises would have been in burrows or beneath dense vegetation and around midday when tortoises would have been hidden beneath dense vegetation.[16] Hidden tortoises are very difficult to detect and can be easily missed.

(7) The report minimized the significance of evidence of tortoise presence found within the project boundaries. For example, is spite of the presence of much ground-obscuring vegetation, 18 desert tortoise shell remains were found within the project's original disturbance area in 2009 (even more tortoise shell remains were found in previously unsurveyed areas during subsequent 2010 surveys). Because live tortoises had been observed in the area along with numerous tortoise burrows, the most logical assumption was that origin of the fragments was from the project site. Yet the report authors sought a less logical explanation: "The DT bone fragments observed on site are probably from carcasses that washed down to the BRSA over time from adjacent higher elevations where DT populations are larger."[17] This assumption requires that the shell fragments be carried several miles to the project site during a flash flood, the fragments remain intact during such a violent event and most importantly, the fragments would not be buried under alluvium but be completely exposed on the surface. Furthermore, it should be mentioned that no statistically valid evidence has been provided indicating desert tortoises are actually more abundant south of the project site.

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[12] Palen Solar Power Project Biological Technical Report, Riverside Co., CA, August, 2009, page 34.

[13] Survey Approach and Methodologies for the Solar Millennium Parabolic Trough Palen Solar Power Project 2010, p. 2.

[14] Field Survey Protocol for Any Non-Federal Action That May Occur within the Range of the Desert Tortoise, U.S. Fish & Wildlife Service, 1992, page 6.

[15] Ibid.

[16] Palen Solar Power Project Biological Technical Report, Riverside Co., California, August, 2009, Attachment 3, Field Data Sheets.

[17] Palen Solar Power Project Desert Tortoise Technical Report, page 13.

(8) In the desert regions of California desert tortoise habitat is primarily defined by the presence of friable soils suitable for the construction of burrows.[18] Using this criterion, the entire project site is suitable habitat.[19] I agreed with the report finding on this issue as a result of my site visit of June 18, 2010. Although some portions of the site are more richly vegetated than others, I consider large portions of the project site to be excellent habitat with both appropriate soil characteristics and vegetation. The observation that "ephemeral plant production is higher and longer lasting" elsewhere in the region reveals an ignorance of the shift in ephemeral plant production at varying elevations.[20] Ephemeral blooms are not longer lasting at higher regions but simply later in the season. Had the biologists been on the site in January they would have observed the initial flowering of spring ephemerals. Additionally, the observation in the report that "the BRSA does not currently provide the groundwater necessary to support a long-lived annual plant population that could support a large onsite population of DT"[21] is supported by no data and, again, fails to recognize a seasonal shift in ephemeral plant production rather than a decrease in plant production.

(9) No attempt is made to explain the report findings in light of recurring droughts in recent years.[22] Recurring droughts in close succession can result in significant tortoise mortality yet this was not considered in explaining why there were few tortoise sightings during the surveys.

In summary, the inability of survey personnel using inadequate field methods to locate tortoise evidence is not justification for indicating the project site is low quality or even moderate quality tortoise habitat as stated in the SA/DEIS.[23] The only thing known is that an unknown number of desert tortoises occupy the project disturbance area and that most of the project site appears to be excellent tortoise habitat. It would appear that a conclusion was reached prior to the analysis.

Mitigation for Impacts to Desert Tortoise Habitat

From the outset let me state that I am in complete disagreement with implication made in the SA/DEIS[24] and the statement made in the Incidental Take Permit Application[25] that

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[18] Ernst, C.H. and J. E. Lovich. 2009. *Turtles of the United States and Canada.* The John Hopkins University Press, Baltimore, Maryland p.542-543.

[19] Desert Tortoise Technical Report, Solar Millennium Palen Solar Power Project, Riverside County, California, January 2010, p. 16.

[20] Ibid., p. 17.

[21] Ibid., p. 18.

[22] Precipitation records for five localities at the Boyd Deep Canyon Research Center, Colorado Desert, California. Available at http://deepcanyon.ucnrs.org/weather_data.htm.

[23] SA/DEIS, p C.2-63.

[24] SA/DEIS, p C.2-1.

[25] Application for the California Endangered Species Act Section 2081 (B) Incidental Take Permit and Revised Desert Tortoise Technical Report (including fall 2009), Jan., 2010, p. 10.

the project site is low-quality desert tortoise habitat and, therefore, not deserving of a maximum replacement mitigation ratio of 5 acres acquired for each acre lost. The rational for determining the low-quality-habitat determination is presented in the SA/DEIS[26] and elucidated in the ADTTP.[27] According to the U.S. Fish & Wildlife Service,[28] desert tortoise critical habitat consists of six primary constituent elements with regard to habitat quality:

1. Sufficient space to support viable populations for movement, dispersal, and gene flow.
2. Sufficient quantity and quality of forage species and the proper soil conditions to provide for the growth of such species.
3. Suitable substrates for burrowing, nesting, and overwintering.
4. Burrows, caliche caves, and other shelter sites.
5. Sufficient vegetation for shelter from temperature extremes and predators,
6. Habitat protected from disturbance and human-caused mortality.

The Application concedes that items 3, 4, and 5, are present. As a result, I will only discuss the qualities claimed to not be present on the site: items 1, 2, and 5.

#1 The ADTTP asserts there is insufficient space to support viable tortoise populations for movement, dispersal and gene flow. This conclusion is reached in spite of the fact that the SA/DEIS and BRTR indicate there are significant, unavoidable impacts to this site characteristic.[29] The BRTR asserts Interstate 10 isolates the bulk of the project site from critical tortoise habitat to the south. However, the *Wildlife Movement and Desert Tortoise Habitat Connectivity study* commissioned by the Applicant indicates there are numerous freeway underpasses suitable for wildlife crossing including three adjacent to the project site.[30] The idea of freeway underpasses functioning as movement corridors was first advanced in the SA/DEIS.[31] Furthermore, on my site visit of June 18, 2010, I found no impediments to dispersal to the north or east of the project site. Suitable tortoise habitat extends continuously from the project site to potential habitat against the Palen Mountains to the north and Chuckwalla Valley to the east. Only to the west are there dispersal barriers in the form of agricultural plots. However, even these do not form a complete barrier to tortoise movements from east to west and vice versa. In

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[26] SA/DEIS, C.2-74.

[27] Application for the California Endangered Species Act Section 2081 (B) Incidental Take Permit and Revised Desert Tortoise Technical Report (including fall 2009), Jan., 2010, p. 13.

[28] Draft revised recovery plan for the Mojave population of the desert tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, California and Nevada Region, Sacramento, 2008, California, p. 11-12.

[29] SA/DEIS, p C.2-63, and Palen Solar Power Project Biological Technical Report, Riverside County, California, August, 2009, page x.

[30] Wildlife Movement and Desert Tortoise Habitat Connectivity report dated May 14, 2010, page 2.

[31] SA/DEIS, p. C.2-82.

summary, the project sites offer important connectivity to tortoise habitat in all compass directions.[32]

#2 There is an implication in the SA/DEIS[33] and statement in the ADTTP[34] that there is insufficient quantity and quality of food resources on the PSPP site for foraging tortoises. However, there was no attempt to measure quality and quantity of forage variables. Instead vague reference is made to a lack of water (presumably precipitation, runoff, and/or groundwater) though there were no measurements of these variables made on the project site. Although most ephemeral plant species had dried up in June, 2010 when I visited the site, it was clear over most of the project site that there had been abundant ephemeral growth as I counted up to a dozen plant skeletons per square yard. Apparently there was also considerable ephemeral growth in 2009, sufficient to conduct a rare plant survey in the spring of that year.[35]

#6 The Incidental Take Application asserts the project site is not protected from disturbance and human-caused mortality. However, I found very little human impacts to the project site during my site visit. What impacts I did find were extremely minor. Although the project site lies near Interstate 10 only a miniscule portion of the site actually comes in contact with it. The "vehicles commonly parked in this area"[36] appear to be trucks confined wholly an extremely small area adjacent to the freeway off ramp. I found two examples of trash dumping, both decades old. With regard to domestic dogs on the site I saw none and find it difficult to believe that dogs from the agricultural areas would, or even could, move onto the project site with sufficient regularity to have even the smallest impact on fauna.

The Applicant argues that because only a few live tortoises were found on the project site and because it lacks three of the six criteria said to be essential that for tortoise presence, replacement habitat should be at the level of one-half acre for each of the 3,945.8 acres lost as a result of the installation of the Palen Solar Power Project.[37] (The SA/DEIS requests one acre of mitigation habitat for each acre lost, a 1:1 ratio.)[38] However, as I have argued above, desert tortoises are currently living on the site and most likely in numbers greater than indicated in the Desert Tortoise Technical Report. Numbers may be temporarily depressed because of (1) mortality resulting from recent, recurring

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[32] See Figure 2, Application for the California Endangered Species Act Section 2081 (B) Incidental Take Permit and Revised Desert Tortoise Technical Report (including fall 2009), January, 2010.

[33] SA/DEIS, pp. C.2-74 – C.2-77.

[34] Application for the California Endangered Species Act Section 2081 (B) Incidental Take Permit and Revised Desert Tortoise Technical Report (including fall 2009), Jan., 2010, p. 14.

[35] Palen Solar Power Project Biological Technical Report, Riverside Co., CA, August, 2009, p. 32.

[36] Application for the California Endangered Species Act Section 2081 (B) Incidental Take Permit and Revised Desert Tortoise Technical Report (including fall 2009), Jan., 2010, p. 15.

[37] Ibid., p. 37.

[38] SA/DEIS, pp. C.2-2.

drought and (2) as stated in the Application "due to various factors, including the spread of a fatal respiratory disease; increases in raven populations that prey on juvenile tortoises; mortality associated with roads and off-highway-vehicle use; and fragmentation."[39]

Because the Project Site is (1) clearly tortoise habitat, (2) that the tortoise carrying capacity of the site may be either high or low but cannot be determined due to the unreliability of survey data as well as recent temporary adverse impacts to tortoise populations, and (3) because the desert tortoise has been officially listed as a Threatened species by both state and federal governments (and thereby deserving of maximum protection) the mitigation ratio should be the maximum: 5 acres acquired for each of the 3,945.8 acres of tortoise habitat lost as a result of the Palen Solar Power Project.[40] Both the SA/DEIS and the ADTTP accept this ratio for that portion of the project site that lies within Chuckwalla Desert Critical Habitat Unit because the CDCRU contains six Primary Constituent Elements (PCEs).[41] Based upon my analysis, however, the PSPP site clearly contains all six of these elements as well.

Acquisition of Tortoise Mitigation Habitat in the Region

Under my recommendation, the Applicant would be required to purchase 19,729 acres of habitat in the region currently occupied by the desert tortoise. Under the Applicant's recommendation, 1,972.9 acres of tortoise habitat would be purchased from private landowners. Either scenario, in order to offer effective mitigation, must first identify privately owned potential replacement habitat. The location of potential replacement habitat is necessary here in order to demonstrate that the proposed mitigation is feasible and that it will actually work as advertised. Replacement habitat must also be currently occupied by desert tortoises, which is the only way to demonstrate that it is suitable replacement habitat. Not only must the replacement habitat be privately held and demonstrated to be currently occupied by desert tortoises, the site must be owned by a willing seller. To insure that the habitat can and will actually be acquired, the sale of the property must be in escrow pending project approval.

The Applicant has, thus far, has been unable and unwilling to demonstrate that suitable (tortoise occupied) replacement habitat in the region is available for his figure of 1,972.9 acres, let alone the recommended figure of 19,729 acres.[42] An inability to locate and acquire suitable mitigation habitat will result in a significant unmitigated adverse impact.

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[39] Application for the California Endangered Species Act Section 2081 (B) Incidental Take Permit and Revised Desert Tortoise Technical Report (including fall 2009), Jan., 2010, p. 9.

[40] Ibid., p. 36.

[41] SA/DEIS, p. C.2-74.

[42] Palen Solar I, Objections and Notice of Inability to Respond to CURE's Data Requests, May 25, 2010.

Cumulative Impacts to Desert Tortoise Habitat

There are dozens of alternative energy projects presently being constructed or in the planning process in the California deserts and in known tortoise habitat. Considered together, the total loss of tortoise habitat may easily exceed 100,000 acres in the California deserts alone.[43] Even though the desert tortoise is an officially Threatened species, it is now facing the greatest assault on its habitat in the history of the United States. This threat alone requires a maximum amount of replacement habitat for each and every project proposed within its range and on tortoise-occupied lands.

SENSITIVE SPECIES – Mojave Fringe-toed Lizard

The Mojave fringe-toed lizard (MFTL), *Uma scoparia*, is considered a Species of Special Concern by the California Department of Fish & Game and a Sensitive Species by the Bureau of Land Management.[44] As a result of these classifications, CEQA requires that the Applicant mitigate impacts to the lizard to a level of insignificance.[45]

Nothing resembling a protocol survey was conducted for the MFTL even though some protocol survey parameters exist for this species.[46] Observations on the project site, therefore, were incidental.[47] Nonetheless, during the 2009 spring surveys, 112 incidental observations were recorded within the PSPP disturbance area and dozens of additional sightings were recorded in the BRSA. In 2010, field surveyors recorded a total of 388 incidental observations.[48] Additionally, almost half the site (approximately 1,735 acres) is considered habitat for the MFTL.[49]

As stated in the biological report, "disruption of the dune ecosystem, including source sand, wind transport, or sand transport corridors, poses a threat to the habitat needed for MFTL. Preservation of sand dune ecosystems, including their source sand and sand corridors, is necessary for the long-term survivorship of Aeolian sand specialists such as

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[43] Palen Solar Power Project Biological Technical Report, Riverside Co., California, August, 2009, p. 128; see also Preliminary Spring 2010 Survey Results Corrected and Preliminary Impact Calculations for Biological Resources, dated May 27, 2010 (Corrected Preliminary Spring 2010 Survey Results), Table 3.

[44] Palen Solar Power Project Biological Technical Report, Riverside Co., CA, Aug., 2009, p. vi.

[45] California Environmental Quality Act, 1970, Appendix G. CEQA Guidelines.

[46] Cablk, M.E. and J.S. Heaton. 2002 Nov. Mojave Fringe-Toed Lizard surveys at the Marine Corps Air Ground Combat Center at Twentynine Palms, California and nearby lands administered by the Bureau of Land Management. California: Marine Corps Air Ground Combat Center. Report M67399-00-C-0005. 115 p.

[47] Palen Solar Power Project Biological Technical Report, Riverside County, California, August, 2009, page 82.

[48] Corrected Preliminary Spring 2010 Survey Results, Table 3.

[49] Palen Solar Power Project Biological Technical Report, Riverside County, California, August, 2009, Figure 11.

fringe-toed lizards."[50] The authors of the biological report further state that "loss of occupied breeding and foraging habitat is considered to be a significant impact if left unmitigated since this habitat is declining in availability in the region."[51]

Resolving this issue might be relatively straightforward if purchasing compensatory replacement habitat was all that was necessary. However, the issue is compounded because there will be significant indirect impacts to fringe-toed lizard habitat beyond the area of disturbance. As stated in the biological report:

> *"The installation of wind fencing is likely to disrupt source sand, wind transport, or sand transport corridors that are important to MFTL habitat in the dune ecosystem, resulting in an indirect impact to the species. In addition, the potential degradation or loss of habitat resulting from indirect impacts to this species would be significant if left unmitigated because similar or higher quality habitat is not common in the vicinity of the Project site. These indirect impacts would potentially impact offsite MFTL breeding habitat or burrows and adjacent foraging habitat."*[52]

The SA/DEIS goes even further by concluding that these indirect impacts caused by the PSPP cannot be mitigated.[53]

The level of impacts to the habitat of the MFTL is not known. No formal study of sand transport in the region around the BRSA has been conducted and, apparently, none are planned. (The *Aeolian Sand Mitigation Summary Report* prepared by Miles Kenney is completely inadequate. It is a crude estimate of what might happen and how the issue might possibly be resolved and is based on observations from completely different environments.[54]) That there will be adverse impacts is not in dispute. When I visited the site on June 18, 2010, I found suitable MFTL habitat along most of the northern boundary of the disturbance area as well as the entire eastern boundary. This assessment supports the continuity of habitat suitability shown in Figure 11 of Dr. Kenney's report.[55] It would appear that indirect impacts to MFTL habitat offsite could be substantial. Mitigation, therefore, would need to offset not just the loss of MFTL within the disturbance area but also large tracts of land along the northern and eastern boundaries of the project site.

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[50] Ibid., p. 83.

[51] Ibid., p. 119.

[52] Ibid.

[53] SA/DEIS, pp. 2-69.

[54] Aeolian Sand Mitigation Summary Report, Palen Solar Power Project prepared by Miles D. Kenney and dated May 14, 2010.

[55] Palen Solar Power Project Biological Technical Report, Riverside Co., CA, August, 2009, Figure 11.

Mitigation for Impacts to MFTL Habitat

In an attempt to mimic the natural movement of blowsand after construction of the PSPP, the Applicant proposes to mechanically transport wind-deposited sand along the 30-foot-tall fence at the northern and western edges of the PSPP site downwind to the eastern edge of the site.[56] The wind would then blow the mechanically deposited sand deeper into the Chuckwalla Valley. The assumption is that a constant supply of sand to the east of the Project site will maintain suitable habitat for populations the MFTL offsite. The mechanical movement of sand and grading of offsite habitat would be done on a "frequent" basis and for the life of the project.[57]

The frequent use of heavy equipment to accomplish this task notwithstanding, the plan is, at best, an experiment. As stated in the sand mitigation report, previous studies involved "agricultural regions" and "shoreline beaches."[58] No mention is made of projects in desert environments. This fact along with the lack of any comprehensive study of wind patterns in the Chuckwalla Valley, make any sand replenishment program very risky for the continued, offsite existence of the MFTL. The Applicant apparently desires that the PSPP be allowed to proceed in the hope that the sand program will work and that dune and hummock habitat to the east will not stabilize.

Realistically, there seem two viable alternatives that can resolve the issue of offsite damage to MFTL habitat: (1) Scale back the project footprint so the project does not intrude upon MFTL habitat. This would also reduce if not eliminate the project acting as an impediment to wind-carried sand, or (2) Acquire approximately 4,000 acres of privately held active dune and hummock habitat offsite. This acreage reflects the direct loss of aeolian habitat within the site boundaries as well as a comparable area of offsite habitat. As with the desert tortoise, suitable habitat (occupied by MFTL and connected or nearly connected to other habitat areas known to be occupied), would need to be located and willing sellers identified.

The Project Applicant is already faced with the acquisition of up to 19,729 acres as mitigation for impacts to the desert tortoise. The acquisition of another 4,000 acres of habitat as mitigation to impacts to MFTL cannot be piggy-backed onto tortoise mitigation. The lizard lives on a loose, unconsolidated sand substrate. The tortoise resides on compact soils that will not collapse as a tortoise digs its burrow. In both cases suitable habitat available for sale has not been identified. (A letter prepared by William Graham stating that there are thousands of acres of suitable MFTL habitat for acquisition is of no value since it is not known if the habitat is occupied by MFTL, possesses similar

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[56] Draft Aeolian Sand Mitigation Summary Report, Palen Solar Power Project, Riverside County, CA

[57] Ibid., p. 4.

[58] Ibid., p. 2.

functions and values offered by the habitat present onsite, or even if the land is available for sale.[59])

A reduced footprint alternative to the Applicant's proposal is described in the *Staff Assessment and Draft Environmental Impact Statement*.[60] Referred to as the "Reduced Acreage Alternative," this alternative plan would dramatically reduce impacts to the MFTL and its habitat. It pulls most site development to the south and west, avoiding the primary aeolian deposits shown to support a population of the MFTL. It would, of course, substantially reduce or even eliminate the need to acquire compensatory mitigation habitat elsewhere.

SENSITIVE SPECIES – Plant Species

Ribbed Cryptantha and Harwood's Milkvetch

Based upon the data presented in the BRTR[61] and 2010 Plant Survey Results[62] there will be significant impacts to the ribbed cryptantha and Harwood's milkvetch. Both of these species are closely associated with the areas of loose sand that dominate the northeastern half of the project site. Both of these are considered sensitive species and require mitigation under CEQA. The arguments against relying upon the experimental sand replenishment program as mitigation in favor of the Reduced Acreage Alternative apply both to these two sensitive plant species as well as to the MFTL.

Coachella Valley Milk Vetch

After examining three freckled milkvetch subspecies from the project region, Mr. Andy Sanders decided that they were not the Coachella Valley milkvetch subspecies that has been listed as endangered by the USFWS. Participating agencies, therefore, elected to not conduct focused surveys for the Coachella Valley milkvetch in 2010. This decision was in error. The specimens examined by Mr. Sanders did not come from the PSPP site and Mr. Sanders acknowledged that additional examination might result in him changing his finding.[63] Furthermore, although Mr. Sanders is an excellent field taxonomist, he has never published a peer-reviewed taxonomy paper on the Coachella Valley milkvetch. His opinion is helpful but not definitive. Electing to not do a focused survey for an endangered plant species based upon such limited information is a serious oversight that must be corrected.

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[59] Letter dated May 14, 2010, written by William Graham and sent to Ms. Alan Solomon in response to questions raised at the CEC Workshop held on April 16, 2010.

[60] SA/DEIS, p. B.2-1 – B.2-2, C.2-105 – C.2-107.

[61] Palen Solar Power Project Biological Technical Report, Riverside Co., CA, August, 2009.

[62] Preliminary Spring 2010 Survey Results Corrected and Preliminary Impact Calculations for Biological Resources, dated May 27, 2010.

[63] Ibid., p. 8.

Sensitive Plant Surveys in Fall

There are several sensitive ephemeral plant species surveys that appear only in late summer and fall and that may occur on the PSPP site. To date there have been no fall plant surveys. Since impacts to sensitive plant species are considered significant under CEQA, at attempt should be made to conduct such surveys. Until such an attempt has been made, the SA/DEIS is incomplete.

IMPACTS TO DESERT DRY WASH WOODLAND

The Project Applicant proposes to eliminate 256.7 acres of sensitive Dry Wash habitat including 133.1 acres of a sensitive plant community referred to as Desert Dry Wash Woodland.[64]

My site visit on June 18, 2010, indicated that a number of ancient ironwood trees (*Olneya tesota*) are located within Desert Dry Wash Woodland habitat within the project boundaries. Some of these trees are likely to be hundreds of years old, and a few might have an age exceeding 1,000 years. A survey should be conducted to determine whether or not such ancient trees are present. If they are, they should be preserved in place.

The Desert Dry Wash Woodland present on the PSPP site is certainly among the densest stand of ironwood trees in California. In size and density it may also be the finest example of Desert Dry Wash Woodland dominated by ironwood anywhere in the California Deserts. The possible uniqueness of this stand may be a result of an unusually large watershed as a result of (1) the concentrating of flows from the Chuckwalla Mountains to the south via a few freeway culverts, (2) the expanse of the Chuckwalla Mountains themselves (probably the largest isolated drainage in the Colorado Desert), and (3) rapidly leveling topography north of Interstate 10 that allows runoff to spread over a large area near the center of the PSPP site, and (4) a near absence of competitors in the form of blue palo verde (*Cercidium floridum*) and smoke trees (*Psorothamnus spinosus*). Some effort should be made to determine the significance of the site ironwood forest with respect to other areas of ironwood concentration. If it is found to be truly unique, then it should be preserved on site since there could be no comparable compensatory mitigation lands.

If it is determined that impacts to the Dry Wash and Desert Dry Wash Woodland communities must be mitigated to a level of insignificance through the acquisition of replacement habitat, the ratio should be the maximum allowed under existing rules and regulations. The mitigation measure must also include specific performance standards, such as no net loss of habitat function and value, to ensure the replacement habitat actually mitigates the loss of the Desert Dry Wash Woodland onsite.

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[64] Palen Solar Power Project Biological Technical Report, Riverside Co., California, August, 2009, p. 110.

USE OF CONTAMINENTS

The SA/DEIS states that both chemical dust control agents and weed eradication compounds will be used.[65] The use of chemical dust control agents or weed eradication compounds should be prohibited unless independent field studies have been done indicating the chemicals are harmless to wildlife.[66] Since it is highly unlikely that such studies have been done, the use of such chemicals should be strictly prohibited.

The Weed Management Plan (WMP)[67] contains over 50 pages describing the kind of weeds that may be present on the Project site, the importance of qualified staff in the use of toxic chemicals, and the importance of proper handling and application of herbicides. However, it says nothing of the actual qualifications needed by personnel, how the chemicals should be handled or how they should be applied. Less than a single page is allocated to what should be done in case of a toxic chemical spill. On that page it lists the equipment needed in case of a spill and includes such things as "bucket, dust pan, and a shovel." [68] The WMP says absolutely nothing with regard to what is to be done if chemicals are misapplied or misused. The comprehensiveness of the WMP is probably best summarized in the statement below:

"The following general precautions will be implemented for pesticide application: It is the responsibility of the pesticide user to observe all directions, restrictions, and precautions on pesticide labels. It is dangerous, wasteful, and illegal to do otherwise."[69]

In other words, so long as everyone reads the directions on the label and knows that he or she will be blamed if they don't, there will be no problem with herbicides or other toxic chemicals. This is naïve at best and intentionally misleading at worst.

If the weed problem cannot be controlled manually through the use of weed wrenches, hoes, shovels and hand pulling,[70] then a finding should be made that the introduction and spread of weed species as a result of the Project is a significant, adverse, and unavoidable impact.

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[65] SA/DEIS, pp. C.2-95 – C.9-36; see also Draft Weed Management Plan.

[66] Ibid., pages B.1-9, C.2-170.

[67] Draft Weed Management Plan, Palen Solar Power Project, prepared by AECOM, January, 2010.

[68] Ibid., p. 33.

[69] Ibid., p. 28.

[70] Ibid., p. 23-25

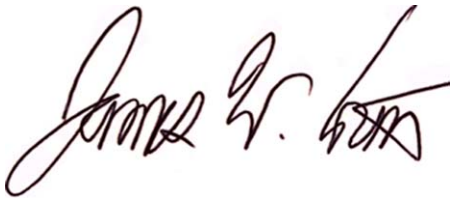
CONCLUSIONS

I find it difficult to conceive that the Project Applicant can locate adequate compensatory mitigation habitat in the immediate region of the PSPP site. If this is the case, consideration may need to be given to the acquisition of habitat beyond the immediate region.

Based upon impacts to the MFTL and Desert Wash Woodland, serious consideration should be given to the Reduced Acreage Alternative discussed in detail in the SA/DEIS.[71] This alternative would generate nearly as much energy as the proposed project (375 MW or 75%), avoids most of the MFTL habitat and also avoids the primary Desert Dry Wash Woodland occurring within the project boundaries. There is also some avoidance of desert tortoise habitat as well. The Reduced Acreage Alternative could be improved even further if all project acreage were pushed as far south as the initially proposed boundaries would allow.[72]

This concludes my current comments regarding the findings and recommendations in the SA/DEIS, BRTR, and subsequent biological studies and findings completed in 2010.

Sincerely,



James W. Cornett

[71] SA/DEIS, p. B.2-16.

[72] Ibid., Alternatives Figure 1.

JAMES W. CORNETT - CURRICULUM VITAE - 2010

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M.S., Biology, California State University at San Bernardino, 1980

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Director of Natural Sciences, Palm Springs Desert Museum, 101 Museum Drive, Palm Springs, California 92263, 760-325-7186.

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Curator of Natural Sciences, Palm Springs Desert Museum

September, 1976 - December, 1979
Assistant Curator of Natural Science, Palm Springs Desert Museum

September, 1975 - June, 1976
Natural Science Instructor, Palm Springs Desert Museum

January, 1973 - Present
Environmental Columnist (weekly), Desert Sun-Gannett Newspapers, P.O. Box 2734, Palm Springs, California 92263.

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January, 1973 - June, 1974
Assistant Naturalist (part-time), The Living Desert, 47900 Portola Avenue, Palm Desert, California 92260, 760-346-5694.

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Bureau of Land Management Colorado Desert Advisory Committee
California Botanical Society
California Native Plant Society
Ecological Society of America
Herpetologists League
International Palm Society
Joshua Tree National Park Association, Board Member
Southern California Academy of Sciences
Southern California Botanists
Southwestern Naturalists' Society
Western Field Ornithologists

BOOKS, ARTICLES AND PEER-REVIEWED PUBLICATIONS
Written by James W. Cornett

2010
Wildlife of The Southwest Desert, third edition. Nature Trails Press, Palm Springs, California.

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2009
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July 1, 2010

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Subject: Comments on the Palen Solar Power Project -- Draft Environmental Impact Statement

Dear Mr. Holder:

Per your request, I have reviewed the Staff Assessment/Draft Environmental Impact Statement (hereinafter the SA/DEIS) for the Palen Solar Power Project (hereinafter the "PSPP") which would be located on public lands managed by the Bureau of Land Management (hereinafter the "BLM"). My review focuses on the Hazardous Materials, Waste Management and Worker Safety analyses of the SA/DEIS.

My qualifications to perform this review include over 25 years of experience in the assessment, cleanup, and regulation of hazardous waste. A summary of my education and experience is attached to this testimony as Attachment 1. My comments on the SA/DEIS, as follow, are based on my review of the SA/DEIS and my own investigations and analysis.

I. Introduction

I have been working for the California Unions for Reliable Energy ("CURE") as a consultant on the Application for Certification ("AFC") for the Palen Solar Power Project ("Project" or "PSPP") since the data adequacy phase. I have reviewed numerous documents and have conducted my own investigations and analyses regarding the Project's potential environmental and health and safety impacts. I have found that the SA/DEIS fails to adequately predict the severity of spills of hazardous materials and fails to provide for adequate response and monitoring of the spilled material and the chemical degradation products. The SA/DEIS also fails to plan for an adequate evaluation of potential unexploded ordnance at the project site.

II. Failure to Estimate Annual and Reasonably Foreseeable Spill Volumes

The Project proposes to use parabolic mirror solar trough technology. The SA/DEIS states that PSPP would circulate 1,300,000 gallons of Therminol VP-1 heat transfer fluid (HTF) through a piping system to generate high pressure steam.[1] This is the same technology and the same HTF used at the Luz Solar Energy Generating Stations (SEGS) III through IX facilities Kramer Junction, California.[2]

Past HTF spills at the SEGS facilities have generated significant quantities of contaminated soil and the generation of liquid waste. For example, a July 27, 2007 HTF spill of 30,000 gallons (more than the capacity of a backyard swimming pool) resulted in the offsite transport of 6,408 cubic yards of impacted soil for disposal (Attachment 2). Numerous other large spills have occurred at the SEGS facilities.

The SA/DEIS does require, in Condition of Certification HAZ-4, the use of isolation valves to limit the volume of a spill of HTF to 600 gallons.[3] However, no drawings or design specifications are included in the SA/DEIS to evaluate if this requirement is attainable.

The SA/DEIS states that PSPP will include a land treatment unit (LTU) to bioremediate or land farm soil contaminated from releases of HTF.[4] The SA/DEIS estimates that 1,500 cubic yards of HTF-contaminated soil would be sent each year to the LTU.[5] The SA/DEIS does not state the capacity of the LTU nor is the capacity of the LTU stated in supporting documents, including the Application for Certification.

The SA/DEIS provides no analysis to support the estimate that no more than 1,500 cubic yards of HTF-contaminated soil would need to be treated per year in the LTU. Additionally, no attempt is made in the SA/DEIS or supporting documentation to quantify a reasonably foreseeable maximum spill volume and to identify measures that would be taken to respond to such a spill, including testing, transport, and disposal of the contaminated soil and of the spilled HTF in excess of the capacity of the LTU.

Failure to substantiate the annual estimate of HTF-contaminated soil and to identify a worst-case scenario is a significant shortcoming of the SA/DEIS. Large spills, on the order of tens of thousands of gallons as documented at SEGS may also occur at PSPP and could overwhelm the capacity of the LTU that is proposed to treat contaminated soil. For example, two past spills at SEGS generated large volumes of contaminated soil: a May 1999 spill of 21,000 gallons which generated 2,000 cubic yards of HTF-contaminated soil and the July 2007 spill of 30,000 gallons which generated more than 6,500 cubic yards of HTF-contaminated soil (Attachment 2).

Spills of HTF are likely to generate significant amounts of hazardous waste at PSPP, potentially in excess of the capacity of the LTU, as evidenced by records of spills at the analogous SEGS

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[1] SA/DEIS, p. B.2-34
[2] http://en.wikipedia.org/wiki/Solar_Energy_Generating_Systems
[3] SA/DEIS, p. C.4-22
[4] *Id.* at p. B.1-7
[5] *Id.* at p. C.13-16

facilities. The SA/DEIS makes no provisions for treatment or offsite disposal of contaminated soils that would exceed the LTU capacity. The SA/DEIS states only that 10 cubic yards of contaminated soil per year would require offsite disposal as hazardous waste.[6]

A revised SA/DEIS must be prepared to state the capacity of the LTU and to substantiate the annual estimates of HTF-contaminated soil that could be effectively treated in the LTU. A revised SA/DEIS must be prepared to identify reasonably foreseeable scenarios that would estimate maximum spill volumes of HTF and the amount of contaminated soil that would be generated by such spills.

III. Conditions of Certification are Inadequate to Mitigate Spills of Heat Transfer Fluid

The SA/DEIS defers the establishment of a concentration for HTF-contaminated soils that would define whether the waste is hazardous or non-hazardous. Condition of Certification WASTE-9 states:

> The project owner shall submit to the Compliance Project Manager (CPM), BLM Authorized Office (AO) and Department of Toxic Substances Control (DTSC) for approval the applicant's assessment of whether the HTF contaminated soil is considered hazardous or non-hazardous under state regulations. HTF-contaminated soil that exceeds the hazardous waste levels must be disposed of in accordance with California Health and Safety Code (HSC) Section 25203. HTF-contaminated soil that does not exceed the hazardous waste levels may be discharged into the land treatment unit (LTU).[7]

Because the concentration that would define whether HTF-contaminated soil is hazardous has yet to be established, the impact of such spills on the environment and the necessary response to such spills cannot be predicted at this time. The SA/DEIS must be revised to specifically define the concentration of HTF contamination that would result in hazardous waste. Condition of Certification WASTE-10, as proposed in the SA/DEIS, states:

> The project owner shall ensure that all accidental spills or unauthorized releases of hazardous substances, hazardous materials, and hazardous waste are documented and remediated, and that wastes generated from accidental spills and unauthorized releases are properly managed and disposed of in accordance with all applicable federal, state, and local requirements.[8]

WASTE-10 is inadequate because the concentration that would establish whether a spill is hazardous has not been established. Because the concentration of hazardous waste has not been established, appropriate spill response cannot be specified in the SA/DEIS. A condition of certification should be included in a revised SA/DEIS to establish the concentration at which point soils contaminated with HTF would be considered hazardous. Without a hazardous waste criterion for HTF in soils, impacts cannot be adequately predicted, and response plans cannot be

[6] *Id.* at p. C.13-17
[7] *Id.* at p. C.13-32
[8] *Id.* at p. C.13-33

formulated to address spills. Without this information, it is impossible to find that the potential impacts caused by HTF spills will be mitigated to less-than-significant levels.

IV. Plans for Field Response to HTF Spills are Inadequate

A condition of certification must be prepared to identify specific measures to respond to spills of HTF, including field testing, staging of contaminated soils, and measures to address liquid HTF wastes that can be reasonably anticipated on the basis of experience at the SEGS facilities. The SA/DEIS states only that cleanup and temporary staging of HTF contaminated soils shall be conducted in accordance with a plan, an Operation Waste Management Plan, prepared as a requirement of Condition of Certification of WASTE-8.[9] The Plan is to include:

> a detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications; management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to ensure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans; information and summary records of conversations with the local Certified Unified Program Agency and the Department of Toxic Substances Control regarding any waste management requirements necessary for project activities. Copies of all required waste management permits, notices, and/or authorizations shall be included in the plan and updated as necessary; a detailed description of how facility wastes will be managed and any contingency plans to be employed, in the event of an unplanned closure or planned temporary facility closure; and a detailed description of how facility wastes will be managed and disposed upon closure of the facility.

WASTE-8, by simply requiring a plan, in insufficient in anticipating adequate response to HTF spills which include free liquids. At ambient temperatures, the HTF is of a liquid consistency at temperatures above 54 degrees Fahrenheit.[10] As at the SEGS facilities, when spilled, the HTF will form wax-like piles of free standing liquids on the ground surface.[11] The piles are scooped up or are vacuumed in cleanup efforts documented at the SEGS facilities. The SA/DEIS makes no provisions for the management of the free standing liquids following a spill.

Additionally, the SA/DEIS makes no provisions for sampling HTF-contaminated soil at the point of the spill origin. The SA/DEIS states only that cleanup and temporary staging of HTF-contaminated soils shall be conducted in accordance with the approved Operation Waste Management Plan required in Condition of Certification of WASTE-8.[12] The SA/DEIS does not specifically provide for the handling of contaminated soil or contaminated HTF product which may be considered a hazardous waste at the point of the spill's origin. Further, movement of contaminated soil without testing prior to placement in the LTU may result in transport and

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[9] *Id.* at C.13-32
[10] *Id.* at p. C.4-7
[11] *See* Attachment 2
[12] SA/DEIS, p. C.13-33

placement of hazardous waste which is prohibited by state law, as discussed further in section VIII below.

As noted above, the Operation Waste Management Plan is to be prepared in the future and is thus not included in the SA/DEIS or other supporting materials; therefore, the adequacy of the response plans for HTF spills cannot be evaluated. The Operation Waste Management Plan, to include a corrective action plan for cleanup of spills of HTF-contaminated soils, should be prepared for evaluation in a revised SA/DEIS. The Operation Waste Management Plan should identify a numeric cleanup standard for HTF-contaminated soils to ensure the adequacy of cleanup in protecting human health and the environment at the point of spill origin. The plan should also include sampling procedures, cleanup goals, and methods for long term monitoring.

V. The Presence of Benzene as an HTF Degradation Product in Vapor and Soil May Put Workers and the Environment at Risk

Benzene is identified as a degradation product of Therminol VP-1.[13] However, benzene is not identified in the SA/DEIS as a potential soil and groundwater contaminant and, because of this oversight and lack of mitigation, workers and the environment may be at risk from releases of HTF to soil.

The SA/DEIS states that because of the viscous and insoluble nature of HTF, it is not likely to mobilize from the soil downwards to the water table.[14] While major components of HTF may be relatively immobile, benzene is mobile in the subsurface and may therefore contaminate underlying soil and groundwater. The SA/DEIS fails to consider benzene as a degradation product of the HTF in the subsurface and therefore fails to consider benzene as a potential soil and groundwater contaminant.

The SA/DEIS also fails to consider potential health impact from benzene exposure to workers who respond to HTF spills. Personnel who respond may be exposed to benzene vapors from the spilled HTF and from vapors that originate from HTF-contaminated soil, both at the spill origin and in the LTU. Additionally, workers may be exposed to benzene through dermal contact with the HTF.

Benzene is a known human carcinogen.[15] Without proper precautions and protective equipment, including respirators and appropriate gloves and clothing, workers who respond to the spills may be exposed to benzene while breathing the vapor or when touching contaminated soil. Additionally, workers who tend to the HTF-impacted soil in the LTU may be at risk from inhalation of vapors and from dermal contact without precautions.

Condition of Certification WORKER SAFETY-2 only requires plans to be prepared and submitted to the CPM, to include an Operation Injury and an Illness Prevention Plan Hazardous Materials Management Program.[16] This condition improperly defers the formulation of effective

[13] Response to Data request DR-PH-176, p. PH-4
[14] SA/DEIS, p. B.2-41
[15] http://www.atsdr.cdc.gov/tfacts3.html
[16] SA/DEIS, p. C.14-30

mitigation that would protect worker safety from the hazards posed by HTF constituent elements, including benzene.

Measures to ensure that HTF components and byproducts, including benzene, do not pose a risk to worker safety and the subsurface environment must be prepared and incorporated into the appropriate plans. These plans must be included in a revised SA/DEIS to ensure an opportunity to review the adequacy of the protective measures.

VI. Analytical Methodology for Testing HTF-Contaminated Soil is Inappropriate

The SA/DEIS identifies EPA Method 8015 to be used in testing HTF-contaminated soil or another method to be reviewed and approved by regulatory agencies and the CPM.[17] EPA Method 8015 is not an appropriate analytical testing methodology for the detection of benzene.[18] Given that benzene is a known HTF degradation product, a method to detect benzene should be specified in the SA/DEIS for the analysis of benzene in HTF-contaminated soil.

At the proposed Abengoa solar thermal facility, the Lahontan RWQCB staff determined that EPA Method 8015 was not appropriate as the sole analytical method for Therminol VP-1.[19] For soil testing at the LTU at Abengoa, the Lahonton RWQCB required analysis using EPA Method 1625B for HTF and Method 8260 for volatile degradation products of HTF such as benzene and toluene.

The main ingredients of Therminol VP-1, biphenyl and diphenyl oxide, are not considered to move readily through soil whereas benzene is known to move rapidly through soil. Therefore, monitoring for the presence of benzene with EPA Method 8260 is critical to determine if a release has occurred from the LTU. Appropriate analytical methodology must be incorporated into the SA/DEIS as a condition of certification.

VII. A Groundwater Monitoring Program has not been Prepared to Detect Releases from the LTU

The SA/DEIS or supporting materials provide no information about a groundwater monitoring well network that will be needed to ensure that releases of HTF and related contaminants, including benzene are detected and addressed. At other large solar projects undergoing licensing review by the CEC, groundwater monitoring well networks are detailed in a Report of Waste Discharge (ROWD), to be submitted to the Regional Water Quality Control Board.[20] No ROWD has been submitted for the PSPP.

Instead, the SA/DEIS states that a ROWD may be required by the Colorado River RWQCB and that PSPP will file the ROWD if required.[21] Given that other projects included a ROWD, and

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[17] *Id.* at p. C.13-33
[18] See for example http://www.caslab.com/EPA-Method-8015B/
[19] http://www.energy.ca.gov/sitingcases/abengoa/documents/others/2010-02-25_HTF_Conditions_From_James_Brathovde_TN-55665.pdf
[20] See CEC web site (http://www.energy.ca.gov/siting/solar/index.html) for ROWDs for the Beacon Energy Solar Project and the Genesis Solar Energy Project
[21] SA/DEIS, p. C.9-74

given the potential for groundwater contamination from HTF-contaminated soils in the LTU, a ROWD must be prepared and included in a revised SA/DEIS. The ROWD must be submitted for concurrent review by the RWQCB to ensure that monitoring provisions are adequate for the protection of the underlying groundwater.

VIII. Plans for Staging HTF Spills may Violate the California Health and Safety Code

The LTU will be used for the staging of soil that is contaminated by HTF spills. The SA/DEIS states:

> The LTU will be constructed with a 2-foot-thick clay layer on the floor (underlain by 3-feet of native soil that has been compacted to 95% compaction) that will serve as a protective barrier to the downward movement of contaminants from the LTU. Moreover, should any contaminants escape the LTU, the water table is approximately 195 feet beneath the LTU. In summary, because of the viscosity of HTF at ambient temperatures, the insolubility of HTF, the depth of the water table, and the placement of protective berms around the LTU, it is expected that surface water and groundwater quality beneath the site will not be impacted by LTU operation.[22]

Section 25203 of the California Health and Safety Code prohibits the disposal of hazardous waste except at a hazardous waste facility. "Disposal" means either of the following:

> (1) The discharge, deposit, injection, dumping, spilling, leaking, or placing of any waste so that the waste or any constituent of the waste is or may be emitted into the air or discharged into or on any land or waters, including groundwaters, or may otherwise enter the environment.
> (2) The abandonment of any waste. (Health and Safety Code §25113(a).)

If a leak occurs, section 25123.3 of the California Health and Safety Code sets forth the requirements for temporarily staging waste. Temporary waste staging is appropriate for hazardous waste only if, among other criteria:

- the hazardous waste being accumulated does not contain free liquids;
- the hazardous waste is accumulated on an impermeable surface, such as high density polyethylene (HDPE) of at least 20 mills that is supported by a foundation, or high density polyethylene of at least 60 mills that is not supported by a foundation, among other requirements.

If any of the requirements are not met, then the Project must be regulated as a hazardous waste storage facility under Health and Safety Code Section 25200 et seq.

The staging area of the Project's LTU as described in the SA/DEIS does not meet the requirements for a temporary staging area under Section 25123.3(a)(2) of the Health and Safety Code for two reasons. First, the hazardous waste being accumulated would likely contain free liquids. Spills of HTF will generate free liquids at temperatures above approximately 54 degrees

[22] *Id.* at p. C.9-45

Fahrenheit. The SA/DEIS makes no mention of liquid wastes that will be generated when HTF is spilled. Second, contaminated soil would not be "accumulated on an impermeable surface, such as high density polyethylene (HDPE) of at least 20 mills that is supported by a foundation, or high density polyethylene of at least 60 mills that is not supported by a foundation." The SA/DEIS states only that the LTU will be underlain by a clay layer that will serve as a protective barrier to the downward movement of contaminants from the LTU.

The SA/DEIS must incorporate as conditions of certification all measures necessary for compliance with all cited sections of the California Health and Safety Code, including preventing waste from containing free liquids and the use of an impermeable surface in the LTU.

IX. A UXO Survey Should be Conducted Under Regulatory Oversight

The SA/DEIS states that PSPP is near Palen Pass which was the site of some of the largest mock battles in the California-Arizona Maneuver Area during WW II.[23] Live-fire training occurred in camps and facilities in the area and land mines and other unexploded ordnance have been found in the former camps. Because of the proximity of the PSPP site to Palen Pass and the camps, the applicant plans to conduct pre-construction UXO surveys with qualified technicians (that meet Department of Defense requirements) and employ UXO experts during ground disturbances in areas that may contain UXO. The applicant also provided an outline for a UXO recognition training program in its response to staff data request WM-280. Accordingly, staff proposes Condition of Certification WASTE-1, which would formalize UXO training, investigation, removal, and disposal.[24]

In addition to the proximity of the PSPP site to Palen Pass, the site is in close proximity to an area identified as a "gunnery range" on a map of the Desert Training Center/California Maneuver Area (Figure included as Attachment 3 is excerpted below – PSPP is depicted in orange).

Figure 1: Map of "Gunnery Range, CDC AAB" and the approximate location of PSPP

Additionally, a WWII-era map of the CAMA shows a feature, labeled No. 29, to be located in the vicinity or beneath the Project right of way (Figure included as Attachment 4 is excerpted below). The feature is identified as the Headquarters of the Army Ground Forces, 1943.[25]

[23] *Id.* at p. C.13-10
[24] *Id.* at p, C.13-10
[25] The Desert Training Center/California Maneuver Area, 1942 – 1944, Volume 2, Historical and Archeological Contexts for the Arizona Desert. p.38, Prepared for the Bureau of Land Management

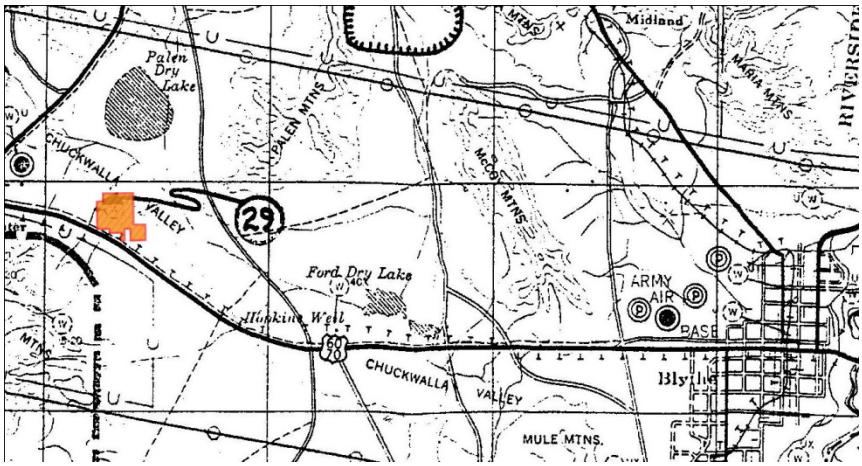

Figure 2: Headquarters, Army Ground Forces and the approximate location of PSPP

Given the intensity of the military maneuvers in the general vicinity of PSPP, the SA/DEIS must include a condition of certification that would require a UXO survey to be conducted for the project right of way and transmission line right of way under the oversight of the Department of Toxics Substances Control, the agency responsible for military site cleanup in the State of California. Without such regulatory oversight, the UXO survey may not be adequate to ensure construction worker safety.

Sincerely,

Matt Hagemann, P.G.

under contract with the U.S. Army Corps of Engineers, Statistical Research Inc., September 2008 (available at http://www.sricrm.com/publications/tech.html)

Attachment 1

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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Newport Beach, California92660
Tel: (949) 887-9013
Fax: (949) 717-0069
Email: mhagemann@swape.com

Matthew F. Hagemann, P.G.

Geologic and Hydrogeologic Characterization
Investigation and Remediation Strategies
Regulatory Compliance
CEQA Review
Expert Witness

Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certification:

California Professional Geologist, License Number 8571.

Professional Experience:

Matt has 25 years of experience in environmental policy, assessment and remediation. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Senior Environmental Analyst, Komex H2O Science, Inc (2000 -- 2003);
- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);

- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

Senior Regulatory and Litigation Support Analyst:

With SWAPE, Matt's responsibilities have included:

- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a project to provide technical assistance to a comunity adjacent to a former Naval shipyard under a grant from the U.S. EPA.
- Lead analyst in the review of numerous environmental impact reports under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, greenhouse gas emissions and geologic hazards.
- Lead analyst in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Stormwater analysis, sampling and best management practice evaluation at industrial facilities.
- Technical assistance and litigation support for vapor intrusion concerns.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.
- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.
- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the dischrge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted public hearings, and responded to public comments from residents who were very concerned about the impact of designation.
- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

Geology:

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.

- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Coloradao.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal repesentatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

Hagemann, M.F., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

Hagemann, M.F., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

Hagemann, M.F., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F**. 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

Hagemann, M.F., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

Hagemann, M.F., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

Hagemann, M.F., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

Hagemann, M.F., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

Hagemann, M. F., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

Hagemann, M.F., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

Hagemann, M.F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

Hagemann, M.F., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

Other Experience:

Selected as subject matter expert for the California Geologist licensing examination, 2009-2010.

Attachment 2

kjc OPERATING COMPANY

41100 highway 395
boron, california 93516-2109

phone 760-762-5562
facsimile 760-762-5546
www.kjcsolar.com

June 4, 1999

Ms. Diane Ventura
Lahontan Regional Water Quality Control Board
15428 Civic Drive, Suite 100
Victorville, CA 92392

Re: Spill Report for 5/22/99 Incident

Dear Ms. Ventura:

Attached is a report of the spill, which occurred at SEGS III on May 22. If you have any questions, please contact me at your convenience.

Sincerely,

(FOR D.R/B)

David M. Rib
Manager of Regulatory Affairs

DR/pd
DR99-006

Attachment

cc: Joe Koutsky / LRWQCB
Steve Munro / CEC

SPILL REPORT

OWNER:	Kramer Junction Company
OPERATOR:	KJC Operating Company
PERMITS:	Board Order #6-97-58, WDID #6B364550002 (site and evaporation ponds) Board Order #6-95-102, WDID #6B368909005 (bioremediation)
DATE:	May 22, 1999
TIME:	11:30 a.m.
SITE ADDRESS:	41100 Highway 395
LOCATION:	SEGS III solar field, northwest quadrant
MATERIAL SPILLED:	Heat Transfer Fluid (HTF), Biphenyl-Diphenyl Oxide
APPROXIMATE VOLUME SPILLED:	Approximately 21,000 gallons where released, at least 10,000 spilled to soil
APPROXIMATE VOLUME OF CONTAMINATED SOIL:	Approximately 2000 cubic yards
CONTAMINATED SOIL DISPOSITION:	Soil was removed and staged in the on-site bioremediation facility. The volume of the contaminated soil is beyond the current permit capacity of the bioremediation facility, so the soil will be sent to the TPS Technologies thermal treatment facility in Adelanto.
LRWQCB CONTACT:	Diane Ventura at 12:55 on 5/24/99. Follow-up message left for Ms. Ventura on 6/1/99 at 12:50.

CIRCUMSTANCE OF SPILL:

The spill was caused by the failure of a "flexhose," which is the flexible connection between segments of the "Solar Collection Assemblies" (SCA) that allows each SCA to individually track the sun angle. This particular flexhose was at the end of a row where the local isolation valve is located, so it took longer to stop the leak by isolating a larger section of the solar field. There was a strong flow of HTF spilling onto the ground for about 15 minutes. There was a loss of approximately 21,000 gallons of HTF from the system, approximately 1,500 gallons of which was recovered from standing puddles. The HTF-contaminated soil in the area to a depth ranging from a few inches to several feet deep.

There is an ongoing program to replace the flexhoses with "balljoint" connections. This conversion is approximately 40% complete throughout the SEGS III-VII site. The flexhoses are periodically inspected, and most failures can be detected as they usually leak for several days before failing completely. Some failures can occur much more rapidly, as is thought to have happened in this case.

amec

SECOND SEMESTER AND ANNUAL 2007 BIOREMEDIATION MONITORING REPORT LUZ SOLAR PARTNERS III – VII LTD. SEGS III THROUGH VII FACILITIES BORON, CALIFORNIA

Submitted by:

FPL Energy Operating Services, Inc. for
Luz Solar Partners III – VII Ltd.
SEGS III – VII Facilities
41100 Highway 395
Boron, CA 93516

Gregg Sellers
Agent For
Luz Solar Partners III – VII Ltd.

SECOND SEMESTER AND ANNUAL 2007 BIOREMEDIATION MONITORING REPORT LUZ SOLAR PARTNERS III – VII LTD. SEGS III THROUGH VII FACILITIES BORON, CALIFORNIA

10 January 2008

Prepared for:

Luz Solar Partners III – VII Ltd.
c/o FPL Energy Operating Services, Inc.
41100 Highway 395
Boron, CA 93516

Prepared by:

AMEC Earth & Environmental
221 – 18th Street SE
Calgary, Alberta
T2E 6J5

Project No. CE03501

Ian E. Hattie, M.Sc.
Associate

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1.0 INTRODUCTION

Luz Solar Partners III through VII Ltd. Solar Electric Generating Systems (SEGS) III through VII sites are located at 41100 Highway 395 in Boron, California (Kramer Junction). The SEGS III through VII sites are authorized to operate soil bioremediation cells and a landfarm the location of which are shown on Figure 1. The treatment facilities were designed and constructed in accordance with the requirements of Title 23, subchapter 15, of the California Code of Regulations. Under the terms of Revised Waste Discharge Requirements (WDRs) Board Order No. 6-95-102 issued by the California Regional Water Quality Control Board - Lahontan Region (RWQCB), the bioremediation treatment facility is referred to as the "Bioremediation Unit" and the landfarm is referred to as the "Landfarm". The combined facilities are simply referred to as the "Facility". The bioremediation facility receives soils impacted with heat transfer fluid (HTF) for treatment whereas the landfarm contains a combination of partially and fully-remediated soils or soils staged for treatment in the bioremediation cells as shown on Figure 2.

Soil treatment within the bioremediation facility involves manipulation of environmental controls such as moisture content, soil nutrients (nitrate fertilizer), and aeration of the soils through weekly to bi-weekly tilling to achieve the desired conditions for enhancing biodegradation of the constituents of concern. Soils treated to below 1,000 parts per million (ppm) HTF may be transferred to the Landfarm where passive treatment (natural attenuation) is allowed to occur.

Periodic testing of the soils undergoing treatment is conducted and analyzed by an independent laboratory to confirm the concentration of HTF. Once treatment has been completed and soil HTF concentrations are below 100-ppm (the permitted limit), remediated soils are available for reuse within the sites.

2.0 HTF RELEASES AND TREATMENT MONITORING

During the First Semester of 2007 approximately 125-130 cubic yards of HTF-impacted soils were generated. These HTF-affected soils were the result of remedial actions related to unanticipated releases that occurred on-site on 27 March and 27 February 2007. In both instances recovery of free-standing HTF product was implemented as soon as the release area was secured. The largest release occurred on 27 February 2007 which involved approximately 1,000 gallons of HTF in the SEGS VI solar field. Removal of HTF-impacted soil is typically initiated once free product is removed, however in the case of the 27 February 2007 event soil removal was temporarily suspended on 28 February due to high winds.

During the Second Semester of 2007 a release of approximately 30,000 gallons occurred on 16 July 2007 in the SEGS VII Power Block resulting in the generation of approximately 6,558 cubic yards of HTF-impacted soils. Recovery of free-standing HTF product was implemented as soon as the release area was secured.

Notification of releases was made to the California Regional Water Quality Control Board – Lahontan Region (RWQCB), National Response Center, California Office of Emergency Services, San Bernardino County Fire Department Hazardous Materials Division, and California Energy Commission on 01 March 2007, 30 March 2007, and 17 July 2007.

Soils affected with HTF as a result of the releases were promptly excavated and transported to the Landfarm facility for temporary storage. In the case of the 16 July 2007 release at the SEGS VII Power Block, approximately 6,408 cubic yards of HTF-affected soils were removed and transported offsite to an approved disposal facility and another 150 cubic yards was taken to the Bioremediation facility on site. Soil samples were subsequently collected from the excavations to determine if further soil removal was required. Soil sampling reports were prepared for each of the releases that summarized the methods employed for sample collection and laboratory analytical results. These reports have previously been submitted to the RWQCB.

Releases that occurred during 2007 are summarized in Table 1 below.

Table 1: Summary of 2007 HTF Releases

Release Date	Location	Volume of HTF Released
27 February 2007	SEGS VI SCA 39P	1,000 gallons
27 March 2007	SEGS V SCA 23P	35 gallons
16 July 2007	SEGS VII Power Block	30,000 gallons

3.0 OPERATION AND MAINTENANCE REPORTING

FPL Energy Operating Services, Inc. has not experienced any technical issues since assuming operational control of the Facility. Visual observations indicate that the structure of the bioremediation Unit is in good working order and that no obvious defects or structural damage is evident.

The Bioremediation Unit is constructed with two rectangular cells and a row of concrete blocks dividing the facility into two portions, a north and south half: One half of the structure is typically used to store HTF-impacted material prior to treatment and the other half for active soil remediation.

Visual inspection of the primary concrete containment structure was last conducted in 2007 on 31 December. No structural damage or signs of weakening or failure were visible at the time of inspection.

The drainage sumps for the Bioremediation Unit are checked approximately once a week. No significant accumulation of water has been noted in the sumps, suggesting that no leakage is occurring.

4.0 SAMPLING SUMMARY AND LABORATORY ANALYTICAL RESULTS

On 08 March 2007 Northstar Environmental Remediation (Northstar) conducted a random sampling of soil from the Landfarm. Northstar also collected compliance soil samples from the Bioremediation Unit on 11 June 2007. The sampling was performed to determine the concentration of HTF in impacted soils undergoing treatment. The 08 March soil samples were collected from materials which were generated from the February HTF release at SEGS VI and which were subsequently stored on plastic sheeting in the Landfarm Remaining soil in the Landfarm represents materials generated from an accidental HTF release at SEGS III in October 2005 which was subsequently tested and found to be below the 1,000 mg/kg limit.

On 19 December 2007 Northstar collected the annual "unsaturated zone monitoring system" soil sample at a depth equal to approximately one foot below the native ground surface grade (approximately 5.5 feet below the top of the landfarm for HTF. Both HTF analytes were found to be non-detectable as shown on Table 2.

The results of the laboratory analytical analyses for the First Semester 2007 reporting period are summarized in Table 2. Laboratory reports for the First Semester sampling events were previously included in the First Semester 2007 report. Laboratory data sheets and chain-of-custody record for the annual landfarm "unsaturated zone monitoring" soil sampling event are included in Appendix A.

Soil samples were collected using a stainless-steel hand-auger, and stainless-steel drive sampler equipped with clean 2-inch diameter by six-inch long stainless-steel sample sleeves. Samples were first collected in the stainless steel sleeves and then immediately transferred into laboratory-supplied, certified clean glass jars and properly labeled. The samples were then placed into a cooler, chilled with ice in sealed Ziploc™ bags and transported under chain-of-custody to Del Mar Analytical Laboratories in Irvine, California for analysis of HTF component concentrations using EPA Method 8015 Modified for HTF. Soil was collected from four randomly selected locations in the Bioremediation Unit, composited in the field and submitted to the laboratory to be analyzed as one representative sample. The same procedure was followed for the Landfarm soil sample.

All equipment was cleaned using non-phosphate detergent and triple-rinsed with deionized water between sampling locations in order to prevent cross-contamination.

Table 2: Laboratory Analytical Results

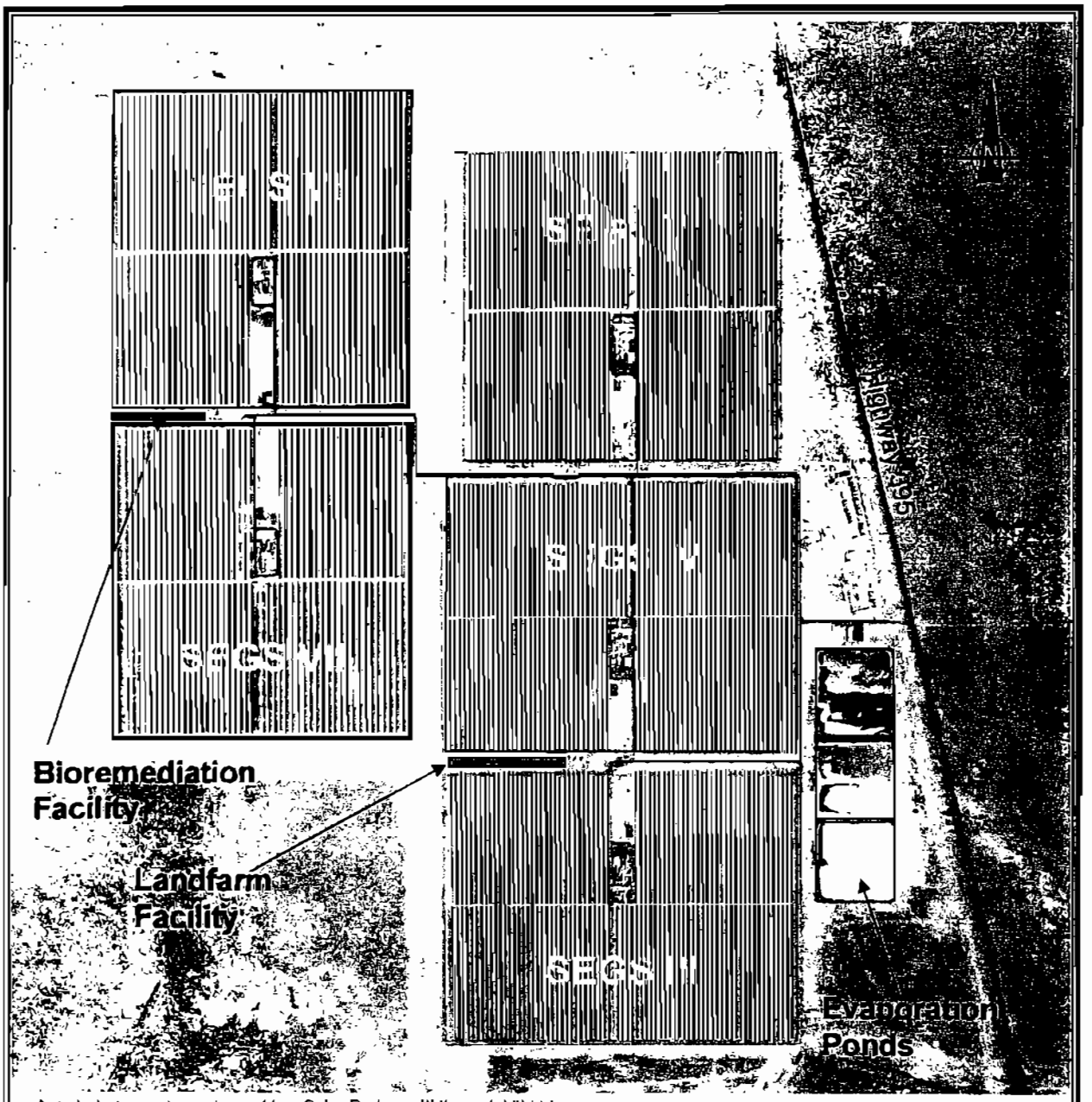
Sample Identification	Date	1,1'-Biphenyl (mg/kg)	1,1'-Oxybisbenzene (mg/kg)
LF-1[1]	08 March 2007	7,900	8,200
LF-2[1]	08 March 2007	6,200	6,200
LF-3[1]	08 March 2007	1,700	1,800
BRN (EAST) 6-11-07[2]	11 June 2007	ND	2.1
BRN (WEST)6-11-07[2]	11 June 2007	ND	33
KJ-LF-5.5'-12-19-07	19 December 2007	ND	ND

Notes:

[1] sample collected from the Landfarm facility between SEGS III & IV

[2] sample collected from the Bioremediation facility between SEGS VI & VII

Samples analyzed by EPA Method 8015B Modified for HTF. The analytes 1, 1'-Biphenyl and 1, 1'-Oxybisbenzene are components of the HTF used at the site. ND = Not Detectable



Aerial photograph courtesy of Luz Solar Partners III through VII Ltd.

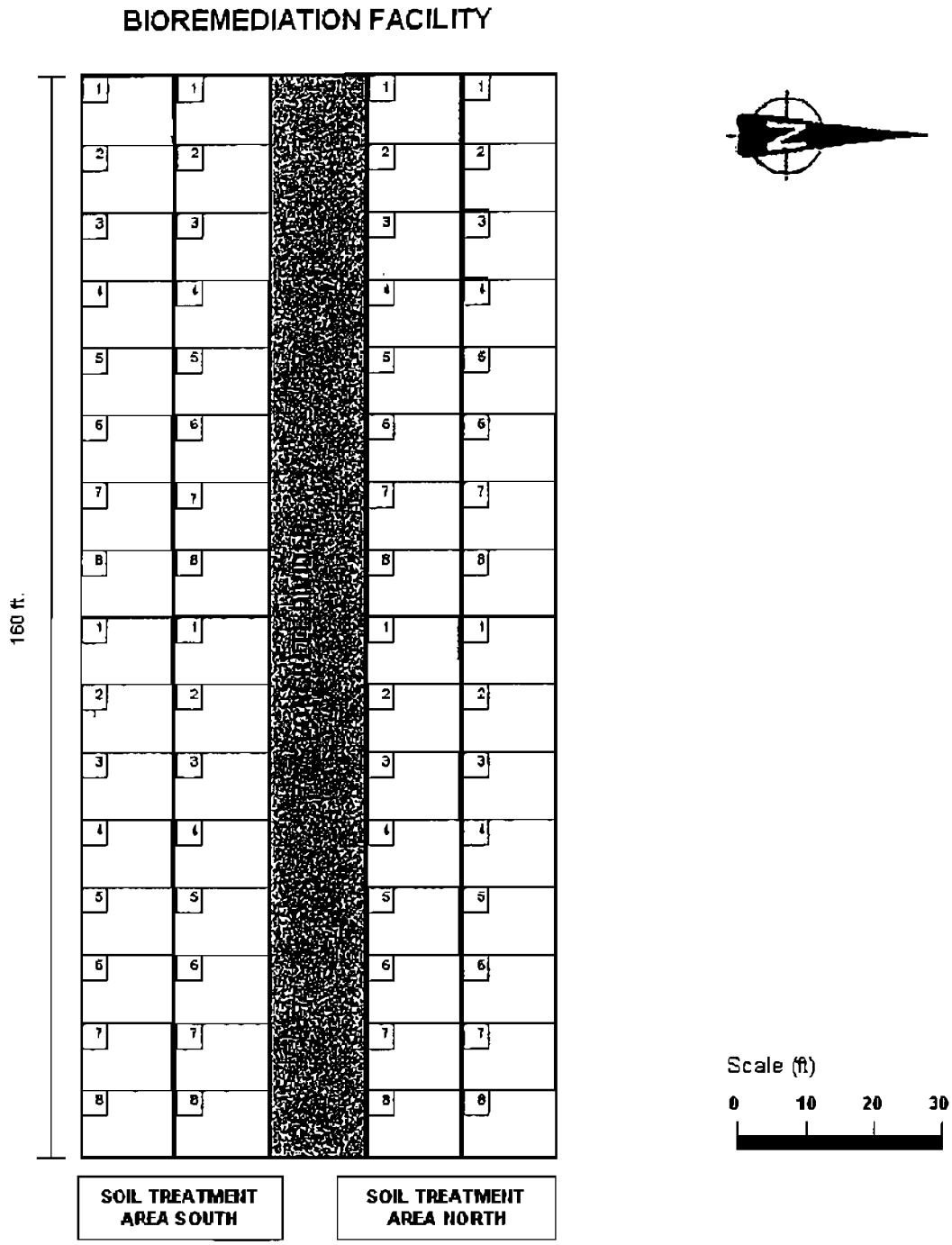
No scale

amec

Client: Luz Solar Partners III through VII Ltd.

Job No. CE03501 | Date: 26 June 2007

Figure I – Site Plan
SEGS III - VII
Boron, California



amec

Client: Luz Solar Partners III through VII Ltd.

Job No. CE03501 | Date: 10 January 2008

Figure 2
Bioremediation Unit Layout
SEGS III - VII
Boron, California

Appendix A

Laboratory Data Sheets and Chain-of-Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue, Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

LABORATORY REPORT

Prepared For: FPL Energy Operating Systems
43880 Harper Lake Rd
Hinkley, CA 92347
Attention: Glen King

Project: FPL Kramer Junction

Sampled: 12/19/07
Received: 12/21/07
Issued: 01/03/08 11:40

NELAP #01108CA California ELAP#1197 CSDLAC #10256

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 4°C, on ice and with chain of custody documentation.
HOLDING TIMES:	All samples were analyzed within prescribed holding times and/or in accordance with the TestAmerica Sample Acceptance Policy unless otherwise noted in the report.
PRESERVATION:	Samples requiring preservation were verified prior to sample analysis.
QA/QC CRITERIA:	All analyses met method criteria, except as noted in the report with data qualifiers.
COMMENTS:	No significant observations were made.
SUBCONTRACTED:	No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IQL2412-01	KJ-LF@5.5'-12-19-07	Soil

Reviewed By:

TestAmerica Irvine

Patty Mata
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
17461 Derian Avenue, Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

FPL Energy Operating Systems	Project ID: FPL Kramer Junction	
43880 Harper Lake Rd		Sampled: 12/19/07
Hinkley, CA 92347	Report Number: IQL2412	Received: 12/21/07
Attention: Glen King		

THERMINOL (CADHS LUFT/8015B MOD)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IQL2412-01 (KJ-LF@5.5'-12-19-07 - Soil)								
Reporting Units: mg/kg								
1,1'-Biphenyl	EPA 8015 MOD.	7L21094	2.0	ND	1	12/26/2007	12/27/2007	
1,1'-Oxybisbenzene	EPA 8015 MOD.	7L21094	2.0	ND	1	12/26/2007	12/27/2007	C
Surrogate: n-Octacosane (40-125%)				*79 %*				

TestAmerica Irvine

Patty Mata
Project Manager

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
17461 Derian Avenue Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

FPL Energy Operating Systems	Project ID: FPL Kramer Junction	
43880 Harper Lake Rd		Sampled: 12/19/07
Hinkley, CA 92347	Report Number: IQL2412	Received: 12/21/07
Attention: Glen King		

METHOD BLANK/QC DATA

THERMINOL (CADHS LUFT/8015B MOD)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 7L21094 Extracted: 12/26/07										
Blank Analyzed: 12/26/2007 (7L21094-BLK1)										
1,1'-Biphenyl	ND	2.0	mg/kg							
1,1'-Oxybisbenzene	ND	2.0	mg/kg							
Surrogate: n-Octacosane	*6.00*		*mg/kg*	*6.67*		*90*	*40-125*			
LCS Analyzed: 12/26/2007 (7L21094-BS1)										
1,1'-Biphenyl	2.64	2.0	mg/kg	3.33		79	50-115			
1,1'-Oxybisbenzene	2.71	2.0	mg/kg	3.33		81	50-115			
Surrogate: n-Octacosane	*5.50*		*mg/kg*	*6.67*		*82*	*40-125*			
Matrix Spike Analyzed: 12/26/2007 (7L21094-MS1)					**Source: IQL2265-03**					
1,1'-Biphenyl	3.10	2.0	mg/kg	3.33	ND	93	35-120			
1,1'-Oxybisbenzene	3.17	2.0	mg/kg	3.33	ND	95	35-120			
Surrogate: n-Octacosane	*6.15*		*mg/kg*	*6.67*		*92*	*40-125*			
Matrix Spike Dup Analyzed: 12/26/2007 (7L21094-MSD1)					**Source: IQL2265-03**					
1,1'-Biphenyl	2.87	2.0	mg/kg	3.33	ND	86	35-120	8	30	
1,1'-Oxybisbenzene	2.95	2.0	mg/kg	3.33	ND	88	35-120	7	30	
Surrogate: n-Octacosane	*5.97*		*mg/kg*	*6.67*		*90*	*40-125*			

TestAmerica Irvine

Patty Mata
Project Manager

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
17461 Derian Avenue, Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

FPL Energy Operating Systems 43880 Harper Lake Rd Hinkley, CA 92347 Attention: Glen King	Project ID: FPL Kramer Junction Report Number: IQL2412	Sampled: 12/19/07 Received: 12/21/07

DATA QUALIFIERS AND DEFINITIONS

C	Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

TestAmerica Irvine

Patty Mata
Project Manager

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
17461 Derian Avenue, Suite 100, Irvine, CA 92614 (949) 261-1022 Fax (949) 260-3297

FPL Energy Operating Systems 43880 Harper Lake Rd Hinkley, CA 92347 Attention: Glen King	Project ID: FPL Kramer Junction Report Number: IQL2412	Sampled: 12/19/07 Received: 12/21/07

Certification Summary

TestAmerica Irvine

Method	Matrix	Nelac	California
EPA 8015 MOD.	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

TestAmerica Irvine

Patty Mata
Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from TestAmerica.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

IQL2412

CHAIN OF CUSTODY FORM

[illegible] Ave., #100 Irvine CA 92614 (949) 261-1022 FAX (949) [illegible]
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St. Suite B-120 Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas NV 89120 (702) 798-3620 FAX (702) 798-3621

IQL2412 Page 1 of 1

TAL 0073(1007)

Client Name/Address: FPL-Kramer Junction, 41100 Highway 395, Boron, CA 93516

Project/PO Number: FPL-Kramer Junction

Project Manager: Glen Boling

Phone Number: (760) 762-5562

Sampler: Pablo DeLaPena

Fax Number:

Analysis Required: 8015 modified for Ethanol

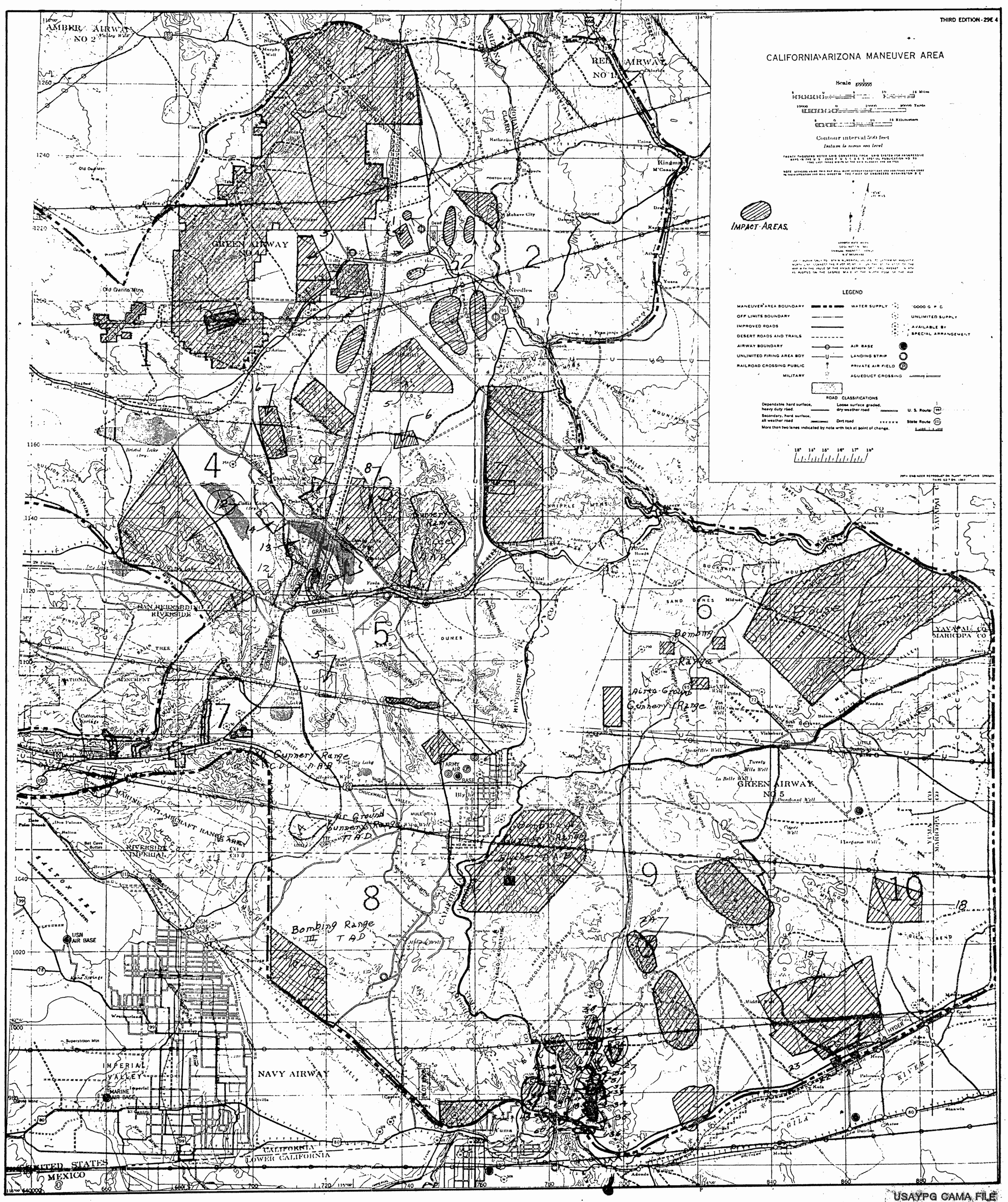
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date	Sampling Time	Preservatives	8015 modified for Ethanol	Special Instructions
KJ-LFC5.5'-12-19-07	Soil	4oz Jar	1	12-19-07	1235	on Ice	X	

AO 12/21/07 18:20

Relinquished By:	Date/Time:	Received By:	Date/Time:	Turnaround Time: (Check)
[signature]	12-20-07 @1850			same day ____ 72 hours ____
Relinquished By:	Date/Time:	Received By:	Date/Time:	24 hours ____ 5 days ____
				48 hours ____ normal X
Relinquished By:	Date/Time:	Received In Lab By: [signature]	Date/Time: 12/21/07 18:50	Sample Integrity: (Check) intact X on ice 5.5/4.4

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

Attachment 3


THIRD EDITION-29E 4
CALIFORNIA-ARIZONA MANEUVER AREA
Scale 1/500000
Contour interval 500 feet
Datum is mean sea level
IMPACT AREAS
LEGEND
MANEUVER AREA BOUNDARY
OFF LIMITS BOUNDARY
IMPROVED ROADS
DESERT ROADS AND TRAILS
AIRWAY BOUNDARY
UNLIMITED FIRING AREA BDY
RAILROAD CROSSING PUBLIC
MILITARY
WATER SUPPLY
UNLIMITED SUPPLY
AVAILABLE BY SPECIAL ARRANGEMENT
AIR BASE
LANDING STRIP
PRIVATE AIR FIELD
AQUEDUCT CROSSING
ROAD CLASSIFICATIONS
Dependable hard surface, heavy duty road.
Secondary, hard surface, all weather road
Loose surface graded, dry weather road
Dirt road
U. S. Route
State Route
More than two lanes indicated by note with tick at point of change.
AMBER AIRWAY NO 2
RED AIRWAY NO 1
GREEN AIRWAY NO 4
GREEN AIRWAY NO 5
NAVY AIRWAY
Needles
Kingman
Bombing Range
Air Ground Gunnery Range
Gunnery Range
Bombing Range TAD
Gunnery Range TAD
Air Ground Gunnery Range TAD
Bombing Range TAD
MARINE ANTI-AIRCRAFT RANGE AREA
RIVERSIDE
IMPERIAL
SALTON SEA
USN AIR BASE
MARINE AIR BASE
ARMY AIR BASE
IMPERIAL VALLEY
CALIFORNIA
LOWER CALIFORNIA
UNITED STATES
MEXICO
GILA RIVER
HYDER
USAYPG CAMA FILE

Attachment 4

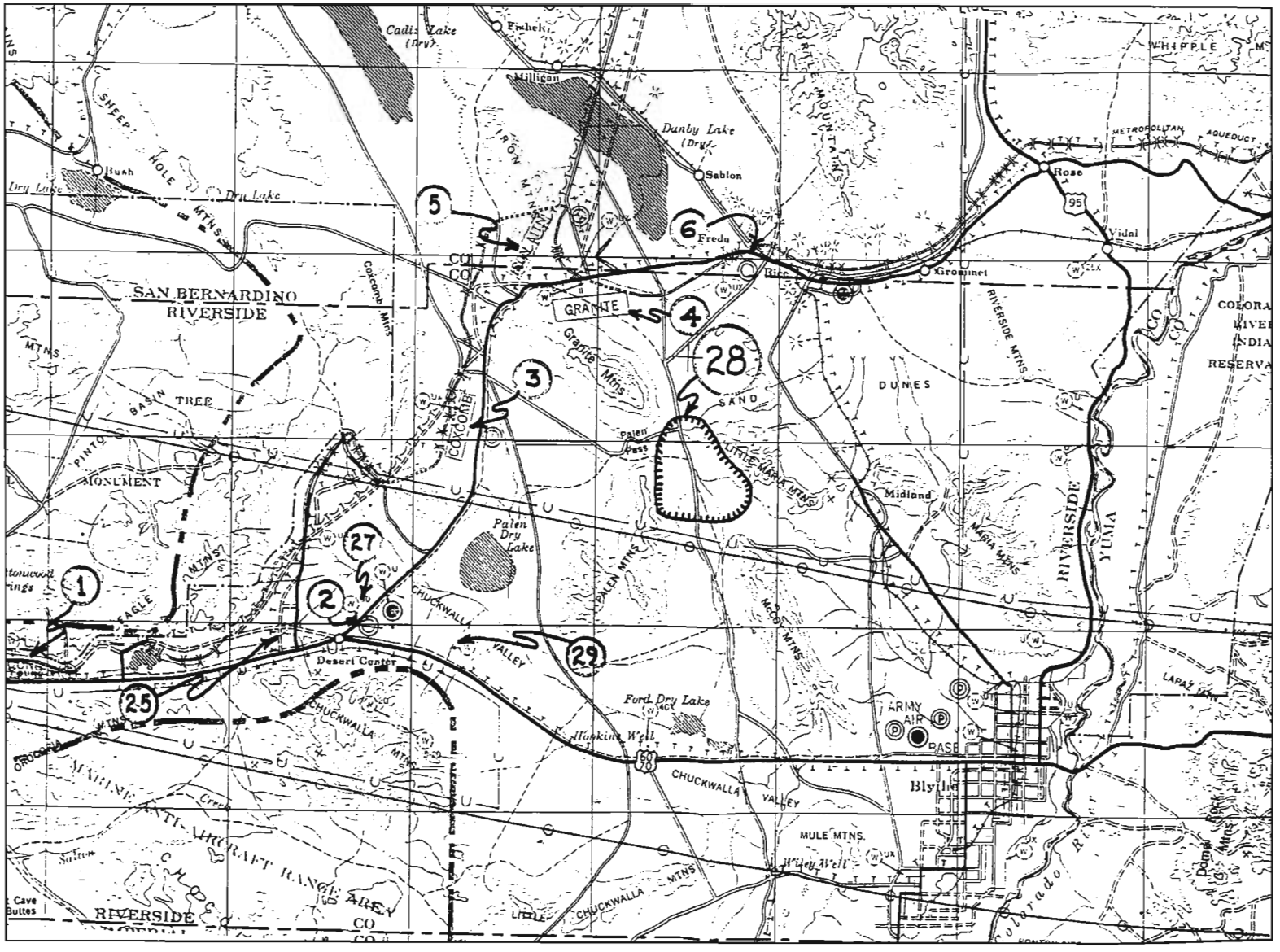


Figure 27. Map of a portion of the DTC/C-AMA, showing installations. The Palen Pass Defensive Area (a maneuver area) is marked 28. Other installations include the following: Camp Young, 1; Desert Center Observers Camp, 2; Camp Coxcomb, 3; Camp Granite, 4; Camp Iron Mountain, 5; Freda Railroad Siding, 6; Eagle Mountain Road Medical Installations, 25; Desert Center A.A.D., 27; and 18th Ordnance Battalion Camp near Desert Center, 1 and 29 (Headquarters Army Ground Forces 1943).

Attachment C

FOR DEPARTMENT USE ONLY				
Date Received	Amount Received	Amount Due	Date Complete	Notification No.
	$	$		

STATE OF CALIFORNIA

DEPARTMENT OF FISH AND GAME

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

Complete EACH field, unless otherwise indicated, following the enclosed instructions and submit ALL required enclosures. Attach additional pages, if necessary.

1. APPLICANT PROPOSING PROJECT

Name	Josef Eichhammer		
Business/Agency	Solar Millennium, LLC		
Street Address	1625 Shattuck Ave., Suite 270c		
City, State, Zip	Berkeley, California 94709-1611		
Telephone	(510) 524-4517	Fax	(510) 524-5516
Email	eichhammer@solarmillennium.com		

Name	Mr. Robert Redlinger		
Business/Agency	Chevron Energy Solutions, A Division of Chevron U.S.A. Inc.		
Street Address	345 California St., 18th Floor		
City, State, Zip	San Francisco, California 94104		
Telephone	(415)733-4614	Fax	(415)733-4952
Email	Rredlinger@chevron.com		

2. CONTACT PERSON *(Complete only if different from applicant)*

Name	Gavin Berg		
Street Address	1625 Shattuck Ave. Suite 270c		
City, State, Zip	Berkeley, CA 94709-1611		
Telephone	(510) 524-4517	Fax	(510) 524-5516
Email	berg@solarmillennium.com		

3. PROPERTY OWNER *(Complete only if different from applicant)*

Name	Bureau of Land Management Palm Springs/South Coast Field Office		
Street Address	1201 Bird Center Drive		
City, State, Zip	Palm Springs, CA 92262		
Telephone	(760) 833-7100	Fax	
Email			

4. PROJECT NAME AND AGREEMENT TERM

A. Project Name		Palen Solar Power Project (PSPP)		
B. Agreement Term Requested		☒ Regular *(5 years or less)*		
		☐ Long-term *(greater than 5 years)*		
C. Project Term		D. Seasonal Work Period		E. Number of Work Days
Beginning *(year)*	Ending *(year)*	Start Date *(month/day)*	End Date *(month/day)*	
Late 2010	2013	Year round	Year round	Project construction is anticipated to last 39 months. The planned operational life of the Project is 30 years, but the facility conceivably could operate for a longer or shorter period depending on economic or other circumstances.

5. AGREEMENT TYPE

Check the applicable box. If box B, C, D, or E is checked, complete the specified attachment.		
A.	☒ Standard *(Most construction projects, excluding the categories listed below)*	
B.	☐ Gravel/Sand/Rock Extraction *(Attachment A)*	*Mine I.D. Number:* _____
C.	☐ Timber Harvesting *(Attachment B)*	*THP Number:* _____
D.	☐ Water Diversion/Extraction/Impoundment *(Attachment C)*	*SWRCB Number:* _____
E.	☐ Routine Maintenance *(Attachment D)*	
F.	☐ DFG Fisheries Restoration Grant Program (FRGP)	*FRGP Contact Number:* _____
G.	☐ Master	
H.	☐ Master Timber Harvesting	

6. FEES

Please see the current fee schedule to determine the appropriate notification fee. Itemize each project's estimated cost and corresponding fee. *Note: The Department may not process this notification until the correct fee has been received.*

		B. Project Cost	C. Project Fee
1	Grading and compacting soil for construction of solar array fields, power generating facilities, and support facilities.	> $500,000.00	$4,000.00
2			
3			
4			
		D. Base Fee *(if applicable)*	
		E. TOTAL FEE ENCLOSED	$4,000.00

7. PRIOR NOTIFICATION OF ORDER

A. Has a notification previously been submitted to, or a Lake or Streambed Alteration Agreement previously been issued by, the Department for the project described in this notification?

☐ Yes *(Provide the information below)* ☒ No

Applicant: _____ Notification Number: _____ Date: _____

B. Is this notification being submitted in response to an order, notice or other directive ("order") by a court or administrative agency (including the Department)?

☒ No ☐ Yes *(Enclose a copy of the order, notice, or other directive. If the directive is not in writing, identify the person who directed the applicant to submit this notification and the agency he or she represents, and describe the circumstances relating to the order)*

☐ *Continued on additional pages(s)*

8. PROJECT LOCATION

A. Address or description of project location.

(Include a map that marks the location of the project with a reference to the nearest city or town, and provide driving directions from a major road or highway)

The proposed Palen Solar Power Plant (PSPP or Project) is located approximately 10 miles east of Desert Center, and 0.5 mile north of the Interstate 10 (I-10) corridor in eastern Riverside County, California (Attachment 1, Figure 1). The disturbance area (area inside and outside the fenceline that will be disturbed by the Project) is composed of a large, contiguous area of approximately 5,212 acres of undeveloped land administered by the Bureau of Land Management (BLM), with the exception of one 40-acre private parcel that is being purchased by the Applicants (Attachment 1, Figure 2). The Project site is undeveloped and vacant. To get to the proposed PSPP disturbance area from I-10, take the Corn Springs Road Exit going north and continue onto a dirt service road.

☐ *Continued on additional pages(s)*

B. River, stream, or lake affected by the project.	Corn Springs Wash and other unnamed desert washes. Hydrologic Areas in proximity to the PSPP are shown in Attachment 1, Figure 3.
C. What water body is the river, stream or lake tributary to?	Not applicable
D. Is the river or stream segment affected by the project listed in the state or federal Wild and Scenic Rivers Acts?	☐ Yes ☒ No ☐ Unknown
E. County	Riverside County

F. USGS 7.5 Minute Quad Map Name	G. Township	H. Range	I. Section	J. ¼ Section
Sidewinder Well 1983	05S-06S	17E	3–6, 8–10, 20-21, 27–34	--
				--
				--

☐ *Continued on additional pages(s)*

K. Meridian *(check one)* ☐ Humboldt ☐ Mt. Diablo ☒ San Bernardino

L. Assessor's Parcel Number(s)

Refer to Attachment 1, Figure 2.

☐ *Continued on additional pages(s)*

M. Coordinates *(If available, provide at least latitude/longitude or UTM coordinates and check appropriate boxes)*			
Latitude/Longitude	*Latitude:* 33°50'56"N	*Longitude:* 115°14'22"W	
	☒ Degrees/Minutes/Seconds	☐ Decimal Degrees	☐ Decimal Minutes
UTM	*Easting:* 11 N 664692.73 mE	*Northing:* 3729829.19 mN	☐ Zone 10 ☐ Zone 11
Datum used for Latitude/Longitude or UTM	☒ NAD 27	☐ NAD 83 or WGS 84	

9. PROJECT CATEGORY AND WORK TYPE *(Check each box that applies)*

PROJECT CATEGORY	NEW CONSTRUCTION	REPLACE EXISTING STRUCTURE	REPAIR/MAINTAIN EXISTING STRUCTURE
Bank stabilization – bioengineering/recontouring	☐	☐	☐
Bank stabilization – rip-rap/retaining wall/gabion	☐	☐	☐
Boat dock/pier	☐	☐	☐
Boat ramp	☐	☐	☐
Bridge	☐	☐	☐
Channel clearing/vegetation management	☐	☐	☐
Culvert	☐	☐	☐
Debris basin	☐	☐	☐
Dam	☐	☐	☐
Diversion structure – weir or pump intake	☐	☐	☐
Filling of wetland, river, stream, or lake	☒	☐	☐
Geotechnical survey	☐	☐	☐
Habitat enhancement – revegetation/mitigation	☐	☐	☐
Levee	☐	☐	☐
Low water crossing	☐	☐	☐
Road/trail	☐	☐	☐
Sediment removal – pond, stream, or marina	☐	☐	☐
Storm drain outfall structure	☐	☐	☐
Temporary stream crossing	☐	☐	☐
Utility crossing: Horizontal Directional Drilling	☐	☐	☐
Jack/bore	☐	☐	☐

Open trench	☐	☐	☐
Other *(specify)*:	☐	☐	☐

10. PROJECT DESCRIPTION

A. Describe the project in detail. Photographs of the project location and immediate surrounding area should be included.

- Include any structures (e.g., rip-rap culverts, or channel clearing) that will be placed, built, or completed in or near the stream, river, or lake
- Specify the type and volume of materials that will be used.
- If water will be diverted or drafted

Enclose diagrams, drawings, plans and/or maps that provide all the following: site specific construction details; the dimensions of each structure and/or extent of each activity in the bed, channel, bank or floodplain; and overview of the entire project area (I.e., "birds-eye view") showing the location of each structure and/or activity, significant area features, and where the equipment/machinery will enter and exit the project area.

Solar Millennium LLC and Chevron Energy Solutions (the Applicants) are proposing to construct two commercial solar thermal electric power-generating stations, collectively referred to as the Palen Solar Power Project (PSPP or Project). The Project would be located on an approximately 5,212-acre parcel managed by the Bureau of Land Management, pursuant to a right-of-way (ROW) grant from BLM. The total disturbance area would be approximately 3,899 acres. The facility footprint would occupy approximately 2,974 acres of the ROW. In addition to solar fields and a main power-generating facility, the site would include a main office building and parking lot, a main warehouse with laydown area, onsite access roads, a tie-in switchyard, a bioremediation area, and a transmission line and substation. Attachment 1, Figure 4 illustrates the location of the proposed solar facilities.

The Project would use solar parabolic trough technology to generate electricity. With this technology, arrays of parabolic mirrors collect heat energy from the sun and refocus the radiation on a receiver tube located at the focal point of the parabola. A heat transfer fluid (HTF) is heated to high temperature (750 degrees Fahrenheit [°F]) as it circulates through the receiver tubes. The heated HTF is then piped through a series of heat exchangers where it releases its stored heat to generate high-pressure steam. The steam is then fed to a traditional steam turbine generator where electricity is produced.

The Project would have a nominal output of 500 MW, produced by two adjacent, identical, and independent 250-MW units, referred to as Units 1 and 2. The two power units would share a main office building, main warehouse/maintenance building, parking lot, onsite access roads, bioremediation area for HTF-contaminated soil, and central internal switchyard. Units 1 and 2 would have their own solar field composed of piping loops arranged in parallel groups, and its own power block centrally located within the solar field. Each solar field would cover approximately 1,380 acres. Each power block would have its own HTF pumping and freeze protection system, solar steam generator, steam turbine generator, an air-cooled condenser (ACC) for cooling, transmission lines and related electrical system, and auxiliary equipment (e.g., water treatment system, emergency generators).

The Project would require a new transmission line to interconnect to the regional transmission grid. The transmission line is proposed to be constructed in a 40.4-acre area and to extend south approximately 1.2 miles from the boundary of the Project Disturbance Area across I-10 and turning west for a short distance to just past Chuckwalla Road. The substation would be constructed in a 34.7-acre area immediately west of the southern end of the transmission line.

Access to the PSPP would be via a new 1,350-foot-long, 24-foot-wide paved access road from Corn Springs Road. Only a small portion of the overall facility footprint would be paved, primarily the site access road, the service roads to the power blocks, and portions of the power blocks themselves. The remaining portions of the power blocks would be gravel surfaced. In total, each power block would be approximately 18.4 acres with approximately 6 acres of paved area. The solar field would remain unpaved and without a gravel surface to prevent rock damage from mirror wash vehicle traffic; a dust suppression coating would be used on the dirt roadways within and around the solar field. The Project solar field and support facilities perimeter would be secured with 8-foot-tall chain-link metal-fabric security fencing, with 1 foot barbed wire or razor wire on top. Controlled access gates would be located at the site entrance.

The existing topographic conditions of the facility footprint show an average slope of approximately 1 foot every 330 feet (0.30 percent) toward the northeast, with a series of desert washes traversing the site (e.g., a primary wash and a few secondary washes). Drainage across the undeveloped property is concentrated in these washes, until the drainage features disappear and flows fan out across the landscape as sheet flow. Development of the site would include intercepting the storm flows in three washes at the Project boundaries, channelizing and rerouting the flows around and through the site, and then returning the flows to their sheet flow regime on the north side of the site. The channel segments would be designed to meet Riverside County requirements, as well as biological considerations such as wildlife movement. Jurisdictional waters of the State are illustrated in Figure 5 of Attachment 1.

As part of the PSPP, the series of desert washes that crosses the disturbance area from southwest to northeast would be rerouted into three channels on the west side, center, and east side of the disturbance area, corresponding to the three bridges that direct flow passing under I-10 (Attachment 1, Figure 4). These channels would intercept flows prior to their entry to the site and convey them in realigned channels to approximately the same locations where they exit the site under existing conditions. Outlets for each channel would end in diffusers.

The west and east channels would be located entirely outside of the proposed perimeter fencing. The center channel inlets and outlets would be located outside of perimeter fencing. The remainder of the center channel would be located within the perimeter fence. Additional fencing will be located along the top of the channel just beyond the maintenance road. The channels would be constructed with native material, and scour protection (i.e., rip-rap) would be added to the channel sides and bottoms in stress areas such as curves and slope transitions. No scour protection is proposed for the channel bottom in the straight sections of the channels. This is to allow the low flows to meander across the bottom, replicating as nearly as possible the flow regimes under current conditions.

The power plant units would be graded generally following the existing contours of the site to minimize the amount of disturbance and allow a balanced distribution of material. Runoff from the units would be collected in a series of swales and small channels that would direct the flow to the appropriate perimeter channel. The power block areas that are centrally located within the two power plant units would have their own detention/water quality basins within the block, from which flows would be directed to the nearest downstream channel. The PSPP would employ a comprehensive system of management controls, including site-specific best management practices (BMPs), to minimize storm water contact with contaminants.

The preliminary site grading plan is designed to be balanced; no import or export of soil is expected for general earthwork. The grading plan does not currently allow for any soil shrinkage or other losses. The grading plan will be adjusted to account for any loss in elevation that could occur. Engineered fill would be provided as required for equipment and structure foundations as/if recommended by the geotechnical report. Additionally, granular material may need to be imported for road base and possible use below foundations. Mass grading of the site would occur at the beginning of the construction period and last approximately 24 months. The total earth movement required is estimated to be 4.5 million cubic yards.

To facilitate dust and contaminant removal, treated water would be used to spray-clean the solar mirrors on a periodic basis, determined by a reflectivity monitoring program. This operation is generally done at night and involves a water truck spraying treated water on the mirrors in a drive-by fashion. Rinsate from the washing operation is expected to evaporate on the mirror surface with no appreciable runoff.

Sanitary wastewater would be collected for treatment in septic tanks and disposed of via leach fields. Based on an estimate of 5,500 gallons of sanitary wastewater production per day, a total leach field area of approximately 11,000 square feet would be required, spread out among three or more locations. The leach fields would consist of buried perforated pipes. The power-generation cycle would not produce cooling-tower blow-down because the plant would be dry cooled.

Site photographs are included in Attachment 1, Figures 5a through 5i.

Supplemental Engineering Data for the Project is included as Attachment 2. For a more detailed Project Description, refer to the PSPP Biological Resources Technical Report (Attachment 3) and Supplemental Biological Resources Technical Report (Attachment 4).

B. Specify the equipment and machinery that will be used to complete the project.	
Heavy equipment, such as bulldozers, cranes, scrapers, rollers, backhoes, concrete trucks, and dump trucks, would be employed during site preparation and construction of the proposed Project. Project construction would require an average of 566 employees over the entire 39-month construction period, with staff requirements peaking at approximately 1,140 workers in Month 17 of construction. This would include equipment and machinery operators, construction management personnel, surveyors, and qualified construction monitors.	
C. Will water be present during the proposed work period (specified in box 4.D) in the stream, river, or lake (specified in box 8.B)	☒ Yes ☐ No *(Skip to box 11)* The Project plans to conduct initial site preparation and construction of the rerouted washes when the channels are dry; however, the Project would prefer to have the option to conduct work any time of year.
D. Will the proposed project require work in the wetted portion of the channel?	☒ Yes *(Enclose a plan to divert water around work site)* ☐ No The Project would require work within the washes as part of rerouting the existing channel. The washes are only wet when a storm event results in surface flow; therefore, work in the wetted portion of the channel would only occur if work is being performed during a storm event that results in surface flow. Attachment 1, Figure 4 illustrates the plan to permanently divert water around the site by rerouting the wash.

11. PROJECT IMPACTS

A. Describe impacts to the bed, channel, and bank of the river, stream or lake, and the associated riparian habitat. Specify the dimensions of the modifications in length (linear feet) and area (square feet or acres) and the type and volume of material (cubic yards) that will be moved, displaced, or otherwise distributed, if applicable.

Attachment 1, Figure 5 illustrates State waters within the PSPP disturbance area. The proposed PSPP would result in permanent impacts to 347.9 acres of State waters, including 154.0 acres of desert dry wash woodland (141.0 acres direct and 13.0 acres indirect) and 193.9 acres of unvegetated ephemeral dry wash (161.8 acres direct and 32.1 indirect).

For a complete description of the jurisdictional features within the Project disturbance area, see Attachment 5, Delineation of Jurisdictional Waters of the State. Project impacts are detailed in the Biological Resources Technical Report (Attachment 3) and Supplemental Biological Resources Technical Report (Attachment 4).

B. Will the project affect any vegetation? ☒ Yes *(Complete the tables below)* ☐ No

Vegetation Type	Temporary Impact	Permanent Impact
Desert dry wash woodland	Linear feet: none	Linear feet: 10,488
	Total area: none	Total area: 141.0 acres direct; 13.0 acres indirect
Unvegetated ephemeral dry wash	Linear feet: none	Linear feet: 22,285
	Total area: none	Total area: 161.8 acres direct; 32.1 indirect

[a] Downstream waters containing wash dependent vegetation would likely be indirectly impacted by the rerouting of the on-site washes. The data presented here represent the full complement of washes downstream that may be indirectly impacted; however, a full determination of this impact will rely on hydrologic studies that are still in progress. It is anticipated that the indirect permanent impact estimate will be refined and potentially decrease due to rerouted drainages delivering water back into the secondary wash on the northern boundary of the project.

☐ *Continued on additional pages(s)*

C. Are any special status animal or plant species, or habitat that could support such species, known to be present on or near the project site?

☒ Yes *(List each species and/or describe the habitat below)* ☐ No ☐ Unknown

Special-status species that occur or have the potential to occur in proximity to the PSPP are summarized below. The Biological Resources Study Area (BRSA) includes the Project disturbance area and the survey buffer. Refer to the PSPP Biological Resources Technical Report (Attachment 3) and Supplemental Biological Resources Technical Report (Attachment 4) for more detail on the survey buffer and an analysis of impacts related to the species discussed below.

Special-Status Plant Species

Based on regional databases; site-specific habitat evaluations by Project biologists; and literature review, including a California Natural Diversity Database (CNDDB) records search, it was determined that no State-listed plant species have been recorded near the BRSA or have potential to occur in the BRSA. No State-listed plant species were detected within the BRSA.

Special-Status Wildlife Species

Desert tortoise (DT; *Gopherus agassizii*), listed as threatened under the California Endangered Species Act (CESA), were detected within the BRSA during surveys. No live DT were observed within the disturbance area, but active burrows were noted within the BRSA. The Project disturbance area is considered suitable habitat for DT, but is generally of low quality, with the exception of the transmission line corridor, where vegetation observed is of higher quantity and quality, and a larger amount of DT sign was observed. Moderate population density is expected in the Project disturbance area based on the habitat quality and survey results.

Although one individual Swainson's hawk (State-listed as threatened) was observed on site, there is no suitable nesting habitat within the disturbance area and, based on the time of year of the observation, the individual was assumed to be migrating through the area. The disturbance area has limited resources required for Swainson's hawk migration and, therefore, the area would not be considered a major migration corridor.

Eight other California Department of Fish and Game (CDFG) non-listed special-status wildlife species were observed within the BRSA:

- American badger (*Taxidea taxus)*
- Desert kit fox (*Vulpes macrotis arsipus*)
- Loggerheaded shrike (*Lanius ludovicianus*)
- Mojave fringe-toed lizard (*Uma scoparia*)
- Northern harrier (*Circus cyaneus*)
- Purple martin (*Progne subis*)
- Western burrowing owl (*Athene cunicularia hypugaea*)
- Vaux's swift (*Chaetura vauxi*)

Desert kit fox burrows, complexes, and scat, and American badger dens and animal burrows showing evidence of predation by badgers were detected within the BRSA during surveys. Mojave fringe-toed lizard was detected throughout the BRSA. Two western burrowing owl pairs, a CDFG State Species of Special Concern, and eight active burrows were observed within the disturbance area.

An additional two CDFG special-status species (Nelson's bighorn sheep [*Ovis canadensis nelsonii*] and pallid bat [*Antrozous pallidus*]) have a moderate potential to occur, and three special-status species (Gila woodpecker [*Melanerpes uropygialis*], gilded flicker [*Colaptes chrysoides*], and crissal thrasher [*Toxostoma crissale*]) have a low potential to occur.

☐ *Continued on additional pages(s)*

D. Identify the source(s) of information that supports a "yes" or "no" answer above in Box 11.C.

Please see :

- Attachment 3, PSPP Biological Resources Technical Report (August 2009)
- Attachment 4, PSPP Supplemental Biological Resources Technical Report (November 2008)

☐ *Continued on additional pages(s)*

E. Has a biological study been completed for the project site?

☒ Yes *(Enclose the biological study)* ☐ No

Please see Attachment 3, PSPP Biological Resources Technical Report (August 2009), and Attachment 4, PSPP Supplemental Biological Resources Technical Report (November 2008)

Note: A biological assessment or study may be required to evaluate potential impacts on biological resources.

F. Has a hydrological study been completed for the project or project site?

☒ Yes *(Enclose the hydrological study)* ☐ No

Please see Attachment 2, Supplemental Engineering Narrative, and Attachment 6, Conceptual Drainage Plan

Note: A hydrological study or other information on the site hydraulics (e.g., flows, channel characteristics, and/or flood recurrence intervals) may be required to evaluate potential project impacts on hydrology.

12. MEASURES TO PROTECT FISH, WILDLIFE, AND PLANT RESOURCES

A. Describe the techniques that will be used to prevent sediment entering watercourses during and after construction.

A preliminary Drainage, Sediment, and Erosion Control Plan (DSECP), the California Energy Commission's equivalent of a Storm Water Pollution Prevention Plan, has been prepared and is included as Attachment 7. The DSECP identifies project design features and BMPs that will be used to effectively manage drainage-related issues (e.g., erosion and sedimentation) during construction grading and for long-term operations. These BMPs include the following:

- Employee Training Program
- Erosion and Sediment Control
- Good Housekeeping Programs
- Preventive Maintenance Programs
- Structural BMPs
- Equipment and Vehicle Management Practices
- Spill Prevention and Response Programs
- Inspection Programs

B. Describe project avoidance and/or minimization measures to protect fish, wildlife, and plant resources.

Chapter 5 of Attachment 3, Biological Resources Technical Report, and Attachment 4, Supplemental Biological Resources Technical Report, describes in detail the avoidance and minimization measures to protect special-status plant and animal species. Project design features that avoid and minimize impacts to these species include the following:

- Employee Training Program
- Preconstruction Clearance Surveys for Sensitive Species
- Tortoise-Proof Fencing Around Perimeter of Project
- Biological Monitoring During Construction by Qualified Biologists
- Trash Abatement Program

- Established Parking and Staging Areas
- Spill Prevention and Response Programs
- Seasonally Dependent Avoidance Measures for Occupied Burrowing Owl Burrows
- Testing and Reporting Program for Evaporation Ponds

Note that this SAA does not address potential impacts to special-status species. This will be addressed through the Section 2081 process with CDFG.

C. Describe any project mitigation and/or compensation measures to protect fish, wildlife, and plant resources.

The Project has developed compensation measures to address impacts to waters of the State. A Conceptual Mitigation Plan for the proposed approach to compensate for impacts to waters of the State is included as Attachment 8. This plan discusses potential options for mitigation on site and off site.

In addition, compensation for potential impacts to special-status species is described in detail in Chapter 5 of the Biological Resources Technical Report (Attachment 3), the Supplemental Biological Resources Technical Report (Attachment 4), and in the Section 2081 draft application anticipated to be submitted to CDFG in December 2009.

☒ *Continued on additional pages(s)*

13. PERMITS

List any local, state, and federal permits required for the project and check the corresponding box(es). Enclose a copy of each permit that has been issued.

A. CFG Code Section 2081– California Endangered Species Act (CESA) requires issuance of a take authorization for species listed by the State as endangered or threatened; a 2081 incidental take permit is being prepared (anticipated submittal December 2009) and conditions will be provided in the California Energy Commission (CEC) decision document.	☐ Applied	☐ Issued
B. ESA Section 7 permit allows for the incidental take of listed species during the course of construction and project operations. The permit is being prepared and submittal to BLM is anticipated December 2009.	☐ Applied	☐ Issued
C. CEC License to Construct and Operate	☒ Applied	☐ Issued

D. Unknown whether ☐ local, ☐ state, or ☐ federal permit is needed for the project. *(Check each box that applies)*

☐ *Continued on additional pages(s)*

14. ENVIRONMENTAL REVIEW

A. Has a draft or final document been prepared for the project pursuant to the California Environmental Quality Act (CEQA), National Environmental Protection Act (NEPA), California Endangered Species Act (CESA) and/or federal Endangered Species ACT (ESA)?

☒ Yes *(Check the box for each CEQA, NEPA, CESA, and ESA document that has been prepared and enclose a copy of each)*

The Application for Certification (the CEQA-equivalent document for CEC) for the PSPP has been prepared and was submitted August 24, 2009 (CEC Docket No. 09-AFC-7). A copy was provided to CDFG.

☐ No *(Check the box for each CEQA, NEPA, CESA, and ESA document that will be or is being prepared)*

☐ Notice of Exemption	☐ Mitigated Negative Declaration	☐ NEPA document *(type)*: *An Environmental Impact Statement is being prepared (BLM expected to issue draft EIS in March 2010, and final EIS in August 2010)*
☐ Initial Study	☐ Environmental Impact Report	☒ CESA document *(type)*: *Section 2081 application anticipated to be submitted December 2009.*

☐ Negative Declaration	☐ Notice of Determination *(Enclose)*	☒ ESA document *(type)*: ☒ ESA document *(type)*: *ESA Section 7 permit (anticipated submittal December 2009).*
☐ THP / NTMP	☐ Mitigation, Monitoring, Reporting Plan	☒ Other *(type)*: *California Energy Commission (CEC) Application for Certification submitted August 24, 2009* (CEC Docket No. 09-AFC-7). *The CEC power plant licensing process is a CEQA-equivalent process under California law (Warren-Alquist Act).*

B. State Clearinghouse Number *(if applicable)*			
C. Has a CEQA lead agency been determined?	☒ Yes *(Complete boxes D, E, and F)*	☐ No *(Skip to box 14.G)*	
D. CEQA Lead Agency	California Energy Commission		
E. Contact Person	Rick York	F. Telephone Number	(916) 654-3945

G. If the project described in this notification is part of a larger project or plan, briefly describe that larger project or plan.

Not applicable.

☐ *Continued on additional pages(s)*

H. Has an environmental filing fee (Fish and Game Code section 711.4) been paid?

☒ Yes *(Enclose proof of payment)* ☐ No *(Briefly explain below the reason a filing fee has not been paid)*

Note: If a filing fee is required, the Department may not finalize a Lake or Streambed Alteration Agreement until the filing fee is paid.

15. SITE INSPECTION

Check one box only.

☐ In the event the Department determines that a site inspection is necessary, I hereby authorize a Department representative to enter the property where the project described in this notification will take place at any reasonable time, and hereby certify that I am authorized to grant the Department such entry.

☒ I request the Department to first contact *Gavin Berg* to schedule a date and time to enter the property where the project described in this notification will take place. I understand that this may delay the Department's determination as to whether a Lake or Streambed Alteration Agreement is required and/or the Department's issuances of a draft agreement pursuant to this notification.

16. DIGITAL FORMAT

Is any of the information included as part of the notification available in digital format (i.e., CD, DVD, etc.)?

☒ Yes (Please enclose the information via digital media with the completed notification form) ☐ No

17. SIGNATURE

I hereby certify that to the best of my knowledge the information in this notification is true and correct and that I am authorized to sign this notification as, or on behalf of, the applicant. I understand that if any information in this notification is found to be untrue or incorrect, the Department may suspend processing this notification or suspend or revoke any draft or final Lake or Streambed Alteration Agreement issued pursuant to this notification. I understand also that if any information in this notification is found to be untrue or incorrect and the project described in this notification has already begun, I and/or the applicant may be subject to civil or criminal prosecution. I understand that this notification applies only to the projects(s) described herein and that I and/or the applicant may be subject to civil or criminal prosecution for undertaking any project not described herein unless the Department has been separately notified of that project in accordance with Fish and Game Code section 1602 or 1611.

Signature of Applicant or Applicant's Authorized Representative

Date November 20, 2009

Josef Eichhammer

Print Name

Attachment D

ATTACHMENT 2

ENVIRONMENTAL EVALUATION OF PROJECT UPDATES

Minor Changes to the Palen Solar Power Project

Palen Solar I, LLC (PSI) has made various minor modifications to the Palen Solar Power Project (PSPP) since the Application for Certification (AFC) was submitted in August 2009. These minor changes are not reflected in the March 2010 Staff Assessment/Draft Environmental Impact Statement and reflect further definition of linear facilities and other changes required by other regulatory agencies and our construction team. The following pages briefly describe the various changes and evaluate their environmental implications for the PSPP, i.e., the effects of these changes (if any) on the existing analysis of Project impacts.

The PSPP Project changes discussed below include:

- Addition of an Onsite Concrete Batch Plant During Construction;
- Addition of Evaporation Ponds to process Industrial Wastewater Flows;
- Revision to Construction Water Requirements, Number of Groundwater Wells, and Construction Water Storage Approach
- Finalization of the Gen-Tie Line Route to the Southern California Edision (SCE) Red Bluff Substation;
- Changes to the Layout of Project Facilities;
- Addition of a Temporary Construction Power Line from Offsite;
- Relocation of the Existing SCE 161-kV Power Line;
- Refinement of Daily Construction Schedule;
- Finalization of the Telecommunications Line;
- Revised List of Water Treatment Chemicals, and
- Addition of an Onsite Fuel Depot

ADDITION OF CONCRETE BATCH PLANT

With the anticipated requirement for approximately 125,000 cubic yards of concrete for each of the two solar plants of the PSPP, PSI has decided to include an on-site concrete batch plant to provide a cost-effective and reliable source of concrete for the solar field and power block foundations and pads. The batch plant will have a production capacity of 150 cubic yards per hour and is expected to operate 10 hours per day, five days a week. Night operation of the batch plant will be required to overcome the difficulty of performing concrete placement in extremely high ambient temperatures (see **Refinement of Daily Construction Schedule** below).

The plant will consist of a series of storage bins and sand/aggregate piles, conveyors, ice storage and chipper, and provision for dust control. It requires a 75-kilowatt power supply of line power (or a diesel generator). Concrete will be transported from the batch plant to the on-site placement area(s) via a fleet of eight cement trucks. The proposed batch plant is portable and will be moved to a number of different locations to support current work activities. Likely deployment locations are the two power blocks and the Project's main warehouse area. (See drawing provided at the end of this document of the Temporary Construction Facilities for batch plant location.)

Implications for Project Impact Analysis:

PSI has evaluated the overall elapsed time for a standard ready mix truck to travel from an existing commercial ready mix facility in Blythe to the Project site with allowances for the time required to pass through security, on-road travel and offroad travel within the site and determined that the time exceeds the recommended time between concrete preparation and pour. Thus, PSI has determined that a temporary concrete batch plant will be required onsite for Project construction.

Providing the concrete batch plant onsite does not change the amount of concrete required for Project construction. It merely means that the raw materials (cement, sand, aggregate, etc.), and plant components (storage bins, mixers, etc.) will be delivered to the site rather than having ready mix concrete trucks deliver concrete product from an offsite batch plant location. An onsite batch plant will not disturb land outside the current, surveyed disturbance area boundaries for PSPP.

Air pollutant emissions for the batch plant are estimated using EPA AP-42 emission factors for each individual step in the concrete production process. Emissions are estimated for storage piles (sand, gravel, cement additive), weigh hopper loading, conveyor transfers, silo loading and discharge, and mixer loading. The weigh hopper loading and conveyor transfers for sand and gravel will operate with water sprays for dust emissions control, and both the silo and the mixer loading will operate with baghouse dust controls. Daily emissions are estimated based on a maximum production volume for the batch plant of 150 cubic yards per hours, 10 hours per day, with a total concrete requirement of 125,000 cubic yards per power block.

In addition, the batch plant will require 75-kW of temporary construction power (see **Addition of a Temporary Construction Power Line from Offsite** below) and will require the dedicated operation of one front-end loader. Emissions for the generator, if required, are based on Tier 2 engine emission factors and emissions from the front-end loader are based on the OFFROAD emissions model. Emission estimates for the Batch Plant are shown in Table Air-1. Detailed emission calculations are provided in the spreadsheet titled Batch Plant Emissions provided in Appendix C.

The batch plant emissions were incorporated into the revised ambient air quality modeling that was conducted for the construction phase of the PSPP. Please see the air quality evaluation below under the heading titled "**Revision of Daily Construction Schedule**" below for a discussion of the modeling procedure and results.

Batch plant operations require water and batch plant needs are included in a revised Project construction water volume of 5,750 acre-feet. A separate discussion is provided below of the changes in Project water requirements under the heading **Revision to Construction Water Requirements, Number of Groundwater Wells, and Construction Water Storage Approach).** That section addresses changes to the Chuckwalla Valley Groundwater Basin water balance and cumulative impacts assessment and the potential impact to adjacent water supply wells from increased Project groundwater pumping during construction.

The batch plants, along with the other Project construction activities, would be regulated under Riverside County noise ordinance requirements for construction activities. The County noise ordinance establishes limits for construction activities within ¼ mile of an existing residence. Because batch plant operations would not occur near the boundary of the PSPP site, they also would not occur within ¼ mile of the nearest residence. The County noise ordinance does not limit construction noise levels. Batch plant noise levels would be approximately 90 dBA Leq at 50 feet

(depending on design). The batch plant noise levels are somewhat higher than the construction noise levels addressed at the site boundary in the AFC noise analysis. However, the fact that this source would be located away from the boundary of the remote PSPP site allows greater distance for noise attenuation. Project noise impacts would not be substantially different because of the temporary onsite operation of a concrete batch plant.

With respect to hazardous materials issues, batch plant operations will require use of some low toxicity hazardous materials, such as fly ash and/or calcium chloride. However, the impacts of the temporary use of these materials would not substantially affect Project hazardous materials impacts and they would remain less than significant.

From the waste management perspective, batch plant operations will generate minimum amounts of waste concrete (i.e., daily clean out of cement trucks) and bag house or other dust control equipment particulates. The batch plant will recycle materials (e.g., sand, gravel, and water) wherever possible to minimize the volume of waste. Project waste management impacts would remain less than significant.

The onsite batch plant would eliminate the ready mix concrete truck trips associated an offsite batch plant. This would be offset by truck trips delivering concrete making materials to the site. Overall, Project traffic impacts would be unchanged.

Because no additional land disturbance would result from the onsite batch plant, impacts would be unchanged with respect to biological, cultural, and other natural resources.

ADDITION OF EVAPORATION POND(S) TO MANAGE INDUSTRIAL WASTEWATER FLOWS

As previously proposed, reject water from the Project's water treatment system (reverse osmosis [RO]) concentrate would have been used for on-site dust suppression, however, this approach was found to be problematic by the RWQCB because of their designation of the RO concentrate as a waste stream, which effectively eliminates the option of land disposal. Subsequently, PSI decided to abandon this approach. Instead, after first maximizing the amount of recycling of waste streams through use of the High Efficiency Reverse Osmosis (HERO) system for recovery, PSI has decided to use evaporation ponds to manage on-site industrial waste streams. Ongoing Project design development has determined that waste streams such as blowdown from the small wet auxiliary cooling tower and blowdown from the HTF-to-steam heat exchanger may in certain cases not be recoverable in the HERO system and these streams will be sent to the on-site evaporation pond(s).

PSI plans to construct two 4-acre evaporation ponds in each power block. Two ponds were selected for reliability. The plant will utilize one of the two ponds for approximately 24 months, and then switch to the other. When one pond requires maintenance or solids removal, PSPP can still operate with the other pond. The evaporation ponds will be double-lined and will meet all applicable regulatory requirements for surface impoundments and will be covered with narrow-mesh netting to prevent access by ravens and migratory birds.

Implications for Project Impact Analysis:

The proposed evaporation ponds will disturb no additional land surface areas beyond what was previously analyzed. While the residue in the evaporation ponds represent an additional waste

stream that will require offsite disposal, the volume and infrequency of such disposal would not change the Project's less-than-significant waste management impacts.

A primary concern with evaporation ponds is potential biological resources implications. Incorporation of evaporation ponds into the Project design potentially could modify Project impacts in two ways, both related to the attraction posed by the ponds to avian species. First, the ponds may attract ravens in numbers beyond those afforded by the normal, arid conditions extant in the Project vicinity. A larger raven population increases the potential for predation of juvenile desert tortoises. The ponds also represent an attractant to other migratory and resident avian species. Chemicals present in the evaporation pond water potentially could be harmful to these species. In addition, measures taken to prevent access to water surfaces may themselves put birds at risk.

Biological resources mitigation planning for the PSPP already includes development of a Raven Management Plan. This Plan will be revised to incorporate measures that will be taken to prevent potential adverse effects to desert tortoises as a result of a subsidized raven population. The Plan will entail exclusion netting designed to prevent access to the water surface by ravens. The Raven Management Plan will also detail the measures taken to preclude access to the water surface by other avian species, and to prevent avian species from being harmed in any way by the exclusion devices.

Evaporation ponds, along with the Project's proposed Land Treatment Unit (LTU) have the potential to impact underlying groundwater and surface water quality. A report of waste discharge (ROWD) has been submitted describing the design, operation, management and detection monitoring program for the LTU. At this time, the evaporation pond design is still under development; a complete description of this Project element, including pond design, construction and maintenance, wastewater process and characterization along with a detection monitoring program will be part of the ROWD application to the Colorado River Basin Regional Water Quality Control Board, which is anticipated in May of 2010.

Construction and operation of the evaporation ponds will not affect the type or quantity of hazardous materials used by the PSPP. The waste streams sent to the evaporation ponds will be the same with or without evaporation ponds. At least a portion of the discharge from the Project's auxiliary cooling towers and boilers will be routed to the evaporation ponds. Blowdown that bypasses the HERO and is discharged to the evaporation ponds will still contain solids and other chemicals (e.g., corrosion inhibitor), which means the blow down will be classified as a designated liquid waste. Solids (suspended and total dissolved solids) will be present and unchanged whether the blowdown is routed completely through the HERO or a portion of the blowdown is routed to the HERO and the evaporation ponds. As mentioned above concerning potential water resources impacts, the operator of an evaporation pond is required to submit a Report of Waste Discharge (ROWD) and obtain Waste Discharge Requirements (WDRs) from the RWQCB. The WDR will describe the design criteria, monitoring and sampling protocol, and other management criteria to minimize a release to the environment. The waste volumes associated with periodic cleanout of the dried evaporation pond residues would not significantly affect available disposal facilities.

Onsite evaporation ponds will not have a substantial effect on the Project's air quality impacts. The process of evaporation ponds construction is expected to have minimal effect on Project construction phase air quality impacts. Earthwork (cut and fill, grading, and compaction), and other activities (e.g., truck trips delivering clay for pond liners) associated with pond construction would slightly change Project construction emissions. Air quality impacts of evaporation pond operation would be minimal.

REVISION TO CONSTRUCTION WATER REQUIREMENTS, NUMBER OF GROUNDWATER WELLS, AND CONSTRUCTION WATER STORAGE APPROACH

There has been no change in the Project's plan to supply construction and operation phase water to the Project from onsite wells. The anticipated Project construction water demand is now 5,750 acre-feet (average of ~3.4 million gallons per calendar day over the 39-month construction period). This is an increase from the estimate of 1,500 acre-feet included in the PSPP AFC. Expected water usage during Project operation has not changed. The Project (both solar units) will require a total of approximately 300 acre-feet per year (afy).

To supply the needed quantity of water and inconsideration of the proposed change in the construction water volume and based on the uncertainty in well yield due to the limited number of well tests performed to date, PSI proposes to install and operate up to 10 wells on site. The wells will be located within the Power Block and elsewhere within the Solar Field to provide primary and secondary water supply to the Project. This is an increase in the number of on-site wells compared to the number proposed in the AFC.

Water for construction activities including dust control, soil excavation and compaction, equipment flushing, etc., will be stored onsite in temporary tanks. The temporary tanks are envisioned as "Baker Tanks," which are steel fixed axle tanks /vehicles that can be pulled to the site and set at any convenient location. Upon completion of the Project activity, the tanks are removed from the site in the same manner.

Implications for Project Impact Analysis:

The change in proposed construction water supply represents an increase of about 12 times over the previously estimated volume of about 480 acre-feet per year for 39 months, for a total of approximately 1,500 AF over the entire construction period. The impacts from the change were evaluated using the Cumulative Impacts Assessment spreadsheet (AFC Table 5.17-12 (rev 2)) and the numerical groundwater model provided in the data response of March 12, 2010. The cumulative impacts assessment was modified only changing the construction water volume to the proposed 1,917 acre-feet per year over a 3-year period beginning in 2011. The recharge and discharge elements (i.e., mesa "inflow and "outflow") were not changed over the water balance provided in Table Soil and Water-194-2 (rev1) (see March 2010 submittal [not included as no changes were made to table]) under the assumption that the infiltration would be about 5% of precipitation. The forecast shows that the Project during construction will account for about 68% of the total water used by renewable energy projects proposed in the Chuckwalla Valley Groundwater Basin for an approximately three-year period starting in 2011.

The Project's operational water volume is unchanged and accounts for about 1% to 2% of the total renewable water use, and represents about a 3% to 18% increase in total demand in the Chuckwalla Valley Groundwater Basin under an assumption of no change in the base year inflow and outflow estimates. By comparison, the proposed operational volume represents about 2.4% of the estimated recharge. While the cumulative forecast from all the current and future sources results in a short-term net annual deficit, depending on the assumption of aquifer storage, the cumulative decline across the Chuckwalla Valley Groundwater Basin is between about 0.5 and 2 feet. It would be anticipated that the water level decline would be greater in areas of higher water demand. As noted in the AFC, the proposed water use for the Project alone represents about 0.1% of the available water in storage in the Chuckwalla Valley Groundwater Basin. Given its fractional

contribution to the total water use, the Project does not represent a cumulatively considerable contribution to the water resource impacts to the Chuckwalla Valley Groundwater Basin.

The groundwater model provided in the Data Response submitted March 12, 2010, was revised to reflect an updated volume of construction water supply for the PSPP. Table Soil and Water 207-1 (rev2), "Pumping Schedule for Numerical Groundwater Modeling", was modified to incorporate the change in the construction water volume over the volume proposed in the AFC. For the numerical simulations, the total water volume (5,750 acre-feet) was applied over a 3-year period as a conservative estimate of the construction water impacts as the Project construction period is proposed at 39 months. No other changes were made in the operational water volume (300 acre-feet per year) or aquifer characteristics, or transmissivity zoning as provided for the Data Response (see Figure DR S&W 207-3, March 2010). While the operational volume was not changed, the full volume of water for construction and operation was segregated and applied through pumping wells at four locations within the Project footprint (Figure Soil and Water-1).

The revision to the construction volume was simulated for both the Project Only and Cumulative Impacts scenarios (Run 7 and Run 15 from prior modeling, March 2010). The model configuration and zonation (i.e., distribution) of transmissivity and storage coefficient were not changed over the configurations provided in March 2010 Data Response (i.e., no changes were made to Figure DR S&W 207-3). Run 7 (Project only) and Run 15 (Cumulative Impacts) were updated only with the change to the construction water volume as shown on Table Soil and Water 207-1 (rev2). The transmissivity distribution was not changed from the distribution to provide a comparative assessment between the previous modeling and the updated version with the change in the construction water volume. As noted previously, the transmissivity distribution was mapped in a conservative sense, in that lower range values were applied over larger areas which would tend to produce a larger cone-of-depression. It is important to emphasize that the numerical modeling is a 2-D simulation and as such the transmissivity values are uniformly applied through the model domain and assumed constant through the vertical extent of saturated sediments. This represents a conservative approach to the analysis of water supply and impacts from the Project, as it presumes through-going uniformity of aquifer characteristics that are not documented in the hydrostratigraphy for the Basin. The Basin shows significant heterogeneity and possibly higher transmissive sediments at depth below the Project and in the central portion of the Basin.

The model results are shown in Table DR-Soil and Water 207-2 (rev2). As can be seen in the results, the maximum drawdown occurs at the end of construction (see Figure Soil and Water-2 and Soil and Water-4). During the operational period, the pumping rate drops and is distributed uniformly in the area of the Power Blocks, as such so does the drawdown. It is also noted that at the end of operation, the drawdown is slightly larger than at the middle of operation due to prolonged pumping (see Table DR-Soil and Water 207-2 (rev2)). The impact to adjacent water supply wells was also assessed using the radius of influence from the construction and operational pumping wells to the 5-foot drawdown and 1-foot drawdown contours. The maximum distance at 1 foot drawdown for the Project occurs at the end of operation for either scenario, though there is no drawdown above 5 feet predicted beyond the Project footprint (see Figure Soil and Water-3 and Soil and Water-5). Additionally, during construction no offsite water supply wells are predicted to be affected by project pumping causing a drawdown of 5 feet or more (Figure Soil and Water-2 and Soil and Water-4). The scenarios modeled reveal that no offsite well is expected to be affected to a drawdown of 5-feet or more by the Project pumping.

In a numerical groundwater flow model, inflows and outflows of the model domain can be obtained using the model flow budget for each simulation. The cumulative difference between the inflows

and outflows is the storage change for the aquifer. As can be seen from Table DR-Soil and Water 207-2 (rev2), the largest net storage change occurs at the end of operation for either model scenario. Assuming a total recoverable storage of 15,000,000 acre-ft in the basin (DWR, 1979), the impact of basin storage over the full term of the Project (30 years) is insignificant even for the largest storage change at the end of operation (0.97%).

The numerical modeling files are provided in Appendix Soil and Water-E. which accompanies this submittal.

IDENTIFICATION OF GEN-TIE LINE ROUTE TO THE TWO PROPOSED SCE RED BLUFF SUBSTATION SITE LOCATION OPTIONS

PSI plans to provide a 230-kV transmission line connection to the proposed SCE Red Bluff substation (RBSS). The proposed 230/500-kV RBSS will be constructed, owned, operated, and maintained by SCE. Since there are two RBSS locations currently being considered by SCE, both along the Devers-Palo Verde transmission line corridor, PSI has identified two gen-tie route options that correspond to each of the proposed RBSS locations under consideration by SCE. Both of the RBSS sites are currently under consideration by SCE are located due west of the PSPP site. These two transmission corridor options are shown in Figure Trans-1 and are designated as options RBSS 1 and RBSS 2. The proposed RBSS 1 location is the one nearest to the PSPP site, located approximately three miles west of the PSPP site boundary, and about half a mile south of I-10 along the Devers-Palo Verde 500-kV transmission line corridor. The proposed RBSS 2 site is located farther from PSPP, approximately nine miles west of the PSPP site boundary, and about one mile south of I-10 also along the Devers-Palo Verde 500kV transmission line corridor.

Starting at the PSPP central switchyard metering point located near the northern boundary of the Unit #2 solar field centerline, the proposed PSPP transmission line would run north approximately ¼ mile until it exits the site boundary. At that point it jogs WNW for about a mile, and then runs due west for about a ¼ mile, and then SW for about half a mile. From there it proceeds due west for approximately 2 ½ miles where it reaches a point approximately ¾ mile north of the proposed RBSS 1 site location. The RBSS 2 transmission corridor option would continue to proceed due west from this point. The first option for the proposed transmission line would, therefore, approach RBSS 1 from the east and would tie-in to the 230-kV bus from the northern end of the substation. The alignment of this proposed corridor option would total approximately 5 ¼ miles.

For RBSS 2, the transmission line would continue to proceed due west from the point located ¾ miles directly north of the proposed RBSS 1 site for an additional three miles, where it jogs NW for about ½ mile and then proceeds another 2 ¾ miles to a point approximately one mile directly north of the proposed RBSS 2 site location. Therefore, the transmission line would approach the proposed RBSS 2 substation from the east and then tie-in to the 230-kV bus from the northern end of the substation, as in the RBSS 1 option. The alignment of this proposed route would total approximately 11 ¾ miles.

Either Red Bluff Substation location is expected to occupy a total of approximately 90 acres. Substation components would include an undetermined number of 230-kV and 500-kV lines, 230/500-kV transformer banks, circuit breakers, switchgear, and a microwave tower. A road would be included to provide vehicular access to the substation. The location and length of this road would be contingent upon the final location chosen for the RBSS. Land disturbance would be limited to the actual structure locations, construction staging areas, and access road. The RBSS will

be provided with a perimeter security wall, a minimum of eight feet in height, topped with a minimum of three strands of barbed wire.

Implications for Project Impact Analysis:

Selection of either of these routes between the PSPP plant site and the Red Bluff Substation will not substantially modify previous analyses with respect to air quality or water resources. Previous analyses in these disciplines have included a gen-tie line between PSPP and the RBSS and the differences between the selected route and the routes previously evaluated do not substantially change air emissions or water supply needs. The final selection of RBSS is expected to be identified in Desert Sunlight's DEIS this spring. PSI prefers the eastern option for RBSS due to its closer proximity to the project site and resulting lower cumulative environmental impacts for transmission lines in the area.

With respect to biological resources, portions of the gen-tie line outside the PSPP plant site were located outside the areas surveyed for biological resources in 2009. Full protocol-level biological surveys for these additional areas are currently underway for both of the proposed RBSS transmission line corridor options. It is anticipated that transmission line pole locations and access road construction will result in modest increases in impacts to Sonoran Creosote Bush Scrub and Desert Dry Wash Woodland vegetation. The current surveys will ensure a level of biological resource data that matches that derived from the 2009 surveys. Upon completion of these surveys, the results and the related impact analyses will be forwarded to the CEC and other reviewing agencies. In addition, any necessary additional mitigation provisions will be calculated.

With respect to cultural resources, portions of the gen-tie line outside the PSPP plant site are outside the area surveyed for cultural resources in 2009. Cultural resource surveys for these additional areas are currently underway in order to ensure a level of cultural resource data matching that derived from the 2009 surveys. Upon completion of these surveys, the results and the related impact analyses will be forwarded to the CEC and other reviewing agencies. The resources encountered will be incorporated into Project cultural resources evaluation and treatment programs.

With respect to transmission line safety and nuisance impacts, the electromagnetic field (EMF) is a function of the physical configuration of the transmission line and the voltage and current levels. An EMF study was prepared for a line voltage of 230-kV. No significant transmission line-related impacts were identified as a result of the Project studies and, as such, no additional mitigation is required. The double circuit PSPP transmission lines will operate at 230-kV and will have a conductor surface electric field strength significantly below 15 kV per centimeter because of the large ("Bluebird") conductor chosen for the project. Radio frequency interference and audible noise levels are not expected to be a concern during operation of the line.

CHANGES TO POWER BLOCK LAYOUT

Minor refinements have been made to the power block layouts for each of the two plants to be constructed at PSPP. Generally, these updates include a slightly enlarged ACC for improved STG performance in hot weather; adding new, lower capacity water tanks that have a smaller diameter but are slightly taller than described in the AFC; and relocation and expansion of the water treatment area, which has been shifted to make room for the center header. In addition, the entire power block is reversed north to south from the orientation presented in the AFC.

These changes are reflected in attached drawing 2008-045E-PP-001-ALT, Plot Plan Air Cooled Condenser Option (Power Block Layout_ RevE.pdf) for a revised plot plan and power block layout.

Implications for Project Impact Analysis:

The proposed layout changes do not involve disturbance of any previously undisturbed ground surface areas. Thus, they would have no implications for existing analyses related to biological, cultural, or other natural resources. The changes would not substantially affect water use during construction or operation; The relatively minor changes to the sizes and layout of facilities within the PSPP site will not substantially change the existing visual resources impact analysis. Relatively small changes to power block facilities in the interior of the roughly 3,000-acre plant site will be virtually unnoticeable from offsite locations.

The following paragraphs address the air quality implications of several proposed minor changes to the Project's emission sources, source locations, and modeling requirements, including:

- Reconfiguration of the power blocks;
- Increase in hours of operation of the cooling tower;
- Correction to the number of mirror wash events used in the air quality impacts analysis;
- Change to the maintenance vehicle travel within the solar field;
- Elimination of the vehicle travel associated with the use of RO concentrate for dust suppression; and
- Modeling to assess EPA's new 1-hour NO_2 standard (effective date April 12, 2010).

The reconfiguration of the power block by itself would be expected to have a negligible impact to the air quality impacts analysis. Moving an emission source relative to the fence line or other receptors would be expected to change the modeling results at any specific receptor; however, given the distance from the power block to the fence line, any changes in equipment location within the power block would have a negligible impact to a receptor at or beyond the fence line more than 1,000 meters away.

PSI has determined that the wet cooling tower used for heat rejection of the lube oil and generator cooling loops will have to operate 24 hours per day rather than 16 hours per day as was stated in the AFC. PSI expects that the cooling tower will not operate at full capacity during the additional 8 hours per day; however, emissions are estimated based on full load operation. The revised cooling tower emissions are shown in Table Air-2. The ambient air quality modeling analysis has been revised based on the emission increase. Modeling results are discussed and presented below.

The AFC and subsequent Data Request responses contain inconsistent information regarding the frequency of mirror washing; the AFC Project Description stated once per week during the winter months and twice per week during the summer months and the AFC air quality analysis was based on washing once per month during the winter and twice per month during the summer. PSI has confirmed that the AFC Project Description more accurately reflects the anticipated wash schedule. The emission estimates for mirror washing have been revised to reflect the more frequent wash schedule; the emission estimates are shown in Table Air-3. The modeling results have also been revised based on the correct wash schedule; modeling results are discussed and presented below.

PSI has developed a more comprehensive understanding of the maintenance inspection requirements for the solar field and has revised the maintenance vehicle mileage and corresponding emission estimates accordingly. Simply put, the maintenance inspection vehicles would travel perpendicular to the solar troughs and piping in the vicinity of the connectors rather than parallel to the troughs and piping. In this way, the travel distance for inspections and corresponding vehicle emissions are reduced substantially compared to initial estimates; the emission estimates are also shown in Table Air-3.

As noted elsewhere, PSI no longer proposes to use RO concentrate for dust suppression and instead will direct this wastewater stream to the evaporation ponds for disposal. Consequently, water truck use for dust suppression activities will not be required, and the emissions associated with water truck use would not occur. The maintenance vehicle emission estimates shown in Table Air-3 have been revised to eliminate the emissions associated with water truck use, and the ambient air quality modeling results have been revised based on this Project change; modeling results are discussed and presented below.

Finally, EPA has adopted a new ambient air quality standard for a one-hour averaging period for NO_2, effective April 12, 2010. The Applicant has prepared a modeling analysis for the 1-hour NO_2 standard to demonstrate compliance with this requirement.

The worst-case normal operations emissions of the Project ancillary sources were modeled along with vehicular emissions from the solar field maintenance vehicles. The emission rates used in the modeling were adjusted from those presented in the AFC and subsequent Data Request responses as discussed above. As was established in the modeling submitted as part of Attachment DR-AIR-5 to the Data Request responses in January 2010, there are no emissions sources within six miles of the PSPP site that emit more than five tons per year of any criteria pollutant. As a result, no modeling was performed of non-project sources beyond the addition of ambient background concentrations. The maximum modeled concentrations for Project emissions are summed with ambient background concentrations for comparison to the CAAQS/NAAQS in Table Air-4.

As shown in Table Air-4, the total concentrations comprised of maximum modeled impacts plus ambient background concentrations are below the CAAQS/NAAQS for all pollutants with the exception of the 24-hour PM10 CAAQS and NAAQS, and the annual PM10 CAAQS.

For the PM10 impacts, the ambient background already exceeds the standards and Project contributions are relatively small (28 percent and nine percent of the 24-hour and annual PM10 CAAQS, respectively). Note that identifying appropriate background data for use in this analysis is difficult because while the Project site is in a part of Riverside County designated as attainment for PM10, the available background data are from monitoring stations that are located to the west in parts of Riverside County or other counties that are designated non-attainment for PM10. Additionally, the closest monitors are located in urban/industrial / agricultural areas which are unlikely to represent background pollutant concentrations in the Project area which is undeveloped desert.

A discussion of the modeling methodology and the modeling results are provided in the Modeling freport provided as Appendix A to this submittal. An archive of the modeling file is provided as Appendix B to this submittal.

ADDITION OF A TEMPORARY CONSTRUCTION POWER LINE FROM OFFSITE

Construction power will be provided to the site from Southern California Edison. Two alternative sources of construction power are being investigated: a feed from the existing 12.47-kV distribution line that feeds the microwave tower located southwest of the Corn Springs Road interchange (see Figure Palen Telecom and Power Routing 2), and a new 12.47 kV transmission line routed down the project transmission line right-of-way from Desert Center Rice Road. If the 12.47-kV distribution line located near the microwave tower South of I10 is the selected source, then the line will be extended under I-10 and routed into the PSPP site along the site access road. The Project will include construction of a 12.47-kV internal distribution system and step down transformers to provide power as needed to construction operations.

Implications for Project Impact Analysis:

Using temporary line power rather than portable generators lowers Project air quality impacts during construction. Emissions from power line construction would minimally increase emissions. However, installation of the temporary power lines would reduce the need for portable diesel-fueled generators and thus reduce NOx, SOx, VOC, CO and PM10 emissions during the construction period compared to the Project as described in the AFC. Lower air quality impacts are anticipated as a consequence of this Project change.

With respect to biological resources, the temporary construction power line corridor is outside the area surveyed for biological resources in 2009. Full protocol-level biological surveys of the proposed alignments are currently underway. Potential biological impacts are expected to be minimal as this improvement consists of the blading and paving of an existing dirt road segment, approximately one mile in length, and the temporary installation of wooden poles. The current biological surveys will ensure a level of biological resource data that matches the data derived from the 2009 surveys. Upon completion of these surveys, the results and the related impact analyses will be forwarded to the CEC and other reviewing agencies. In addition, any necessary additional mitigation provisions will be calculated.

With respect to cultural resources, the temporary construction power line corridor is outside the area surveyed for cultural resources in 2009. Cultural resource surveys for these additional areas are currently underway. These surveys will ensure a level of cultural resource data that matches the data derived from the 2009 surveys. Upon completion of these surveys, the results and the related impact analyses will be forwarded to the CEC and other reviewing agencies. The resources encountered will be incorporated into the Project's cultural resources evaluation and treatment programs.

RELOCATION OF THE EXISTING SCE 161-KV POWER LINE

There is an existing Southern California Edison (SCE) 161-kV Eagle Mountain-Blythe power line which runs in a northwesterly direction across the southwest portion of the PSPP site. PSI is working with SCE to relocate the SCE line within the BLM ROW. Figure T-Line 1, Palen 161-kV T-Line Relocation, provides an overview of the proposed relocation. The transmission line relocation is part of ongoing Project activities. The AFC identified this relocation as part of the proposed PSPP project. PSI is now making a slight alternation to the route of the relocated line to accommodate one 90-degree turn outside the fenceline rather than two 135-degree turns. This change was recently requested by Southern California Edison.

SCE will be required to remove approximately 6,200 feet of existing conductor, seven 65-foot

H-frame structures, one 65-foot three pole structure, and associated hardware and guying. The relocated power line will require SCE to install approximately 18 65-foot H-frame structures, three 65-foot three pole structures, approximately 8,000 feet of conductor, and associated hardware and guying. Because of the relatively limited size of the project, the temporary equipment and material staging area would be limited to 20 acres. An unimproved spur road would be required to access the relocated transmission line segments and structure locations.

New structure locations would first be graded and/or cleared of vegetation to provide a level and vegetation-free surface for footing and structure construction. Site preparation would also be required for the assembly of the structures to provide a level and vegetation-free area for the laydown, assembly, and erection of the structures. This laydown area would be approximately 150 feet by 75 feet (0.26 acre).

Implications for Project Impact Analysis:

Relocation of the Eagle Mountain-Blythe 161-kV line will not substantially impact air quality or water resources. Emissions associated with installation of power poles would represent a minimal increase in construction emissions and water consumption. The primary areas of concern with respect to the final gen-tie line route are biological and cultural resources because the selected route includes areas not previously surveyed for biological and cultural resources. The impacts to water resources are expected to be minimal given the relatively short run and limited soil compaction required to install the spur road, laydown area, and pole structures.

With respect to biological resources, portions of the 7,900-foot corridor proposed for the relocated line are outside the area surveyed for biological resources in 2009. Full protocol-level biological surveys for these additional areas are currently underway. It is anticipated that transmission line pole locations and access road construction will result in modest increases in impacts to Sonoran Creosote Bush Scrub and Desert Dry Wash Woodland vegetation. The current surveys will ensure a level of biological resource data matching that derived from the 2009 surveys. Upon completion of these surveys, the results and the related impact analyses will be forwarded to the CEC and other reviewing agencies. In addition, any necessary additional mitigation provisions will be calculated.

With respect to cultural resources, portions of the 7,900-foot corridor are outside the area surveyed for cultural resources in 2009. Cultural resource surveys for these additional areas are currently underway in order to ensure a level of cultural resource data matching that derived from the 2009 surveys. Upon completion of these surveys, the results and the related impact analyses will be forwarded to the CEC and other reviewing agencies. The resources encountered will be incorporated into Project cultural resources evaluation and treatment programs.

REFINEMENT OF THE DAILY CONSTRUCTION SCHEDULE

Based on refinements to the Project construction plan, PSI has determined that certain construction activities would have to be conducted at night in order to meet the Project schedule. For instance, it has been determined that concrete pours should be conducted at night; the high ambient temperatures during the daytime hours would jeopardize the quality of the concrete, as concrete cannot be poured if it is too hot.

PSI also believes that solar collector assembly work would have to be conducted 24 hours per day to meet the construction schedule. In addition, to provide a more comfortable work environment,

PSI would like to allow for certain other low-noise construction activities to be conducted at night, including pulling wire and welding. These activities would require operation of the concrete batch plant, generators, light plants, welders, forklifts, possibly small cranes, and miscellaneous other equipment.

Implications for Project Impact Analysis:

The resource areas potentially affected by the requested change in daily work schedule are primarily noise and air quality. Noise impacts potentially could be different because the additional work hours would occur outside normal work hours and include nighttime hours where ambient noise levels are lower than during the day. Also, the impacts of Project emissions on ambient air quality are affected by meteorological conditions. There are calm atmospheric conditions during non-daylight hours including the hours around dawn and dusk that must be taken into account when analyzing the impacts of construction activities in those times of the day.

With respect to noise impacts, PSI is willing to accept a limitation on construction activities outside the already proposed work hours that is consistent with the intent of Riverside County Noise Ordinance. This ordinance prohibits construction activities outside of specified hours within 1/4 mile of an existing residence, and PSI has recommended modification of a Condition of Certification NOISE-6 to make this limitation explicit.

In the AFC and subsequent responses to Staff Data Requests, PSI had proposed to limit construction activities to eight hours per day during the winter months and 10 hours per day during the summer months. Under the original plan, only limited construction activities would occur at night, or during the early morning or late afternoon hours when stable atmospheric conditions prevail. PSI provided ambient air quality modeling to demonstrate that under these circumstances, Project construction would not cause adverse air quality impacts.

Based on a review of the modeling results, the Applicant determined that the majority of the modeled impacts from construction activities were due to the heavy earthwork that would occur near the Project fence line. To evaluate the potential impact of the limited nighttime operations, we have assumed that no earthwork would occur outside of the daytime schedule previously evaluated, and thus emissions from graders, scrapers and dump trucks would not occur. All other construction equipment is assumed to be operational. The emissions from the non-earthwork equipment were evaluated using the modeling approach and methods described in the AFC and DR responses.

The results of the revised construction modeling are shown in Table Air-5. As shown in the table, all impacts, when added to the appropriate ambient backgrounds, are below their respective NAAQS/CAAQS with the exception of 24-hour and annual PM10, and 1-hour NO_2.

In the case of annual PM10 impacts, the maximum modeled annual mean for PM10 exceed the CAAQS when background concentrations are added because the PM10 air quality monitoring station data used for this Project show that the annual PM10 CAAQS is already exceeded in the area where the data were collected. Annual PM10 Project impacts represent only 17.7 percent of the CAAQS for annual PM10 and only 10.4 percent of the total impact to the annual PM10 concentrations when the worst-case background is considered.

For 24-hour PM10, the air quality monitoring station data used for this Project also shows that the CAAQS are already exceeded in the area where the data were collected. Project impacts by themselves are below the NAAQS and exceed the CAAQS on only one 24-hour period out of the

1,095 days modeled. In that instance, the CAAQS is exceeded at 4 receptors with a maximum concentration of 51.88 micrograms per cubic meter ($\mu g/m^3$) compared to the CAAQS of 50 $\mu g/m^3$. The four receptors are directly along the fence line to the north of the construction sources and within the PSPP right-of-way (ROW), with the diffuser area blocking public access to that fence line. Along with the very conservative nature of the modeling, the remoteness of the location and the extreme unlikelihood that the public would be at that location for any amount of time, the PM10 impacts are not expected to pose a risk to public health.

For 1-hour NO_2, a total of 907 hours, or 3.4 percent of the 26,304 hours modeled, indicated impacts which, when added to the maximum ambient background concentration over the most recent three years of available data, exceeded the 1-hour NO_2 CAAQS. As an additional refinement, time-matched background data was added to each modeled impact, and the sum compared to the 1-hour NO_2 CAAQS. The results of those added values are shown in Table Air-5. Of the 907 hours that were examined, it was found that only five hours out of the three-years modeled (less than one percent), when added to their time matched ambient background, would exceed the CAAQS, with a maximum total concentration of 397 $\mu g/m^3$. These impacts occurred on or within 200 meters of the fence line directly to the north of the solar array installation sources after dark. Again, because of the remoteness of the location, the fact that the impacts that exceed the CAAQS occur at night, and the inherently conservative nature of the modeling, the NO_2 impacts are not expected to pose a risk to public health.

Note that identifying appropriate background data for use in this analysis is difficult because while the Project site is in a part of Riverside County designated as attainment for PM10, the available background data are from monitoring stations that are located to the west in parts of Riverside County or other counties that are designated non-attainment for PM10. Additionally, the closest monitors are located in urban / industrial / agricultural areas which are unlikely to represent background pollutant concentrations in the Project area which is undeveloped desert.

Because these results represent the worst-case location for the modeled sources, the limited number of hours (less than one percent of the hours modeled) in which exceedances occur, the limited duration of the construction causing these impacts, the fact that what exceedances do occur do so within the Project ROW, and the liklihood that the background concentrations used in the analysis exceed the actual background levels in the Project area, the adverse impact to the public from construction activities within the constraints outlined in this discussion is expected to be minimal.

FINALIZATION OF THE TELECOMMUNICATIONS LINE

The Project will obtain telecommunications service from the telecommunications service provider that serves the Desert Center area. Voice and data communications would be provided by a new twisted pair telecommunications cable. The routing of this cable will exit the Project site in the right-of-way for the site access road, cross under I-10 west of the Corn Springs Road interchange and proceed to the microwave repeating tower located approximately 700 feet south of the freeway (see Figure Palen Telecom and Power Routing 2). At the microwave tower additional equipment will be installed to connect project communications with the telecom provider's network. Wireless telecom equipment will be used to support communication with Staff dispersed throughout the project site. The project would utilize electronic telemetry systems to control equipment and facilities operations for the site.

Implications for Project Impact Analysis:

The addition of new telecommunications equipment to the PSPP would not substantially change project impacts in any of the topical areas addressed in the AFC. The installation of this line is not expected to have an adverse impact to air quality resources because the construction requirements do not differ significantly from the construction plan and associated emissions presented in the AFC, and there are no operating emissions associated with this equipment.

With respect to biological resources, the telecommunications line corridor is outside the area surveyed for biological resources in 2009. Full protocol-level biological surveys of the proposed alignments are currently underway. Potential biological impacts are expected to be minimal as this improvement consists of trenching and burying the lines in the drainage ditch under the freeway approximately 30 inches deep while taking adequate steps to avoid erosion. The current biological surveys will ensure a level of biological resource data that matches the data derived from the 2009 surveys. Upon completion of these surveys, the results and the related impact analyses will be forwarded to the CEC and other reviewing agencies. In addition, any necessary additional mitigation provisions will be calculated.

With respect to cultural resources, the telecommunications line corridor is outside the area surveyed for cultural resources in 2009. Cultural resource surveys for these additional areas are currently underway. These surveys will ensure a level of cultural resource data that matches the data derived from the 2009 surveys. Upon completion of these surveys, the results and the related impact analyses will be forwarded to the CEC and other reviewing agencies. The resources encountered will be incorporated into evaluation and treatment programs.

REVISED LIST OF WATER TREATMENT CHEMICALS

Additional water treatment chemicals will be required for the boiler, RO system, clarifier, multimedia filters, and cooling towers. These additional water treatment chemicals (beyond what has already been provided in AFC Table 5.6-3) include soda ash, lime, sodium hypochlorite, coagulant, magnesium chloride, polymer, anti-scalant, sodium bisulfate, corrosion inhibitor, dispersant, sodium hydroxide, scale inhibitor, biodispersant, phosphate, amine, and hydrazine. Currently, detailed engineering changes to the water treatment process are being prepared, and we expect the revised Table 5.6.3 showing all additional process chemicals including quantities, hazardous material and CAS #s, relative toxicity and hazard class, RQ, PEL, storage description and capacity, and storage practices/special handling precautions, etc. will be provided to the CEC.

Implications for Project Impact Analysis:

Listed additional hazardous materials are typical water treatment chemicals; however, hazardous materials, such as sodium hydroxide, in sufficient concentration and quantity may trigger risk management plan or California Accidental Release Prevention requirements. All hazardous materials storage or process vessels will be designed in conformance with applicable American Society of Mechanical Engineers codes. Bulk storage tanks or totes will have secondary containment structures capable of holding the tank or tote volume plus an allowance for precipitation. Concrete containment structures will be coated with a chemical resistant coating to ensure long-term integrity of the containment structure.

As with all other aspects of the PSPP, appropriate safety programs will be developed to address hazardous materials storage and use, emergency response procedures, employee training requirements, hazard recognition, fire safety, first aid/emergency medical procedures, hazardous materials release containment/control procedures, hazard communications training, Personal Protective Equipment training, and release reporting requirements. In short, the additional chemicals on site would not affect Project impacts.

ADDITION OF AN ON-SITE FUEL DEPOT DURING CONSTRUCTION

A fuel depot will be constructed to refuel, maintain, and wash construction vehicles. It will occupy an area of approximately 75 feet x 150 feet and will consist of a fuel farm with two 2000-gallon on-road vehicle diesel tanks, two 8,000-gallon off-road vehicle diesel tanks, one 500-gallon gasoline tank, and a wash water holding tank. Each diesel tank would be subdivided into two compartments, an 8,000-gallon compartment for off-road diesel fuel and a 2,000-gallon compartment for on-road diesel fuel. The fuel farm will include secondary spill containment; a covered maintenance area, also with secondary containment; and a concrete pad for washing vehicles. (Please see the attached Figure Depot-1, Fuel Depot Layout for a generalized layout of the proposed fuel depot.)

Implications for Project Impact Analysis:

The gasoline storage tank is subject to air permit requirements under SCAQMD rules; the diesel tanks are exempt from permit requirements in the SCAQMD pursuant to Rule 219(E)(14)(c).

The emissions from the two 10,000-gallon diesel storage tanks and the 500-gallon gasoline storage tank proposed for PSPP were calculated using EPA's TANKS 4.09D tank emission estimation program and the maximum annual fuel usage during the construction and operational phases of the project. The maximum annual fuel usage was calculated from the CO_2 emissions derived from the OFFROAD2007 and EMFAC2007 models for each equipment and vehicle type used during the construction of the project. The CO_2 emissions were divided by the ARB's default CO_2 emission factor, which is based on the carbon content of the fuel, to estimate the fuel consumption. This method was selected to calculate fuel usage because the OFFROAD2007 model incorporates fuel economy and average load rates into the emission factors, so additional adjustments are not required. To prevent the underestimation of annual emissions, it was assumed that the maximum monthly fuel usage for the construction of the project would occur every month. The maximum annual gasoline and diesel usage from the operation of PSPP was taken from the GHG emissions calculations submitted in the DR responses, using the same method as described for construction. Note that this method would overestimate the fuel throughput and corresponding tank emissions during both construction and operations because some of the equipment is expected to be refueled offsite. Fuel Depot emissions are summarized in Table Air-6. The VOC emissions from these tanks are not expected to cause or contribute to a significant adverse air quality impact.

As noted in the PSPP AFC (page 5.6-12), diesel fuel is the hazardous material with the greatest potential for environmental consequences during Project construction due to the volume of diesel fuel that will be used in construction equipment and the frequent refueling that will be required). When refueling is needed, vehicles will enter a dedicated refueling area where secondary containment is present to minimize the impact to the environment. A dedicated location increases the ability to effectively manage spills, leaks, storage, handling, loading/unloading, and other activities associated with vehicle fueling. Any fuel spilled will be contained and promptly cleaned up

with no contaminated soil generated. If anything, this Project change is expected to decrease the potential for environmental impacts associated with refueling spills.

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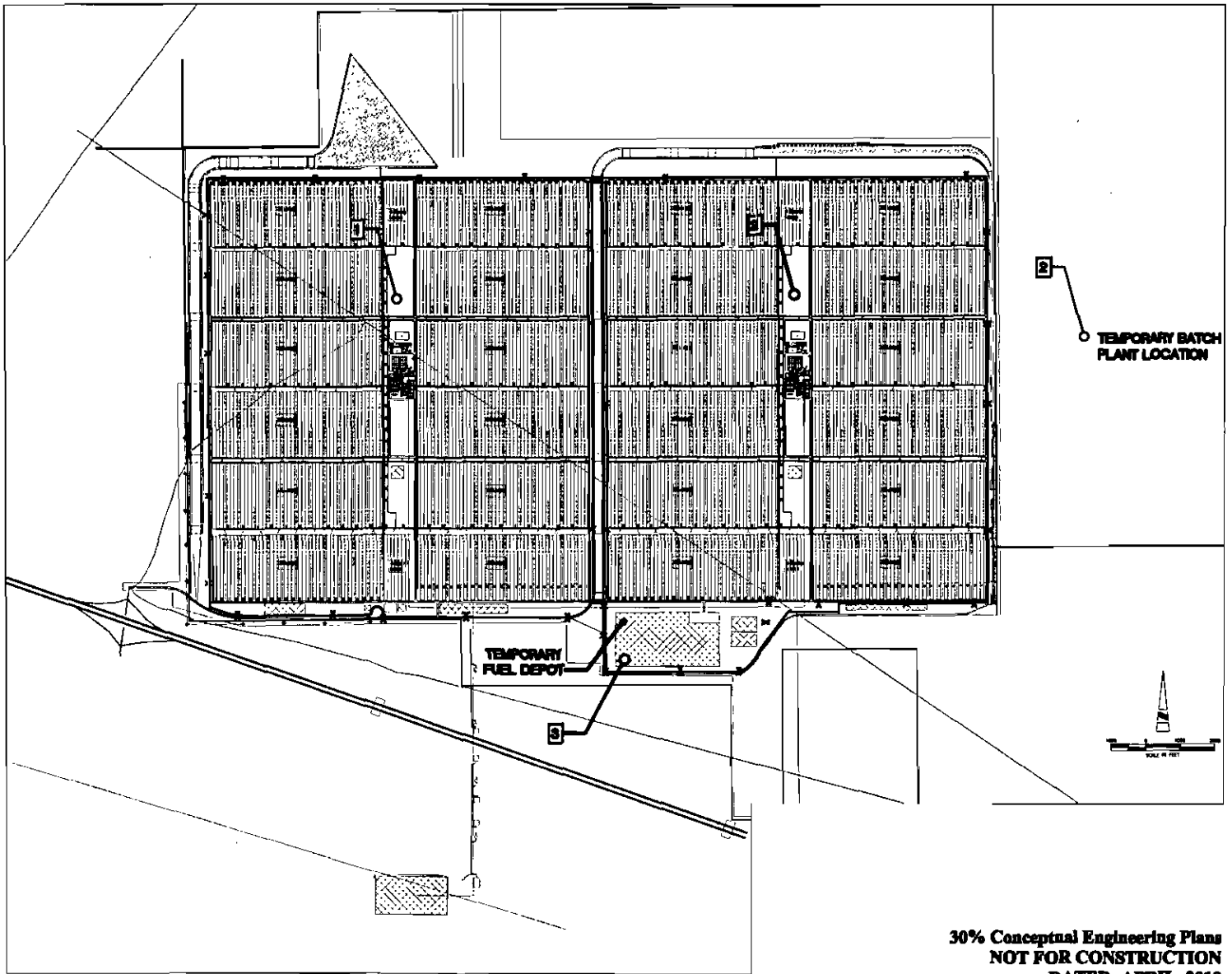


30% Conceptual Engineering Plans
NOT FOR CONSTRUCTION
DATED: APRIL, 2010

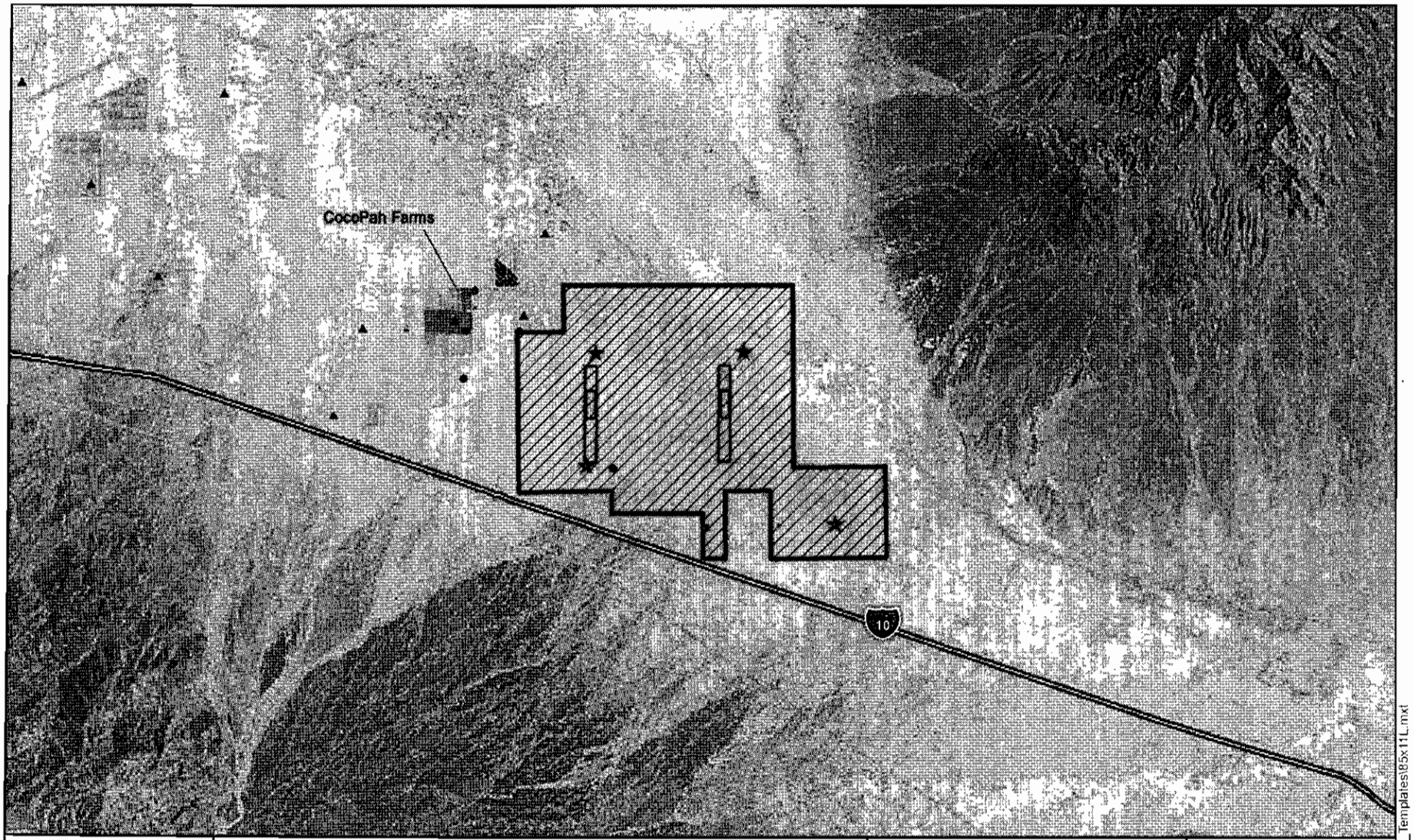
AECOM

Solar Millennium LLC

Palen Solar Power Project

Riverside County, California

TEMPORARY CONSTRUCTION FACILITIES



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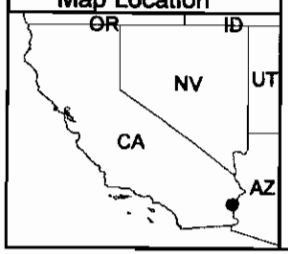

Legend

- Project Right-of-Way
- Groundwater Well Location based on Latitude and Longitude in USGS Database
- Groundwater Well Location based on the State Well Number (approximate)
- Location of Pumping Well Used in the Model

1 inch = 8,000 feet 0 6,000 12,000 Feet

Data Sources:
Air Photo, NAIP, 2005
Basemap, (Roads, streams, cities), ESRI

Palen Solar Power Project

Figure Soil and Water-1
Pumping Well Locations

Palen Solar I, LLC

AECOM

Project: 60139694
Date: April 2010

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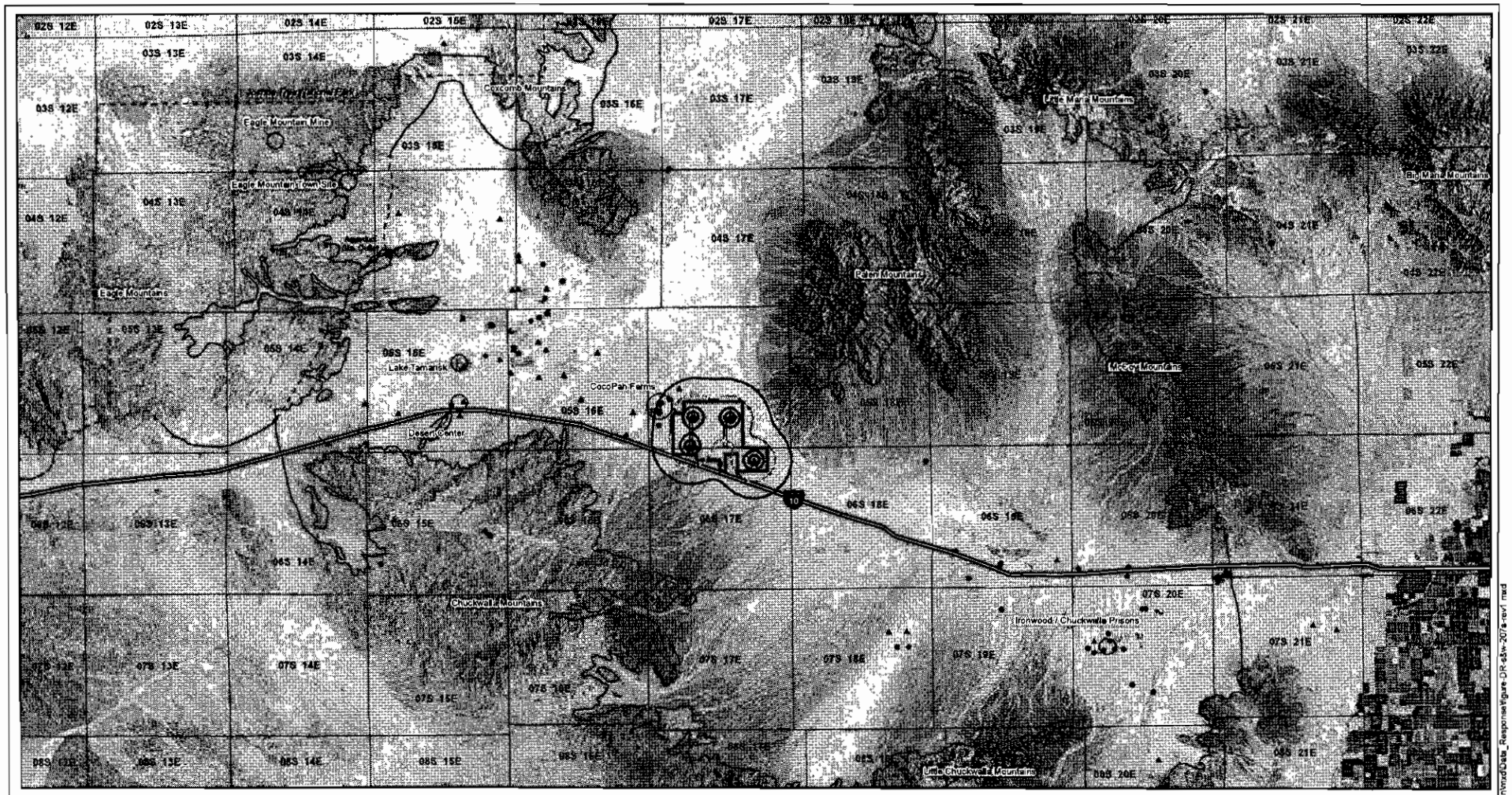

Map Location

Legend

- Project Right-of-Way
- Colorado River Aqueduct
- Colorado River Aqueduct (Dash showing underground interval)
- Chuckwalla Valley Groundwater Basin Boundary
- Freeway
- Geographic/Cultural Area of Interest
- Groundwater Well Location based on Latitude and Longitude in USGS Database
- Groundwater Well Location based on the State Well Number (approximate)
- Location of Pumping Well Used in the Model

Model Predicted Drawdown; Negative Indicates Reduction in Water Level in Feet

- -0.1
- -1
- -5
- -10
- -20

Data Sources.
Air Photo, California Spatial Information Library, NAIP, 2005 Riverside County

Water Basins, Department of Water Resources Website groundwater basin map file B118v3NAD27UTM10.zip

N W E S

0 4 8 Miles

1 inch = 21,120 feet

Palen Solar Power Project

Figure Soil and Water-2
Project Only
Revised Construction Water Supply

Palen Solar I, LLC

AECOM

Project: 60139694
Date: April 2010

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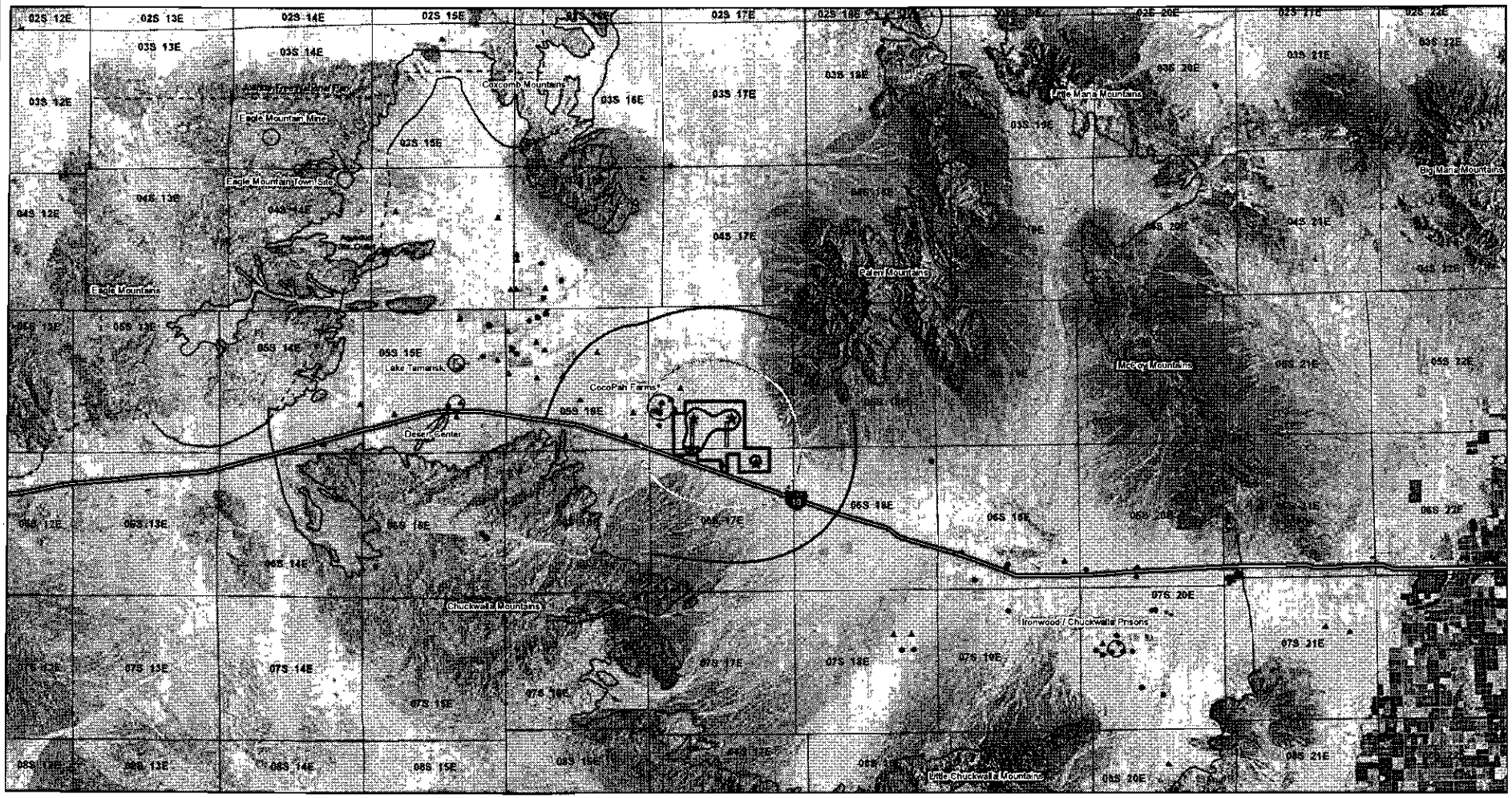

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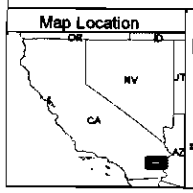

Legend

- Project Right-of-Way
- Colorado River Aqueduct
- Colorado River Aqueduct (Dash showing underground interval)
- Chuckwalla Valley Groundwater Basin Boundary
- Freeway
- Geographic/Cultural Area of Interest
- Groundwater Well Location based on Latitude and Longitude in USGS Database
- Groundwater Well Location based on the State Well Number (approximate)
- Location of Pumping Well Used in the Model

Model Predicted Drawdown, Negative Indicates Reduction In Water Level in Feet

- -0.1
- -1
- -5

Data Sources:
Air Photo, California Spatial Information Library, NAIP, 2005 Riverside County

Water Basins, Department of Water Resources Website groundwater basin map file B118v3NAD27UTM10.zip

N W E S

0 4 8 Miles

1 inch = 21,120 feet

Palen Solar Power Project

Figure Soil and Water-3
Project Only
Revised Operational Water Supply
End of 30 Years

Palen Solar I, LLC

AECOM

Project: 60139694
Date: April 2010

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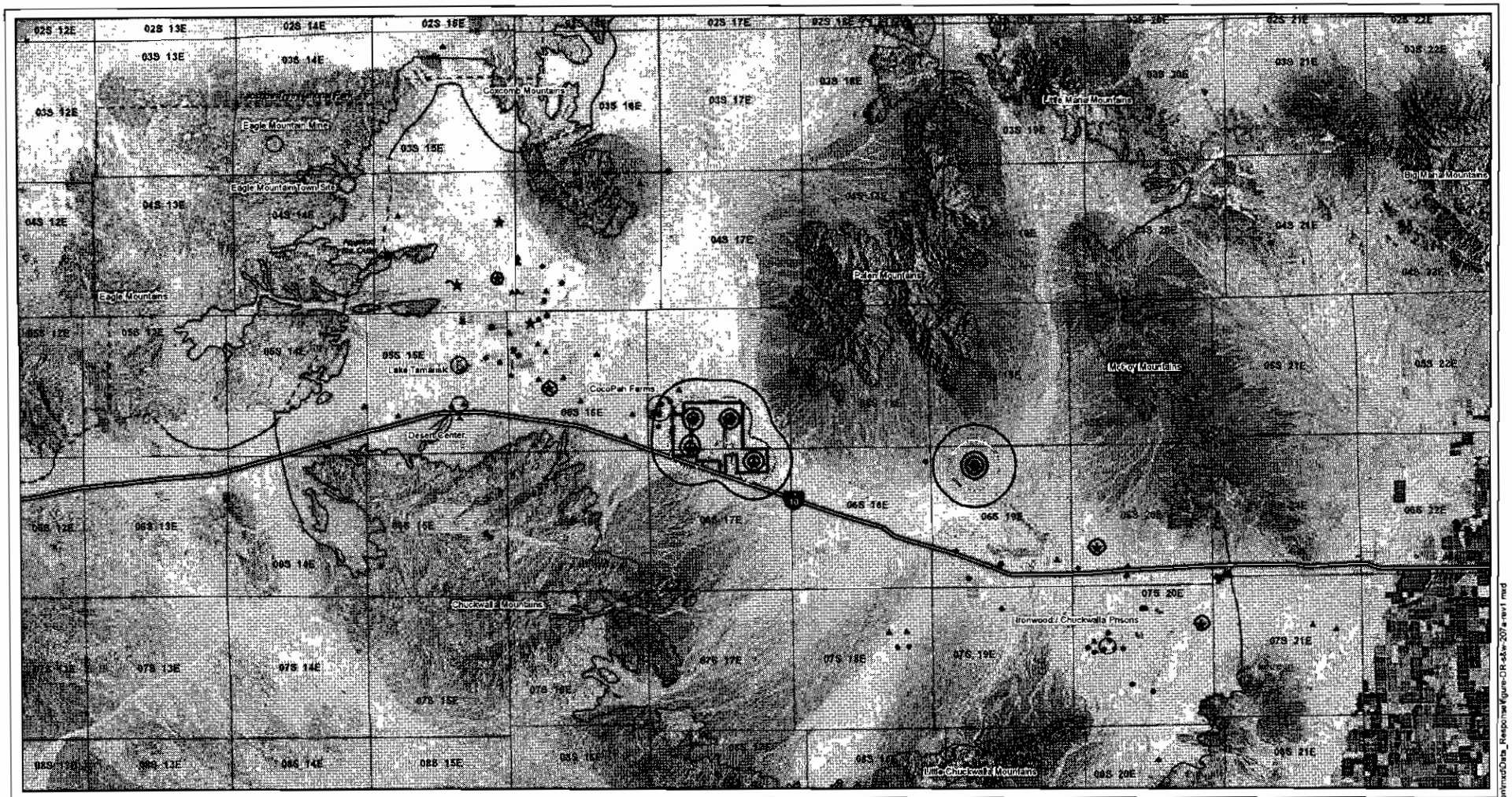
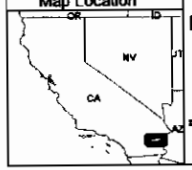


Map Location



Legend

- Project Right-of-Way
- Colorado River Aqueduct
- Colorado River Aqueduct (Dash showing underground interval)
- Chuckwalla Valley Groundwater Basin Boundary
- Freeway
- Geographic/Cultural Area of Interest
- Groundwater Well Location based on Latitude and Longitude in USGS Database
- Groundwater Well Location based on the State Well Number (approximate)
- Location of Pumping Well Used in the Model

Model Predicted Drawdown, Negative Indicates Reduction In Water Level in Feet

- -0.1
- -1
- -5
- -10
- -20
- -30

Data Sources
Air Photo, California Spatial Information Library, NAIP, 2005 Riverside County

Water Basins, Department of Water Resources Website groundwater basin map file B118v3NAD27UTM10.zip

N W E S

0 4 8 Miles

1 inch = 21,120 feet

Palen Solar Power Project

Figure Soil and Water-4
Cumulative Impacts
Revised Construction
Water Supply
End of Palen Construction

Palen Solar I, LLC

AECOM

Project: 60139694
Date: April 2010

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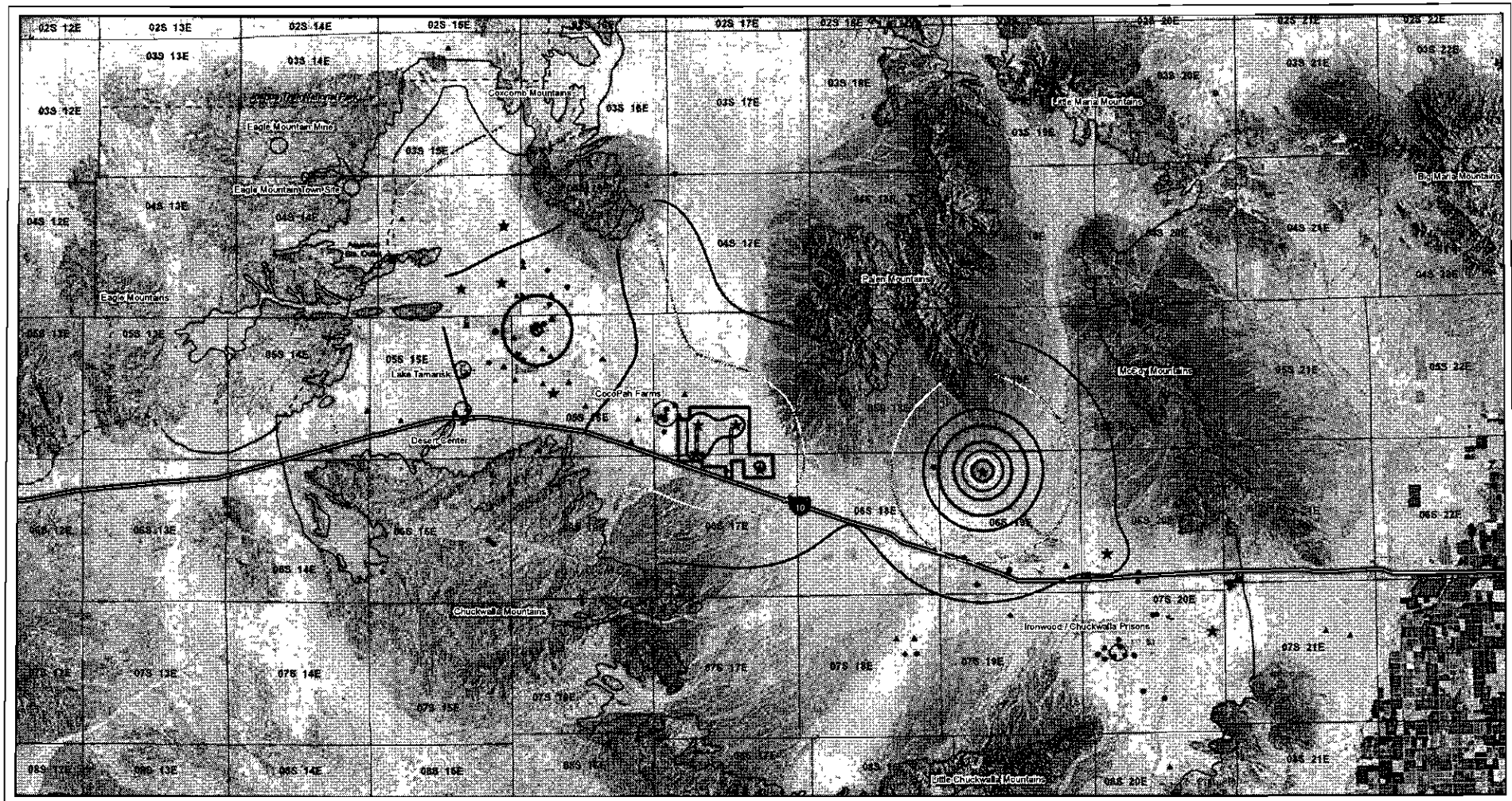
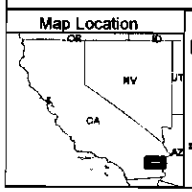


Map Location



Legend

- Project Right-of-Way
- Colorado River Aqueduct
- Colorado River Aqueduct (Dash showing underground interval)
- Chuckwalla Valley Groundwater Basin Boundary
- Freeway
- Geographic/Cultural Area of Interest
- Groundwater Well Location based on Latitude and Longitude in USGS Database
- Groundwater Well Location based on the State Well Number (approximate)
- Location of Pumping Well Used in the Model

Model Predicted Drawdown, Negative Indicates Reduction In Water Level in Feet

- -0.1
- -1
- -5
- -10
- -20
- -30
- -40
- -50
- -100

Data Sources.
Air Photo, California Spatial Information Library, NAIP, 2005 Riverside County

Water Basins. Department of Water Resources Website groundwater basin map file B118v3NAD27UTM10.zip

N W E S

0 4 8 Miles

1 inch = 21,120 feet

Palen Solar Power Project

Figure Soil and Water-5
Cumulative Impacts
Revised Operational
Water Supply
End of 30 Years

Palen Solar I, LLC

AECOM

Project: 60139694
Date: April 2010

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Attachment E

First-In-Line Solar Applications

Field Office	Serial Number	Project #	Applicant	Date Application Received	Acres	Megawatts (Mw)	Planned Technology	Geographic Area	Status of Application
El Centro	CACA 47740	AA01	Stirling Energy Systems, Inc. (SES) Solar Two LLC	1/6/05	6,017	750	Solar: pending solar thermal	Imperial County T16S Rgs. 10 and 11E	Joint EIS/IER with CEC as CEQA lead. AFC filed with CEC June 30, 2008. AFC/POD determined adequate under minimal criteria. NOI published 10/17/2008.NOA for DEIS be Targeted for 12/18/09
Palm Springs	CACA 48649	B249	First Solar (Desert Sunlight)	11/7/06	14,905	550	Solar: pending photovoltaic	Desert Center Area	Received cost recovery funds. Received POD. POD to be sent to NFO Contractors. Completing aerial topo mapping; initiating bio, cult surveys.
Needles	CACA 48668	B240	Solar Partners Ivanpah SEGS (DPT Ivanpah LLC)	11/17/06	6,873	400	Solar: pending solar thermal	Ivanpah, S of the CA/NV line T16N/R14E, T17N/R14E	Admin DEIS/FSA waiting on a few final chapters. Cumulative Impacts, Introduction, Biology and Air Quality. All other chapters reviewed by BLM and CEC. Estimate publication of NOA for DEIS/FSA 10/30/09.
Needles	CACA 48669	B238	First Solar Statelline (formerly OptiSolar, Inc.)	12/14/06	4,168	380	Solar: pending photovoltaic	Ivanpah Valley T17N/R14E	Modified application filed 8/7/09.
Palm Springs	CACA 48728	B251	NextEra Energy (FPL) - Genesis McCoy	1/31/07	20,608	250	Solar: pending solar thermal	Blythe Area, Eastern Riverside County	Received cost recovery funds. Received POD. ROW in process for monitoring, water well drilling.
Barstow	CACA 48741	B291	Solar Investments VI LLC (G-S)	1/18/07	8,384	800	Solar: pending solar thermal	(Baker) T. 14N., R.8E.	Application complete. POD revision rec. 01/09. Issue w/WWcorrdor.

First-In-Line Solar Applications

Barstow	CACA 48742		Solar Investments, Inc. (G-S)	1/18/07	10,611	1,000	Solar: pending solar thermal	(Silurian Valley) T16N, R8E	Application complete. original POD rec. but due to change in technology-PV is needed. New POD pending.
Palm Springs	CACA 48808	B248	Chuckwalla Solar LLC	9/15/06	4,099	200	Solar: pending photovoltaic	Desert Center area I	Received cost recovery funds. NOI being sent out (for publication) in Federal Register 11/9/07
Palm Springs	CACA 48810	B260	Solar Millennium (Chevron Energy Solutions Co. #2)	3/14/07	3,117	484	Solar: pending solar thermal	(Palen) Desert Center area in Eastern RIVCO	Sent, Revised Financial Plan and Request for Additional Cost Reimbursement Funds 10/19/2009
Palm Springs	CACA 48811	B260	Chevron Energy Solutions Co. #1	3/16/07	11,056	968	Solar: pending solar thermal	Blythe area in Eastern RIVCO	Sent, Revised Financial Plan and Request for Additional Cost Reimbursement Funds 10/19/2009 Requested updated POD 9/9/09 winthin 30 days. AFC filed w/ CEC 8/24/09
Barstow	CACA 48818	B263	First Solar (formerly OptiSolar, Inc.)	2/26/07	15,824	1,205	Solar: pending photovoltaic	(Opal) T.2N, R9E &R10E	Rec'd cost recovery funds. w/in 29 Palms segregation area. Rec'd POD. Review of POD pending
Barstow	CACA 48819	B264	First Solar (formerly OptiSolar, Inc.)	2/26/07	14,372	1,000	Solar: pending photovoltaic	(Desert Ruby) T3N, R5 & 6E; T4N, R5E	Rec'd cost recovery funds. w/in 29 Palms segregation area. Rec'd POD. Review of POD pending.
Ridgecrest	CACA 48820	B271	First Solar (formerly OptiSolar, Inc.)	2/13/07	5,325	745	Solar: pending photovoltaic	Mojave area near Hwy. 14 below Pin Tree Canyon, N. of Hwy. 58	No cost recovery received. Received POD.
Barstow	CACA 48875	B262	DPT Broadwell Lake LLC (Brightsource)	1/24/07	8,625	500	Solar: pending solar thermal	T'8N and 9N; R7E	Received cost recovery funds. Received POD.

First-In-Line Solar Applications

Palm Springs	CACA 48880	B252	NextEra Energy (FPL) - Genesis Ford Dry Lake	1/31/07	18,083	250	Solar: pending solar thermal	Blythe Area, Eastern Riverside County	Received cost recovery funds. Application complete pending 30% engineering design 9/9/09.
Barstow	CACA 48941	B265	First Solar (formerly OptiSolar, Inc.)	4/7/07	5,033	585	Solar: pending photovoltaic	(Desert Onyx) T11N, R3 & 4W	Received cost recovery funds. Received POD. POD review pending.
Needles	CACA 49002	B302	Leopold Companies, Inc.	4/2/07	35,466	4,100	Solar: pending solar thermal	Ward Valley T1S/R19E, T1N/R19E, T2N/R19E, T1N/R20E, T2N/R20E	POD forwarded to contractor for Review 8/26/09
Needles	CACA 49004		Boulevard Associates, LLC	5/14/07	6,959	1,000	Solar: pending solar thermal	Mesquite Hills T10N/R8E, T11N/R8E,T 11NR9E	POD forwarded to contractor for Review 8/26/09
Needles	CACA 49006	B323	Boulevard Associates, LLC	5/14/07	12,046	1,000	Solar: pending solar thermal	Killbeck T2N/R16E, T3N/R16E, T2N/R7E	POD forwarded to contractor for Review 8/26/09
Needles	CACA 49008	B324	Boulevard Associates, LLC	5/14/07	35,639	1,000	Solar: pending solar thermal	Cadiz lake T1N/R15E, T2N/R15E, T1N/R16E, T1S/R16E, T2N/R16E	POD forwarded to contractor for Review 8/26/09
Ridgecrest	CACA 49016	B299	Solar Millennium, LLC	3/23/07	3,811	745	Solar: pending solar thermal	Near Ridgecrest City Limits off of Brown Rd. Hwy 395	Received cost recovery funds. Received POD.

First-In-Line Solar Applications

Ridgecrest	CACA 49017	B273	First Solar (formerly OptiSolar, Inc.)	4/3/07	6,719	745	Solar: pending photovoltaic	On the W side of Hwy 395 near Kramer Junction in the proximity of the current solar power plant development and the former Federal penitentiary.	Rec'd cost recovery funds. Letter sent to OptiSolar re: re-established application (11/13/08)
Palm Springs	CACA 49097		Bull Frog Green Energy, LLC	6/13/07	6,634	2,500	Solar: pending photovoltaic	Blythe Ca area S. of I-10 in Eastern RIVCO	Received cost recovery funds. Received POD.
Palm Springs	CACA 49098		OTB Power Holdings, Inc.	6/13/07	8,746	1,000	Solar: pending photovoltaic	Blythe Ca area S. of I-10 in Eastern RIVCO	Appplication Rejected; Case Closed 10/19/2009
El Centro	CACA 49150	B284	SunPeak Solar	7/17/07	5,464	500	Solar: pending photovoltaic	Imperial County T13S, R12E	Received cost recovery funds. Received POD. Req'd name change documents 9/4/09.
Barstow	CACA 49361		First Solar (formerly OptiSolar, Inc.)	10/9/07	7,936	500	Solar: pending photovoltaic	(Amber) T4N,R3, R4E &R5E	**Denial of Application letter sent 11/13/09 due to non-payment of cost recovery funds.**
Palm Springs	CACA 49397	B292	OptiSolar, Inc. (Quartzite)	9/28/07	7,548	600	Solar: pending photovoltaic	Blythe area in Eastern RIVCO	Proffer Established. Received POD.

First-In-Line Solar Applications

Needles	CACA 49423		Solel, Inc.	7/23/07	6,614	500	Solar: pending solar thermal	Arrowhead T9N/R20E, T9N/R21E, T10N/R21E	Moved to 1st in line. Oct 09
Needles	CACA 49424		Solel, Inc.	7/23/07	7,453	600	Solar: pending solar thermal	Stedman T6N/R9E, T6N/R10E, T6N/R11E	POD forwarded to contractor for Review 8/26/09
Needles	CACA 49430		Iberdrola Renewables	9/20/07	13,373		Solar: pending solar thermal	Cadiz Lake T4N/R14E, T18N/R14E	POD forwarded to contractor for Review 8/26/09
Needles	CACA 49431		Boulevard Associates, LLC	9/21/07	10,199	1,000	Solar: pending solar thermal	Kellbaker Rd./ Amboy T6N/R12E, T7N/R12E, T6N/R13E	POD forwarded to contractor for Review 8/26/09
Needles	CACA 49432	B304	PG&E	9/24/07	5,313	800	Solar: pending other/ unknown technology	Cadiz/ Trilobite T5N/R13E, T5N/R14E	Received cost recovery funds. Received POD. POD to be sent to NFO Contractors. Completing aerial topo mapping; initiating bio, cult surveys.
Palm Springs	CACA 49488		EnXco Development, Inc.	11/13/07	1,327	300	Solar: pending solar thermal	Blythe area in Eastern RIVCO	Proffer Established. Received POD.
Palm Springs	CACA 49489		EnXco Development, Inc.	11/13/07	16,088	300	Solar: pending solar thermal	Blythe area in Eastern RIVCO	Proffer Established. Received POD.
Palm Springs	CACA 49490		EnXco Development, Inc.	11/13/07	20,608	300	Solar: pending solar thermal	Blythe area in Eastern RIVCO	Proffer Established. Received POD.
Palm Springs	CACA 49491		EnXco Development, Inc.	11/13/07	1,327	300	Solar: pending solar thermal	Blythe area in Eastern RIVCO	Proffer Established. Received POD.

First-In-Line Solar Applications

Palm Springs	CACA 49493	B300	Solel, Inc.	11/6/07	8,750	500	Solar: pending solar thermal	Desert Center N. on Hwy 177 in Eastern RIVCO	Application Rejected; Case Closed 10/19/2009; appeal period ends Nov. 20
Palm Springs	CACA 49494	B300	Solel, Inc.	11/6/04	7,317	500	Solar: pending solar thermal	Desert Center N. on Hwy 177 in Eastern RIVCO	Application Rejected; Case Closed 10/19/2009; appeal period end Nov. 20
Ridgecrest	CACA 49511		First Solar (formerly OptiSolar, Inc.)	11/28/07	8,943	600	Solar: pending photovoltaic	On the E side of Ridgecrest along the boundary of China Lake Naval Weapons Center through Poison Canyon in the Hwy 178 corridor to Trona	Recd cost recovery funds. Letter sent to OptiSolar re: re-established application (11/13/08)
Barstow	CACA 49537	AA02	Stirling Energy Systems, Inc. Solar One Phase 2	3/14/07	3,392	350	Solar: pending solar thermal	T.8&9N., R.5&6E	(9/22/09) Winzel & Kelly report on hydrology and 30% designs indicate feasible and sufficiently developed to move forward to NOI. (6/22/09) CEC Informational Hearing held; BLM NOI Scoping meeting concurrently; determining if applications can be merged into one application.

First-In-Line Solar Applications

Barstow	CACA 49539	AA02	Stirling Energy Systems, Inc. Solar One Phase 1	3/14/07	5,212	500	Solar: pending solar thermal	T.8&9N., R.6E	(9/22/09) Winzel & Kelly report on hydrology and 30% designs indicate feasible and sufficiently developed to move forward to NOI. (6/22/09) CEC Informational Hearing held; BLM NOI Scoping meeting concurrently; determining if applications can be merged into one application.
Barstow	CACA 49561	B323	Chevron Energy Solutions Co.	12/7/07	518	45	Solar: pending photovoltaic	T4N R2E. Secs; 19,20	Complete POD 6/25/09. EIS initiated; NOI published 7/23/09.
Barstow	CACA 49584	B313	Caithness Soda Mtn, LLC (former Solenergis)	12/18/07	7,995	350	Solar: pending photovoltaic	(Soda Mountain/Ra sor) T12N, R7E &8E	Application received. Detailed POD received 9/16/08. Revised POD req. due 3/09. Joint proj w/ SBCO
Barstow	CACA 49585		Power Partners Southwest (EnxCo)	12/12/07	3,710	1,000	Solar: pending solar thermal	(Troy Lake) T8N, R4E, T9N, R4E	Application received. Revised map. POD revision rec. inadequate from outline. Revised POD due 02/27/09
El Centro	CACA 49613	B326	First Solar (formerly OptiSolar, Inc.)	12/3/07	7,525	500	Solar: pending photovoltaic	Imperial County T13S, R9E; T12S, R9E	Received cost recovery funds. Signed MOU rec'd 6/29/09.
El Centro	CACA 49615	B319	Pacific Solar Investments, Inc. (Iberdrola)	9/5/07	28,174	1,500	Solar: pending solar thermal	Imperial County Ts 14S & 15 S, Rs.19 & 20 E	Inadequate POD submitted with application. Acreage needs to be refined. Working w/applicant to identify issues. POD ltr sent to applicant 7/31/08. Cost recovery funds rec'd.
Palm Springs	CACA 49702		Bull Frog Green Energy, LLC	6/1/08	22,717	2,500	Solar: pending photovoltaic	Blythe Ca area S. of I-10 in Eastern RIVCO	Received cost recovery funds. Received POD.

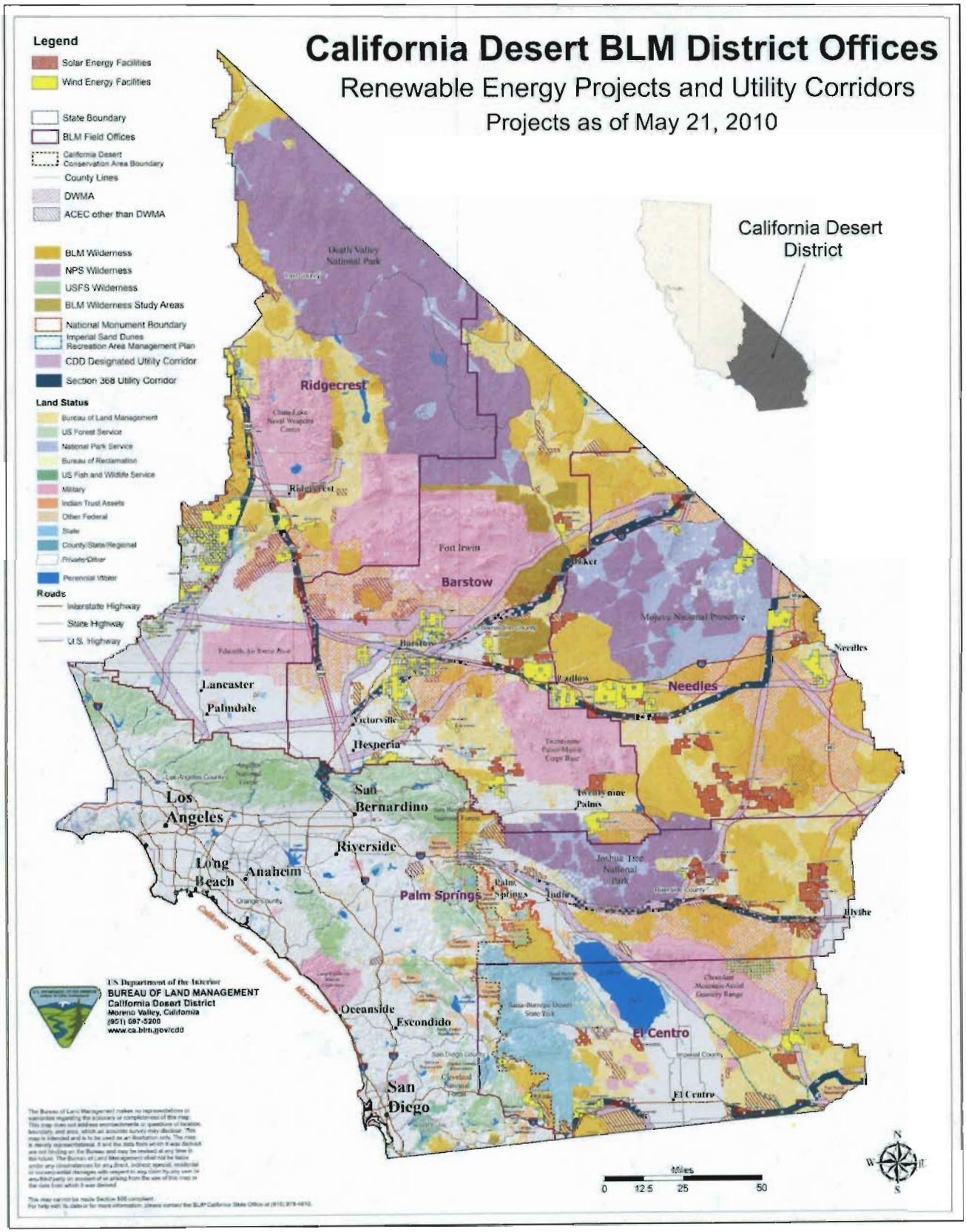
First-In-Line Solar Applications

Barstow	CACA 49811		NextLight Renewable Power LLC	3/24/08	7,691	500	Solar: pending photovoltaic	Ludlow 7N,7&8E	90-Day POD letter sent.
Needles	CACA 49813		Iberdrola Renewables	4/1/08	12,833	1,000	Solar: pending solar thermal	Cadiz-East T4N/R15E, T4N/R16E	Working with Proponent regarding solar testing. POD received
El Centro	CACA 49884	B321	SolarReserve, LLC	4/24/08	3,830	100-250	Solar: pending solar thermal	Imperial County T16S, R17E, Sec 21, 22, 23, 26, 27, 28, 33, 34, 35	Received cost recovery funds. Received 2nd POD. Met with applicant. Requested additional information within 30 days.
El Centro	CACA 50013	B320	Power Partners Southwest LLC, (EnXco)	4/7/08	1,064	300	Solar: pending photovoltaic	Imperial County T. 10 S., R. 14 E, sec.22, 26.	Partial rejection Sec 22 overlaps geothermal apln. Received cost recovery funds. Received POD.
El Centro	CACA 50174	B334	LightSource Renewables LLC	8/11/08	2,571	400	Solar: pending photovoltaic	Imperial County T16/17S, R17/18 E., South of I-8, North of State Hwy 98.	Cost recovery funds rcvd. POD rcvd.
Palm Springs	CACA 50379		Lightsource Renewables, LLC	8/8/08	2,446	550	Solar: pending solar thermal	Blythe Ca area S. of I-10 in Eastern RIVCO	Cost recovery agreement and MOU sent 11/14/08
Needles	CACA 50504		Ausra	11/17/08			Solar: pending solar thermal	Danby Lake	2nd in line
Needles	CACA 50506		Ausra	11/18/08	22,622		Solar: pending solar thermal	Danby Lake	2nd in line

First-In-Line Solar Applications

Needles	CACA 50552		LightSource Renewables LLC	12/19/08	10,330	500	Solar: pending solar thermal	Amboy T6N/R12E, T5N/R12E	Decisions Letter to Deny Application sent 8/27/2009
El Centro	CACA 51369	B383	Enio Rici Invenergy Solar Development LLC						

Attachment F


California Desert BLM District Offices
Renewable Energy Projects and Utility Corridors
Projects as of May 21, 2010
Legend
Solar Energy Facilities
Wind Energy Facilities
State Boundary
BLM Field Offices
California Desert Conservation Area Boundary
County Lines
DWMA
ACEC other than DWMA
BLM Wilderness
NPS Wilderness
USFS Wilderness
BLM Wilderness Study Areas
National Monument Boundary
Imperial Sand Dunes Recreation Area Management Plan
CDD Designated Utility Corridor
Section 368 Utility Corridor
Land Status
Bureau of Land Management
US Forest Service
National Park Service
Bureau of Reclamation
US Fish and Wildlife Service
Military
Indian Trust Assets
Other Federal
State
County/State/Regional
Private/Other
Perennial Water
Roads
Interstate Highway
State Highway
U.S. Highway
California Desert District
Ridgecrest
Barstow
Needles
Lancaster
Palmdale
Victorville
Hesperia
San Bernardino
Riverside
Los Angeles
Long Beach
Anaheim
Palm Springs
Indio
Twenty nine Palms
Blythe
Oceanside
Escondido
El Centro
San Diego
Fort Irwin
Baker
Yucca Valley
Joshua Tree National Park
Mojave National Preserve
Death Valley National Park
US Department of the Interior
BUREAU OF LAND MANAGEMENT
California Desert District
Moreno Valley, California
(951) 697-5200
www.ca.blm.gov/cdd
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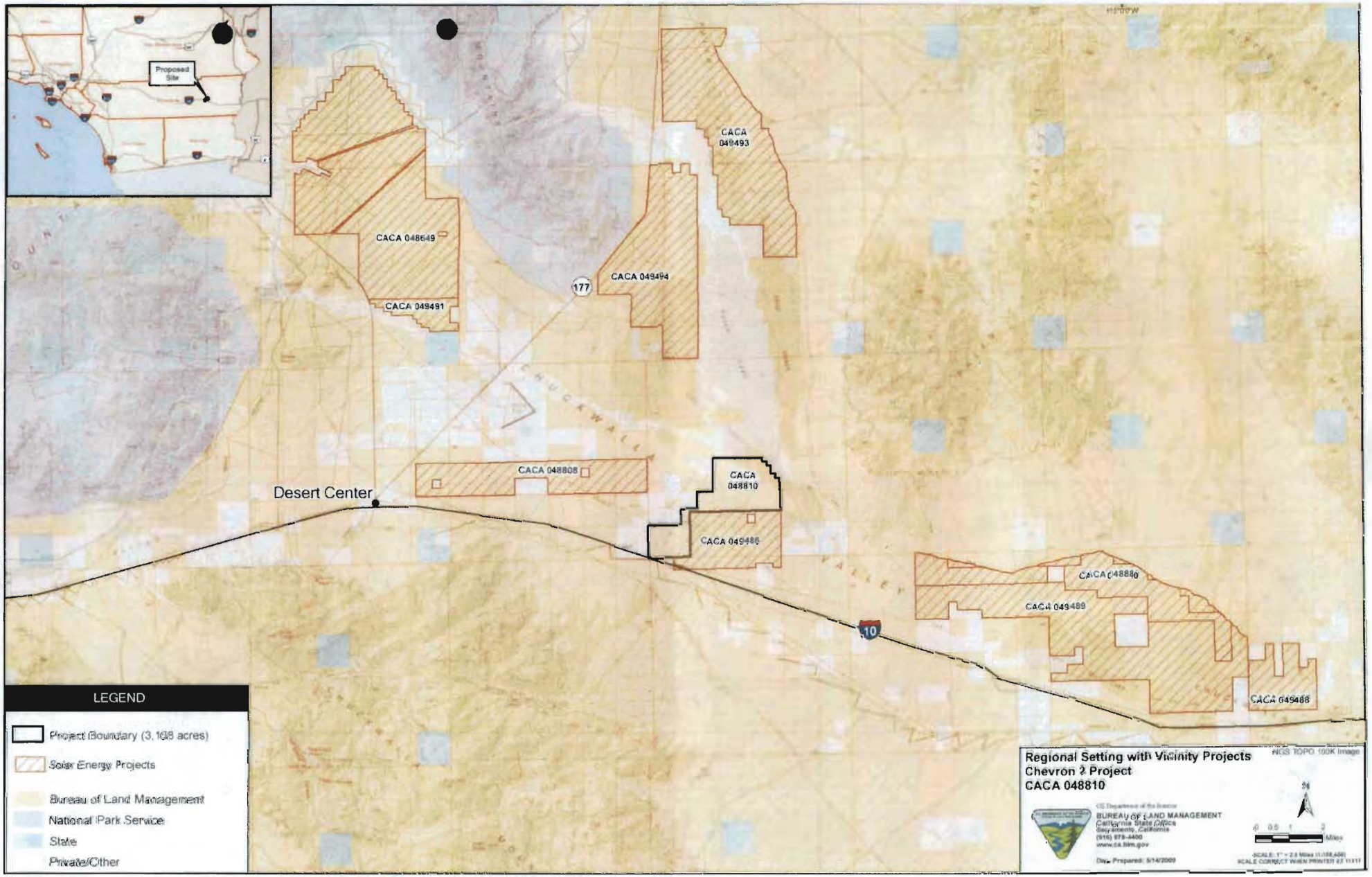
Proposed Site
CACA 049493
CACA 048649
CACA 049494
CACA 049491
177
CACA 048808
CACA 048810
Desert Center
CACA 049486
CACA 048880
CACA 049489
10
CACA 049488
LEGEND
Project Boundary (3,108 acres)
Solar Energy Projects
Bureau of Land Management
National Park Service
State
Private/Other
Regional Setting with Vicinity Projects
Chevron 2 Project
CACA 048810
NGS TOPO 100K Image
BUREAU OF LAND MANAGEMENT
California State Office
Sacramento, California
(916) 978-4400
www.ca.blm.gov
Date Prepared: 5/14/2009
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Miles

Attachment G

SURVEY APPROACH AND METHODOLOGIES FOR THE SOLAR MILLENNIUM PARABOLIC TROUGH PALEN SOLAR POWER PROJECT

2010

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April 2010

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Attachment 1 - Figures

Figure P1 - Palen Solar Power Project DT Survey Areas - Spring 2010

Figure P2 - Palen Solar Power Project WBO Survey Areas - Spring 2010

Figure P3 - Palen Solar Power Project Vegetation Mapping and Rare Plant Surveys - Spring 2010

Figure P4 - Palen Solar Power Project Jurisdictional Waters Survey Areas - Spring 2010

Attachment 2 - Target List of Special Status Plant Species for 2010 Surveys

Survey Approach and Methodologies for the Solar Millennium Parabolic Trough Palen Solar Power Project 2010

Biological Resource Survey Approach

After submittal of the Application for Certification (AFC) documents to the California Energy Commission (CEC) in 2009, an alternative site configuration was proposed for the Palen Solar Power Project (PSPP). Additionally, various Project design refinements were made related to potential transmission line routes and the substation area.

Additional biological surveys are needed in 2010 to gather data concerning an alternative site configuration and changes in linears in support of Project review, approval, and permitting. The following biological resource surveys will be conducted at the Project site during 2010: desert tortoise (*Gopherus agassizii;* DT) survey, burrowing owl (*Athene cunicularia*; WBO) survey, botanical survey (vegetation community mapping and rare plant surveys), golden eagle (*Aquila chrysaetos*; GOEA) survey, and jurisdictional waters delineation.

All protocols to be implemented in 2010, and described herein, are consistent with 2009 survey protocols, with the exception of a few modifications to the DT protocol, rare plant surveys, and jurisdictional waters surveys. DT protocol surveys for 2010 were initiated earlier than in 2009, and earlier than specified in established protocols (with U.S. Fish and Wildlife Service concurrence; see "Desert Tortoise Protocol" below). Botanical surveys in 2010 will address additional special-status plant species not previously included in 2009 surveys (see "Botanical Surveys" below). The jurisdictional waters delineation in 2010 will also include surveys of a 250-foot buffer of Project and Alternative disturbance areas not included in the 2009 surveys (see "Jurisdictional Waters Delineation" below).

Some survey protocols have already been initiated in 2010 at the Project site. DT surveys were initiated on March 16, 2010. Botanical surveys were initiated on March 8, 2010. GOEA surveys have also been initiated. Jurisdictional waters delineation surveys have been completed. WBO surveys have not yet been initiated at the PSPP site but are anticipated to begin during the week of April 26, 2010.

In general, surveys at the Project site will occur within 1) proposed Project disturbance areas (based on footprint refinements) and, 2) Project disturbance area buffer zones that were not previously surveyed in 2009. At the PSPP site, surveys will additionally occur within 3) proposed Project Alternative site disturbance areas (or Alternative disturbance areas) and 4) Alternative disturbance area buffer zones that were not previously surveyed in 2009.

A detailed description of the survey locations and methods for each biological resource survey being implemented in 2010 is provided below.

Biological Resource Survey Protocols

This section identifies the specific locations in which biological resource surveys have already been completed (e.g.., survey extent [2009]) and will be conducted in 2010 (e.g., survey areas [spring 2010] and buffer survey areas [spring 2010]) at the Project site (Figures P-1 through P-4; see Attachment 1 for all figures), and describes the detailed survey methodologies (i.e., protocols) that will be implemented in 2010. If Project or Alternative disturbance areas are further modified after the date listed on this

document, survey areas and protocols may be modified accordingly to meet the purpose and intent of documenting and evaluating the environmental baseline for biological resources on the Project site.

Desert Tortoise Protocol

DT surveys will include a combination of Presence-or-Absence surveys (i.e., 100 percent coverage surveys), and additional transect-based sign surveys within a Project buffer zone. DT Presence-or-Absence surveys will occur in suitable habitat within proposed Project disturbance areas and Alternative disturbance areas for which surveys were not previously conducted in 2009 (Figure P-1). Sign surveys will occur along CEC-required buffer transects (placed at 1,000-foot, 0.75-mile, and 1-mile intervals from disturbance areas) that were not previously surveyed in 2009 (Figure P-1); see below for more complete description of CEC-required buffer transects. A habitat assessment for DT has already been completed at the Project site in February 2010 and areas to be surveyed in 2010 were determined to be potentially suitable for DT.

Presence-or-Absence Surveys

Presence-or-Absence surveys (100 percent coverage surveys) for DT during 2010 will follow the guidelines published in the 1992 U.S. Fish and Wildlife Service (USFWS) survey protocol (USFWS 1992), with the following exception: no surveys of the five zone of influence (ZOI) transects that are typically required outside of and parallel to the disturbance area at 100, 300, 600, 1,200, and 2,400 feet will be conducted. Use of the USFWS 1992 protocol with the exception of ZOI transects (as occurred in 2009), rather than the revised 2009 protocol (USFWS 2009), was agreed upon by USFWS, California Department of Fish and Game (CDFG), U.S. Bureau of Land Management (BLM), and CEC in 2009 prior to survey initiation per an email communication dated March 10, 2009, from Julie Vance (refer to Section 2.2.1 of the AFC).

In accordance with the 1992 USFWS protocol, previously unsurveyed portions of the Project disturbance area at the Project site will be surveyed using transects spaced approximately 30 feet apart along transects oriented north to south or along transects that are parallel to the edges of the disturbance areas. The survey will be conducted by slowly and systematically walking linear transects while surveyors visually search for DT and sign. Particular emphasis will be placed on searching around the bases of shrubs and along the banks of shallow washes. All types of DT sign (live tortoises, shells, bones, scutes, limbs, scat, burrows, pallets, tracks, egg shell fragments, drinking sites etc.) will be recorded using a Global Positioning System (GPS) unit. If vegetation or topography reduces the surveyor's ability to see DT sign, the spacing between survey transects will be reduced, as necessary. This would occur in areas with high vegetation density or where topography obscures the surveyor's ability to see DT sign.

Any DTs observed will be measured at middle carapace length (MCL) and evaluated for health. Photographs of DT observations will be taken when possible (e.g., animal not deep in burrow). Photographs of large carcasses and/or unusual sign will also be taken. Burrows, scat, and shell remains will be classified using the Information Index for Desert Tortoise Sign: Burrows and Dens, Scats and Shell Remains as in the USFWS protocol (USFWS 1992).

DT Presence-or-Absence surveys were initiated on March 16, 2010 (with wildlife agency approval; see discussion below) at the PSPP site; at this time mean daily temperatures had reached a minimum of approximately 65°F, adequate annual forage was available for DTs, and evidence of DT activity was observed at the nearby Blythe Solar Power Project site. The proposal to initiate Presence-or-Absence surveys at the PSPP site earlier than the March 25 to May 31 survey period, as stated in the UFSWS 1992 protocol, or the April through May survey period as stated in the USFWS 2009 protocol (USFWS 2009), was presented in a letter to Pete Sorenson at the USFWS (dated March 2, 2010, attached) with subsequent USFWS concurrence via email from Pete Sorenson on March 16, 2010. DT surveys will continue roughly until the end of April or until the survey effort is completed (prior to May 31).

After completion of Presence-or-Absence surveys, results will be used to calculate estimated adult DT (> 160-mm MCL) abundance within disturbance areas surveyed in 2010. Abundance estimates will be calculated according to the 2009 survey protocol (*Preparing for Any Action That May Occur within the Range of the Mojave Desert Tortoise* (*Gopherus agassizii*) [USFWS 2009]) if protocol assumptions are met (e.g., minimum of 20 DTs are detected within the survey area).

Buffer Transect Sign Surveys

To comply with the recommendations of the draft CEC *Recommended Biological Resources Field Survey Guidelines for Large Solar Projects* (CEC 2007a), transects outside of and parallel to proposed Project disturbance areas will also be surveyed for DT and their sign (Figure P-1). These CEC-required buffer transects will be placed at 3,960 feet (0.75 mile) and 5,280 feet (1 mile) from and parallel to the edge of nonlinear portions of disturbance areas as well as at 1,000 feet from the edge of linear portions of disturbance areas (e.g., transmission line). Surveys along buffer transects will be conducted in a similar fashion as for transects described for Presence-or-Absence surveys, by slowly and systematically walking linear transects while surveyors visually search for DT, their sign, or other special-status species and their sign. Particular emphasis will be placed on searching around the bases of shrubs and along the banks of shallow washes. These transects are more broadly focused than the DT Presence-or-Absence protocol transects, described above, and are not a part of the 1992 USFWS DT protocol requirements. However, they provide additional information on DT occurrence and habitat suitability as well as other biological resources in the area surrounding Project or Alternative disturbance areas.

Western Burrowing Owl Protocol

WBO surveys will focus on suitable habitat in proposed Project disturbance areas Alternative disturbance areas, and surrounding buffer zones that were not surveyed in 2009 (Figure P-2). Surveys will follow the *Burrowing Owl Survey Protocol and Mitigation Guidelines* prepared by The California Burrowing Owl Consortium (CBOC) (1993). In accordance with the protocol, a habitat assessment (Phase I survey) for WBO will be conducted in previously unsurveyed portions of the Project and Alternative disturbance areas and in the surrounding 150-meter (approximately 492-foot) buffer zone. Following the Phase I survey, a focused burrow survey (Phase II survey) and WBO survey (Phase III survey) will be conducted in suitable habitat within proposed disturbance areas and the surrounding 492-foot buffer zone. Also, a more general survey of habitat suitability and occurrence of WBO, other special-status species, and sign will be conducted within a 1-mile CEC buffer surrounding disturbance areas (according to the CEC's Draft Recommended Biological Resources Field Survey Guidelines for Large Solar Projects [CEC 2007a]), if accessible to the biologists conducting the surveys (see "General Biological Survey Details," below).

The following describes, in more detail, the WBO survey approach and methodology that will be followed in 2010, and is consistent with surveys conducted in 2009.

Phase I Survey: Habitat Assessment

A habitat assessment (Phase I survey) for WBO will be conducted by qualified biologists in early spring 2010. The unsurveyed portions of proposed Project and Alternative disturbance areas and the surrounding 150-meter (approximately 492-foot) buffer zone will be evaluated for suitability for WBO, as well as unsurveyed areas within a 1-mile buffer of proposed disturbance areas. Suitable habitat for WBO includes open habitat with available burrowing opportunities, including agricultural fields (active and fallow), Mojave creosote scrub, desert saltbush, ephemeral washes, and ruderal areas. Suitable habitat will be mapped in the field using high-resolution field maps and GPS units. Any WBOs or WBO sign (e.g., whitewash, pellets, feathers) observed during the Phase I survey will be recorded and mapped.

Phase II Survey: Burrow Mapping

The Phase II burrow survey will be initiated in early spring and will mostly be conducted concurrently with focused Presence-or-Absence DT surveys. The Phase II burrow survey will occur in suitable WBO habitat within previously unsurveyed portions of proposed Project and Alternative disturbance areas, as well as within the 492-foot buffer zone, as required by the CBOC protocol. Where the Phase II burrow survey is conducted concurrently with Presence-or-Absence DT surveys, it will be conducted along pedestrian transects spaced at a maximum of 10 meters (approximately 30 feet) apart; otherwise, spacing between transects may extend up to 30 meters (approximately 100 feet), in accordance with the CBOC protocol. Biologists conducting the Phase II survey will record and map potentially suitable burrows (based on burrow dimensions and characteristics); they will also record and map WBO observations, presence and types of WBO sign (e.g., whitewash, pellets, feathers) observed, and active or potentially active WBO burrows (based on the presence and quality of sign at suitable burrows). These features will be recorded electronically using GPS units and on data forms; WBO observations and potentially active burrows will also be mapped on field maps. Phase II burrow data will also include the type of burrow, if known (e.g., kit fox [*Vulpes macrotis*]; DT), and a GPS identity code.

Phase III Survey: Burrowing Owl Surveys, Census, and Mapping

Phase III surveys will be initiated and completed during the peak breeding season (April 15 through July 15, as defined in the CBOC protocol) and will continue until all burrows with WBO sign have been visited on four separate days. Phase III surveys are intended to determine owl presence on the site and how the site is being used by WBO. It is anticipated that surveys will be completed by the end of May 2010. During the first survey visit of Phase III, previously mapped (during Phase II) suitable burrows will be surveyed by biologists carefully approaching on foot to determine the presence of WBOs and/or WBO sign, in order to assess potential burrow status. Subsequent survey visits (i.e., visits 2–4) will focus on burrows with WBO sign. Based on 2009 survey results, the Project sites are known to include several burrows with WBO sign that is old and degraded, sparse, and absent of any indication of current or recent use. Although all burrows with confirmed WBO sign (including those with old, degraded or sparse sign) will be surveyed four times, only burrows with sign of current or recent occupancy by WBOs will be identified as "potentially active" for purposes of this survey. For any potentially active WBO burrows (i.e., burrows with sign of current or recent occupancy by WBO) identified during visit 1, the burrow areas will be observed during subsequent visits (i.e., visits 2–4) using binoculars or a spotting scope, using the vehicle as a blind (if possible); all other burrows with sign will be approached on foot. It is important to minimize disturbance near active/occupied burrows; if WBOs are detected in association with a burrow, attempts will be made to determine the burrow status without approaching the burrow too closely on foot.

Phase III surveys will be conducted between 1 hour before and 2 hours after sunrise, and between 2 hours before and 1 hour after sunset. Phase III surveys will not be conducted during inclement weather (e.g., wind speeds > 20 miles per hour, heavy rain or fog, etc.). Field data recorded during each survey visit will include date; survey number; weather conditions (temperature, wind, precipitation, cloud cover); surveyor name; start and stop times for each survey visit; location of burrows surveyed during each visit; the suitability of each burrow, based on burrow dimensions and characteristics (collected during first visit to the burrow); presence, absence, and type of WBO sign (if present) at each burrow; occupancy status (active, potentially active, inactive, based on presence and condition of sign); documentation of any WBO detections, including abundance, age, sex, and behavior; and other wildlife species observed. Photographs will be taken of all potentially active burrow locations. In addition, photographs of individual WBOs and active burrows would be taken, if possible without disturbing owls. Any special-status species or their sign observed during these surveys will be recorded electronically using GPS and on data forms.

Botanical Surveys

Botanical surveys in 2010 will include vegetation community mapping (to be conducted during spring) and rare plant surveys (to be conducted during spring and fall, depending on the timing and amount of 2010

precipitation). Vegetation community mapping will occur within proposed Project disturbance areas, Alternative disturbance areas , and within associated one-mile CEC buffers that either were not previously surveyed or need to be resurveyed using a smaller minimum mapping unit (MMU) (refer to "survey areas (Spring 2010)" and buffer survey areas (Spring 2010)" on Figure P-3). Rare plant surveys will occur within the Project (or Alternative) disturbance areas and associated 1-mile CEC buffer areas that were not previously surveyed in 2009 (refer to "survey areas (Spring 2010)" and buffer survey areas (Spring 2010)" on Figure P-3).

Additionally, rare plant surveys at the PSPP site will also occur within proposed disturbance areas (Project or Alternative) and associated one-mile CEC buffer areas (Figure P-3) that were previously surveyed in 2009 (i.e., refer to "survey extent (2009)" on Figure P-3), to the extent necessary, to comply with the December 2009 CEC data request for consideration of 15 additional special-status plant species and detailed mapping of ribbed cryptantha (*Cryptantha costata*).

Botanical surveys were initiated on the PSPP site on March 8, 2010.

Vegetation Community Mapping

Vegetation community mapping during spring 2010 will be conducted in accordance with the same methods as 2009 mapping efforts, with minor updates based on 2009 field experience. These updates include the following topics:

- Scale of field maps: Field maps used for vegetation mapping will have a scale of 1 inch = 700 feet. Maps at a 200-foot scale (used in 2009) were determined to exceed the resolution of the aerial imagery available and were found to be too cumbersome given the large size of the Project sites being surveyed.
- Clarification of mapping intensity: Similar to 2009, survey intensity in 2010 will vary according to the MMU of disturbance areas versus the 1-mile CEC buffers; areas with smaller MMUs (disturbance areas) will be surveyed with greater intensity than areas with larger MMUs (1-mile CEC buffer areas). To accomplish this, field biologists will walk transects at a spacing that allows visual coverage of all unique vegetation signatures having an area equal to or greater than the defined MMU size.

A detailed methodology for 2010 vegetation community mapping is provided below.

Field biologists will use orthotopographic maps at a scale of 1 inch equals 700 feet for both vegetation mapping and recording rare plant points or polygons (see "Rare Plant Surveys" below). If rare plants are documented during vegetation mapping, these sites will be noted and revisited during focused rare plant surveys in order to map plants in more detail and accurately delineate species populations using GPS equipment. Vegetation communities will be classified according to Holland (1986). Sawyer and Keeler-Wolf (1995) and CDFG (2003) classifications will be used to provide additional detail where appropriate, such as denoting special or sensitive vegetation communities that are either known or believed to be of high priority for inventory in the California Natural Diversity Database (CNDDB) due to their unique nature, limited distribution (i.e., rarity), or importance for special status wildlife species.

Vegetation mapping within proposed Project (or Alternative) disturbance areas may be conducted concurrently with rare plant surveys, by having surveyors walk meandering transects; transect spacing will be based on habitat complexity and topography, and will be close enough to allow visual coverage of vegetation signatures at the minimum mapping unit (0.01 acre for riparian areas and 1.0 acre for all other cover types within proposed disturbance areas [Project or Alternative]). Within the buffer, the MMU for all land cover types, including riparian, will be 1.0 acre. Vegetation mapping within the 1-mile CEC Project (or Alternative) buffer areas will therefore be conducted by walking transects within native habitat that are spaced wider than those walked within disturbance areas, but allow visual coverage of vegetation

signatures that are 1.0 acre in size or larger. Developed land and agricultural areas will be surveyed by a combination of walking transects and selecting key vantage points from existing dirt access roads.

Dominant plant species present within each riparian and upland vegetation community mapped on site will be recorded according to the 50/20 dominance rule (U.S. Army Corps of Engineers [USACE] 1987). According to this rule, dominant plant species are defined as those that, when ranked in order of abundance, collectively make up 50 percent relative cover. Each dominant species individually makes up at least 20 percent relative cover, or is needed to surpass the 50 percent relative cover threshold. Once the dominant plant species are identified according to this method, they will be grouped according to relative cover: species below 20 percent, species ranging from 20 to 50 percent cover, and species exceeding 50 percent cover.

Additionally, a description of each vegetation community mapped on site will be recorded including the extent of disturbance, presence of special soils, potential jurisdictional waters, and habitat suitability for rare plant species (see "Rare Plant Surveys", below). Invasive species listed by the California Invasive Plant Council (Cal-IPC) as A-1, A-2, and B status species (Cal-IPC 2009) will be noted when occurring in high concentrations (approximately 108 square feet and larger) and in nearly monotypic stands. Potential invasive plant species that may be encountered during 2010 surveys on the Project site include tamarisk (*Tamarix* spp.), Saharan mustard (*Brassica tournefortii*), Mediterranean grass (*Schismus* sp.), red brome (*Bromus madritensis*), and cheat grass (*Bromus tectorum*).

Rare Plant Surveys

Rare plant surveys during spring 2010 will be conducted in accordance with the same methods as 2009 surveys, with updates based on 2009 field experience and CEC guidance. These updates include the following:

- Survey intensity: Detailed descriptions are now provided to explain the differences between survey intensity within the disturbance area versus that in the 1-mile CEC buffer, especially with respect to habitat suitability.
- Habitat suitability: methods for determining habitat suitability have been enhanced at the request of CEC.
- Complete tracklog: each biologist will have a GPS unit recording their path during surveys, and these data will be compiled and submitted with the deliverable.
- Search image: biologists will visit reference sites and/or herbaria specimens to obtain a search image for each targeted California Native Plant Society (CNPS) List 1B or List 2 plant species during the reconnaissance phase of surveys.
- Coachella Valley milkvetch (*Astragalus lentiginosus* var. *coachellae*) focused surveys: if suitable habitat is defined within the disturbance areas and surrounding 1-mile CEC buffers, these areas will be intensively surveyed according to the Coachella Valley milkvetch survey plan (described below). The need for focused Coachella Valley milkvetch surveys is unlikely based on research to date (see below). The survey plan has been created as a precaution.
- Deliverable enhancements: the botanical survey report will include all raw field data as attachments and will contain discussion of special status plant species occurrences with respect to onsite conditions as well as known species ranges and suitable habitats.
- Fall surveys: while late-season surveys were not feasible in 2009 due to limited rainfall, 2010 may have adequate late-summer rainfall to warrant fall surveys and additional consideration has been given to four fall-blooming special status plant species.

A detailed methodology for 2010 rare plant surveys is provided below, which includes 2009 methods as well as the updates noted above.

Rare plant surveys will follow survey guidelines from the following resources: 1) Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants (USFWS 2000); 2) Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFG 2009)[1]; 3) CNPS Botanical Survey Guidelines (CNPS 2001); and 4) Survey Protocols for Survey and Manage Strategy 2: Vascular Plants (Whiteaker et. al. 1998).

Target species for rare plant surveys will include special-status plant species that meet at least one of the following criteria:

- Covered under the Federal or California Endangered Species Act (ESA and CESA, respectively) (CDFG 2009)
- Listed as rare under the California Native Plant Protection Act (Fish and Game Code Section 1900 et seq.)
- BLM sensitive species (BLM Sensitive) (BLM 2009)
- CNPS List: 1A (presumed extinct in California), 1B (rare, threatened, and endangered in California and elsewhere), or 2 (rare, threatened, or endangered in California, but more common elsewhere) species are considered special status plant species if they meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Sections 2050 through 2098 (CESA) (CNPS 2009)
- CNPS List: 3 (plants about which we need more information a review list), or 4 (plants of limited distribution–a watch list was also recorded here) (CNPS 2009)
- Locally significant species, covered under the Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) (BLM 2002) or the West Mojave Plan (WEMO) (BLM 2005)

At the direction of BLM, cottontop cactus (*Echinocactus polycephalus*), hedgehog cactus (*Echinocereus* spp.), and all varieties of California barrel cactus (*Ferocactus cylindraceus*) encountered on site will also be recorded and mapped during rare plant surveys (LaPre 2009). The CEC has identified 15 additional target species above and beyond those considered in 2009 to be specifically targeted during 2010 rare plant surveys, 11 of which have potential to occur on the Project site (see Attachment 2). Attachment 2 contains the complete list of plant species that will be targeted during 2010 rare plant surveys.

Rare plant surveys will be "intuitive controlled" (per Whiteaker et al. 1998). The surveys will be conducted by walking transects placed systematically throughout disturbance areas (Project and Alternative) and associated 1-mile CEC buffers while searching for target plant species and suitable habitats. In disturbance areas not previously surveyed during 2009, botanists will traverse all representative habitats, providing complete visual coverage in areas determined to be suitable for target plant species (including microhabitats) (see Attachment 2 for target plant list). This will include closely spaced transects in the desert washes, incised channels, and sandy dune habitats (50-100 feet, possibly less depending on topographic complexity) and wider spacing in the flat creosote bush scrub and desert pavement (approximately 100-200 feet, or more depending on visibility). Transects will follow topographic relief rather than predefined survey grids, for the purpose of providing focused coverage of the desert washes.

1. This document replaced the DFG document entitled "Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened and Endangered Plants and Natural Communities."

Resurveys will occur as many times as necessary to ensure the blooming periods of all target rare plant species have been covered.[2] Additionally, disturbance areas that were previously surveyed in 2009 would be revisited systematically, as deemed appropriate based on field conditions, in order to comply with the December 2009 CEC data request for consideration of 15 additional special-status plant species and detailed mapping of ribbed cryptantha (*Cryptantha costata*).

In the 1-mile CEC buffer areas, suitable habitats associated with the major desert washes or sandy dune habitats will also be surveyed with complete visual coverage but the areas may not be resurveyed with the same rigor as the disturbance area and isolated microhabitats (areas much less than 1 acre in size and not associated with the desert washes or larger dune complexes) may not be examined with complete visual coverage at the discretion of the lead field botanist.

Suitable habitats will be determined based on geography, slope aspect, soil substrate, vegetation community, associated plant species, and familiarity with each species based on reference populations and historical surveys conducted in the region. Unsuitable habitats may be traversed while traveling between areas of suitable habitat, providing partial survey coverage in these areas. Each field botanist will carry a GPS to record their path through the Project site(s) each day.

The exception to the "intuitive controlled" method described above is with respect to the Coachella Valley milkvetch surveys. This federally endangered plant species must receive more focused attention in areas of suitable habitat where the species has potential to occur. Andrew Sanders has determined that Coachella Valley milkvetch is not currently documented outside of the Coachella Valley area. To reach this conclusion, Mr. Sanders thoroughly reviewed the vouchered collections (identified as Coachella Valley milkvetch) from the Desert Center area (Dice 980324-2; Dice 980324-3; and Sears 1173) and other collection data (e.g., http://ucjeps.berkeley.edu/consortium/ and University of California at Riverside (UCR) herbaria specimens). After careful consideration, Mr. Sanders found the Desert Center collections (i.e., all Coachella Valley milkvetch collections outside the Coachella Valley) to be *Astragalus lentiginosus* var. *variabilis* rather than *A. lentiginosus* var. *coachellae*.

Therefore, focused surveys for Coachella Valley milkvetch will not be necessary at the PSPP site unless the species is observed on site or Andrew Sanders encounters additional information leading to a reversal of his findings. Prior to the end of the survey window for Coachella Valley milkvetch (late May), a letter from Andrew Sanders will be provided to USFWS, CDFG, CEC, and BLM to finalize and defend the treatment of Coachella Valley milkvetch during 2010 rare plant surveys.

In the event that focused surveys for Coachella Valley milkvetch do occur, a survey plan has been prepared and is located below (see "Supplemental Survey Methods for Coachella Valley Milkvetch (if Necessary)", below).

The timing of rare plant surveys will be based on the most phenologically appropriate time for each target plant species; surveys will occur when reproductive structures (i.e., flowers and fruits) and distinctive leafy parts are present and easily identifiable. When possible, known locations of rare plants in the vicinity of the Project site will be visited to verify the status of these species during the 2010 growing season

2. In DR-BIO-81 of the AECOM Response to the CEC Data Request (December 2009), it was suggested that biologists should walk 10-20 meter parallel transects within all habitats of the disturbance areas, regardless of habitat suitability. This approach has been revised, since habitat complexity will dictate how far each botanist will be able to see and will therefore dictate the necessary spacing. AECOM botanists have consulted with regional experts including Andy Sanders and David Silverman to conclude that intuitive controlled surveys per Whiteaker et al. 1998 are sufficient for documenting a complete floral inventory on site (including the target special status plant species).

(germinating, flowering, seeding, etc.). If reference site visits are not possible, specimens from the UCR Herbarium will be studied to inform field biologists of important keying characters.

In general, the ideal survey window for 2010 will be closely associated with the rainfall pattern, considering both rainfall totals and the timing of precipitation. Several survey visits may be necessary to accommodate the distinct phenologies of each target rare plant species with potential to occur on the Project site, including surveys during both spring and fall (if rainfall is sufficient for fall-blooming species). It is anticipated that approximately 2-5 survey visits may be necessary to complete rare plant surveys.

During rare plant surveys (spring or fall) each field botanist will record a complete floral inventory, including the phenology(ies) observed (to document the blooming period and calibrate the timing of additional surveys). Plant nomenclature will follow that of *The Jepson Desert Manual* (Baldwin et. al. 2002). Additionally, scientific names will be used in all records to avoid confusion between taxa. Time will be allotted as necessary to confirm the identity of unknown species to the taxonomic level necessary to determine whether it is a target rare plant species or not (e.g., genus, species, or subspecies/variety).

If a target rare plant population is located, the population will be assessed for vigor and possible threats (e.g., off-road vehicle activity and invasive plants) and the number of individuals will be counted (or subsampled and population size estimated in the event of large populations). All sensitive plant locations identified will be recorded directly with submeter handheld GPS units and will be subsequently mapped on aerial photo-based field maps (700-foot scale orthotopographic maps). Rare plant detections will be mapped either as individual point locations (for single plants) or as occupied polygons (for groups of plants). The threshold distance for distinguishing point locations from polygons will be 7 meters; for example, plants occurring within 7 meters of each other will be included in a polygon, and plants beyond the 7-meter threshold will be documented using individual points).

In addition to mapping special status species occurrences, suitable habitat for the target species will be assessed and mapped. In many cases, not enough information is known about microhabitat preferences of a species to define its habitat beyond the level of vegetation communities.

CNDDB forms will be completed and submitted to CDFG (as publically available data) for all special-status plant species observed. Voucher specimens of special-status plant species will be collected if it is determined that such collection would not jeopardize the existing population. These collections will be submitted to the UCR herbarium.

Additional Survey Considerations

During vegetation mapping and rare plant surveys, field botanists will document any creosote bush rings observed if they are readily distinguishable.

Regional experts will be consulted for guidance through all phases of survey work for concurrence with the methods employed by AECOM survey teams. This includes botanists such as David Silverman (of Xeric Specialties Consulting) and Andrew Sanders (of the UCR Herbarium). These experts will receive copies of this methodology for approval, and once in the field they will train crews on species identification, conduct expert habitat assessments, and provide guidance on optimal survey timing for the targeted special status plant species.

Supplemental Survey Methods for Coachella Valley Milkvetch (if Necessary)

All surveys for rare plants will be conducted in compliance with the standardized guidelines issued by the regulatory agencies (USFWS 2000, CDFG 2000, and the CNPS 2001). The species specific methods presented below are intended to be a supplement to the standardized guidelines.

Surveys for Coachella Valley milkvetch will be conducted from approximately February through May 2010, depending upon climactic conditions. The number of surveys required will depend upon the phenology of the populations at the reference sites. It is presumed that two to three separate surveys will be required. Prior to initiating surveys, vouchered specimens deposited at the UCR herbarium will be studied to insure survey personnel are familiar with the species. Visits to one or more known locations of Coachella Valley milkvetch will be conducted to determine current phenology and detectability.

Systematic surveys will be conducted to detect presence and determine distribution of Coachella Valley milkvetch within the survey area. The survey area will only include areas of suitable Coachella Valley milkvetch habitat along the substation and transmission line disturbance area and buffer area. For systematic surveys, biologists will walk parallel transects 5 to 10 meters apart throughout the entire survey area. The survey transects will be recorded with a GPS track log using a submeter handheld GPS. Survey crews will include at least one member who has seen Coachella Valley milkvetch in its natural habitat. Other survey members will be trained using photographs and/or herbarium specimens.

If Coachella Valley milkvetch is detected within the survey area results will be recorded as described below. One herbarium specimen will be deposited at the UCR herbarium, if it is determined that collection will not jeopardize the existing population.

Jurisdictional Waters Delineation

A formal delineation for potential jurisdictional waters of the United States and of the State was completed in April 2010 at the Project site within portions of the disturbance area (Project and Alternative), and within a 250-foot buffer of these areas, for which surveys were not previously conducted in 2009 (Figure P-4). Additionally a qualitative functions and values assessment for ambient conditions and projected post-project conditions of these areas was also completed.

Formal Delineations for Potential Jurisdictional Waters of the United States

Jurisdictional waters of the United States are defined in 33 CFR. 328.3 (Definitions). Previously unsurveyed portions of the proposed Project disturbance area and Alternative disturbance area at the Project site have the potential for the presence of, at a minimum, two types of federally regulated waters, warranting the following:

1. Formal delineations for waters of the United States in the form of wetlands based on the three-parameter method.[3] The three-parameter method for identifying and delineating wetlands is outlined in and in accordance with Federal guidance and procedure following the *Corps of Engineers Wetlands Delineation* (Manual) (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (2008 Supplement) (Environmental Laboratory 2008).[4]

2. Formal delineations for other waters of the United States to define and identify the jurisdictional lateral extent of nonwetland waters using field indicators of ordinary high water mark (OHWM) as defined by 33 CFR 238.3(e), Federal guidance and procedure outlined in *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* (USACE 2008), and *Distribution of Ordinary High Water Mark*

3. The three-parameter method is the simultaneous presence (co-occurrence) of wetland hydrology, hydric soil, and hydrophytic vegetation.

4. The Manual and 2008 Supplement are guidance documents for delineating jurisdictional waters in the form of wetlands only.

(OHWM) indicators and their reliability in identifying the limits of "Waters of the United States" (Lichvar et al. 2006).

3. Other relevant Federal guidance and procedural documents (e.g., Regulatory Guidance Letter, Special Public Notices, and USACE Los Angeles District specific guidance)

Formal Delineations for Potential Jurisdictional Waters of the State

The California Code of Regulations (Title 14 CCR 1.72) defines a stream as: "...a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation." Under Section 1600 *et seq.* of the California Fish and Game Code (CFGC), CDFG regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. The limits of CDFG jurisdiction are defined in CFGC Section 1600 *et seq.* as the "bed, channel or bank of any river, stream or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit." However, in practice, CDFG usually extends its jurisdictional limit and assertion to the top of a bank of a stream, the bank of a lake, or outer edge of the riparian vegetation, whichever is wider.

CFGC Section 1602(a) is based on Title 14 CCR 720: "For the purpose of implementing Sections 1601 and 1603 of the Fish and Game Code which requires submission to the department of general plans sufficient to indicate the nature of a project for construction by or on behalf of any person, governmental agency, state or local, and any public utility, of any project which will divert, obstruct or change the natural flow or bed of any river, stream or lake designated by the department, or will use material from the streambeds designated by the department, all rivers, streams, lakes, and streambeds in the State of California, including all rivers, streams and streambeds which may have intermittent flows of water, are hereby designated for such purpose".

Boundaries for xeric riparian waters of the State will be determined (and recorded) by the presence of shelving and/or scour resulting in an established bank, bed, and channel of an ephemeral wash feature and its associated riparian areas (where applicable). In specific areas within the ephemeral wash channels, where evidence of shelving or scour is absent, subsurface investigations will be undertaken to identify established channel banks. Although some portions of the ephemeral washes present shelving with smooth-toe transitions, these features are composed of friable sand and are evidence of recent sand deposition covering the bank features.

For wetlands and other aquatic habitats occurring in California, CDFG relies on the USFWS wetland definition and classification system, which is based on *Classification of Wetland and Deepwater Habitats of the United States* (Cowardin et al. 1979). Therefore, jurisdictional wetland delineations within disturbance areas will be conducted based on the one-parameter[5] method outlined in CDFG/USFWS guidance documents and classification manual(s) to define presence and State jurisdictional extent. The Cowardin method requires diligence to avoid false positive conclusions (e.g., concluding that an area with no transitional relation to the aquatic system is a wetland based on presence of vegetation equally likely to be found in wetland or nonwetland circumstances).

Functions and Values Assessments

A qualitative assessment of the functions and values will also be conducted for ephemeral stream (i.e., xeric riparian) features identified in unsurveyed portions of proposed Project and Alternative disturbance

5. For Federal jurisdictional waters, a determination for the presence of wetland is based on the presence of three parameters occurring simultaneously at the area of investigation and study. These three wetland parameters are 1) hydrophytic vegetation, 2) hydric soils, and 3) wetland hydrology. Therefore, for State-defined wetlands, only one of these three wetland criteria is required to be present for the State to consider an aquatic feature a wetland.

areas at the Project site. This qualitative assessment utilized the Hydrogeomorphic Approach (HGM) to assess the physical, chemical, and biological functions and values of xeric riparian features utilizing a synthesis of the methodologies and definitions outlined in:

1. *A Hydrogeomorphic Classification for Wetlands* as a guide (Brinson et al. 1995)
2. *An Approach for Assessing Wetland Functions Using Hydrogeomorphic Classification, Reference Wetlands, and Functional Indices* (Smith et al. 1995)
3. *Wetland Values: Concepts and Methods for Wetlands Evaluation* (USACE 1979)
4. *The Ecological and Hydrological Significance of Ephemeral and Intermittent Streams in the Arid and Semi-arid American Southwest* (U.S. Environmental Protection Agency [USEPA] 2008)
5. USEPA Watershed Academy: *Wetland Functions and Values* (USEPA 2009)
6. U.S. Geologic Survey (USGS) Water Supply Paper 2425: *Wetland Functions, Values, and Assessment* (USGS 1996)

The assessment will be based on observations made during above-mentioned jurisdictional delineation field surveys and other resource surveys (e.g. cultural, botanical, and wildlife) occurring in 2010. The assessment is intended to quantitatively evaluate ambient and projected post-project desert aquatic (including xeric riparian) features without a reference site. Since the assessment will not be based on a comparison to an actual reference site in the field, the qualitative rankings of variables used for the assessment of the quality of functions and values will be confined to the quality of the habitats within the study area.

Brinson et. al. (1995), Smith et al. (1995), and USEPA (2008) will be used as the primary guidance documents for assessing xeric riparian function, which include assessment of the following four major functional categories:

1. Hydrologic Function
2. Biogeochemical Function
3. Plant Habitat Function
4. Animal Habitat Function

USACE (1979), USEPA (2009) and USGS (1996) will be used as the primary guidance documents for assessing xeric riparian values, which include assessment of the following seven major value categories:

1. Aquifer Recharge (including Base Flow and Water Supply)
2. Flood Protection
3. Water Quality
4. Economic
5. Aesthetic
6. Recreational
7. Cultural

Xeric riparian values 1 through 4 will be incorporated within xeric riparian functions because wetland values also arise from the many ecological functions associated with wetlands (USEPA 2009). Xeric riparian values 5 through 7 will be ascertained through subjective review during the jurisdictional

delineation field assessment, a review of related documents such as cultural resources reports, the Riverside or Kern County General Plans, and speaking with resource agency personnel.

Golden Eagle Surveys

A GOEA field survey will be conducted in 2010 of the PSPP site within proposed Project and Alternative disturbance areas and within an associated buffer zone; however, these surveys are being conducted by an entity other than the AECOM Team.

Helicopter-and ground-based raptor surveys shall be conducted, following the USFWS interim guidelines for GOEA surveys (USFWS 2010), to record and report occupancy (Phase 1) and productivity (Phase 2) of resident golden eagles including, but not limited to, the following:

- individual activities,
- nests and territories on and surrounding the subject solar farm project, and within an approximate 10-mile radius of the proposed Project (assumed USFWS requirement)

The first survey (Phase 1 helicopter survey) has already been completed and a second survey (Phase 2) will begin a minimum of 30 days after the Phase 1 survey was conducted.

General Biological Survey Details

In addition to above-described protocols, the following general surveys actions/approaches will be taken by the AECOM survey team.

- While conducting biological resource surveys at the Project site in 2010 (e.g., DT surveys, WBO surveys, vegetation mapping and rare plant surveys, etc.) biologists will also be looking for and recording occurrences of all sensitive, listed, or other special-status wildlife species or their sign, including but not limited to:
    - Potential bat roosting sites—caves, abandoned buildings, cliffs etc.
    - Nelson's bighorn sheep
    - American badger (*Taxidea taxus*)
    - Mohave ground squirrel
    - Desert kit fox (*Vulpes macrotis*)
    - Mojave fringe-toed lizard (*Uma scoparia*)
    - Loggerhead shrike (*Lanius ludovicianus*)
    - Bendire's thrasher (*Toxostoma bendirei*)
    - Crissal thrasher (*Toxostoma crissale*)
    - Gilded flicker (*Colaptes chrysoides*)
    - Gila woodpecker (*Melanerpes uropygialis*)
    - Raptors
        - Northern harrier (*Circus cyaneus*)
        - White-tailed kite (*Elanus leucurus*)
        - Cooper's hawk (*Accipiter cooperii*)
        - Peregrine falcon (*Falco peregrinus*)
        - Prairie falcon (*Falco mexicanus*)
        - Swainson's hawk
        - Golden eagle
        - Ferruginous hawk (*Buteo regalis*)

- All surveyors will be given Desert Tortoise Awareness training.
- All surveyors will be briefed on potential rare plants within their survey area, including descriptions and photographs/drawings. Biologists will record coordinates and take photographs of any potential occurrences of rare plants and communicate this information to an AECOM Team botanist for verification immediately.
- Within areas of the 1-mile disturbance area (Project or Alternative) survey buffer not previously surveyed, a more general survey of habitat suitability and occurrence of special-status species and their sign will be conducted (according to the CEC's Draft Recommended Biological Resources Field Survey Guidelines for Large Solar Projects [CEC 2007]), if accessible to the biologists conducting the surveys.

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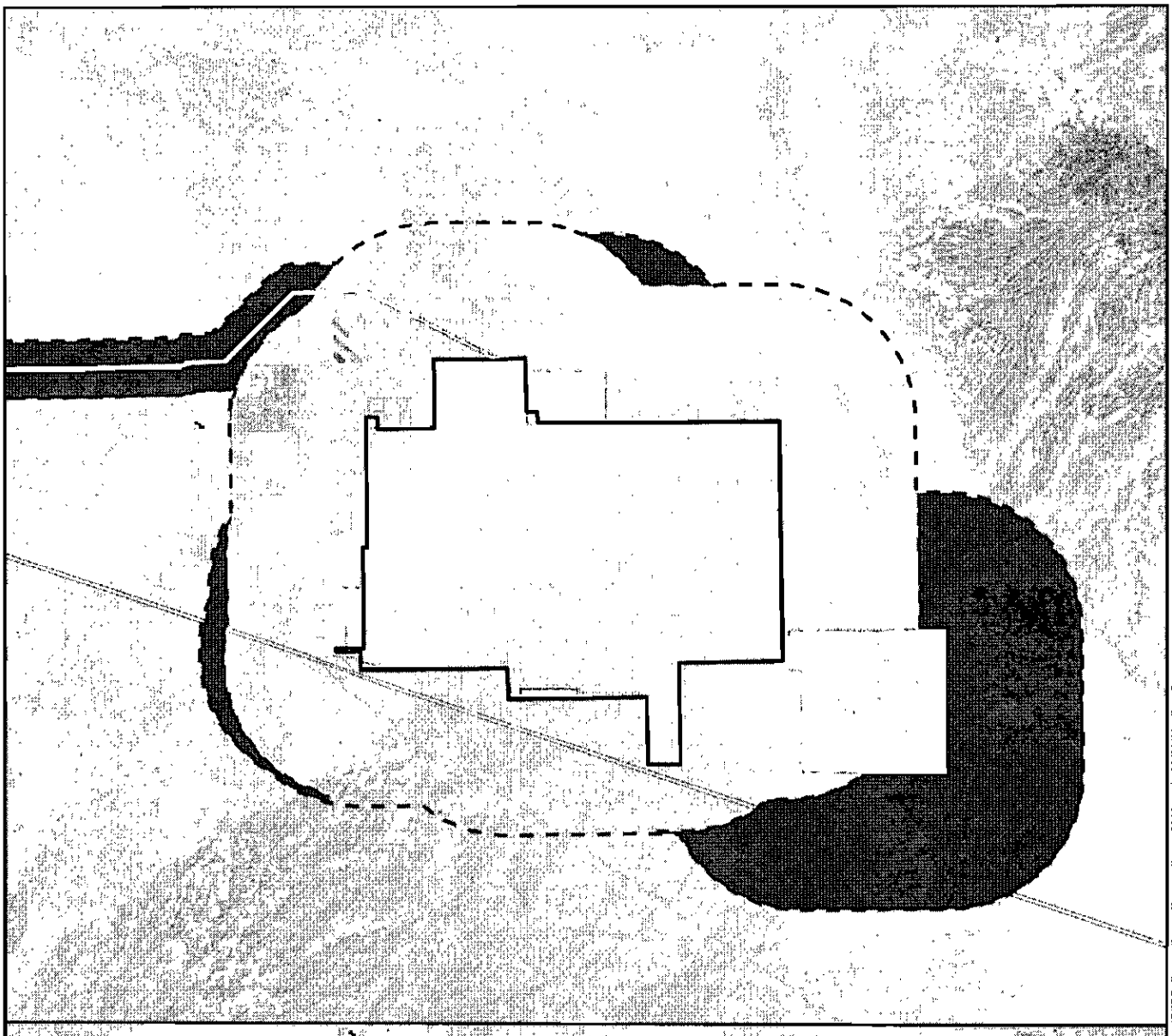
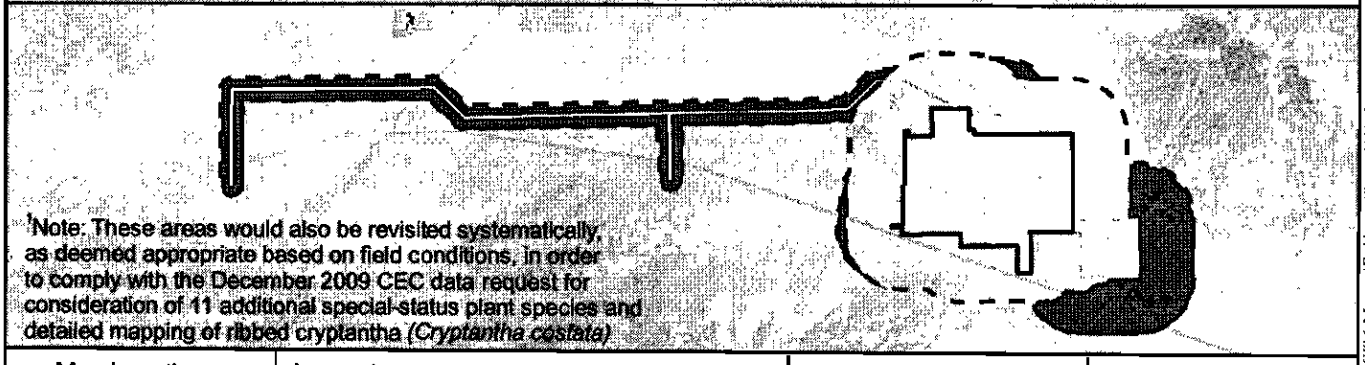
Attachment 1

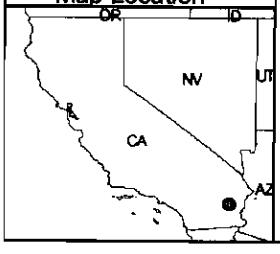
Figures





[1]Note: These areas would also be revisited systematically, as deemed appropriate based on field conditions, in order to comply with the December 2009 CEC data request for consideration of 11 additional special-status plant species and detailed mapping of ribbed cryptantha *(Cryptantha costata)*

Map Location



Legend

- Disturbance Area (March 2010)
- Survey Extent (2009)[1]
- Survey Areas (Spring 2010)
- BRSA (Surveyed 2009)
- BRSA (March 2010)
- Buffer Survey Areas (Spring 2010)

0 6,000 12,000 Feet

Palen Solar Power Project
Figure P-3

Vegetation Mapping and Rare Plant Survey Areas Spring 2010

Source: NAIP 2009; AECOM 2010

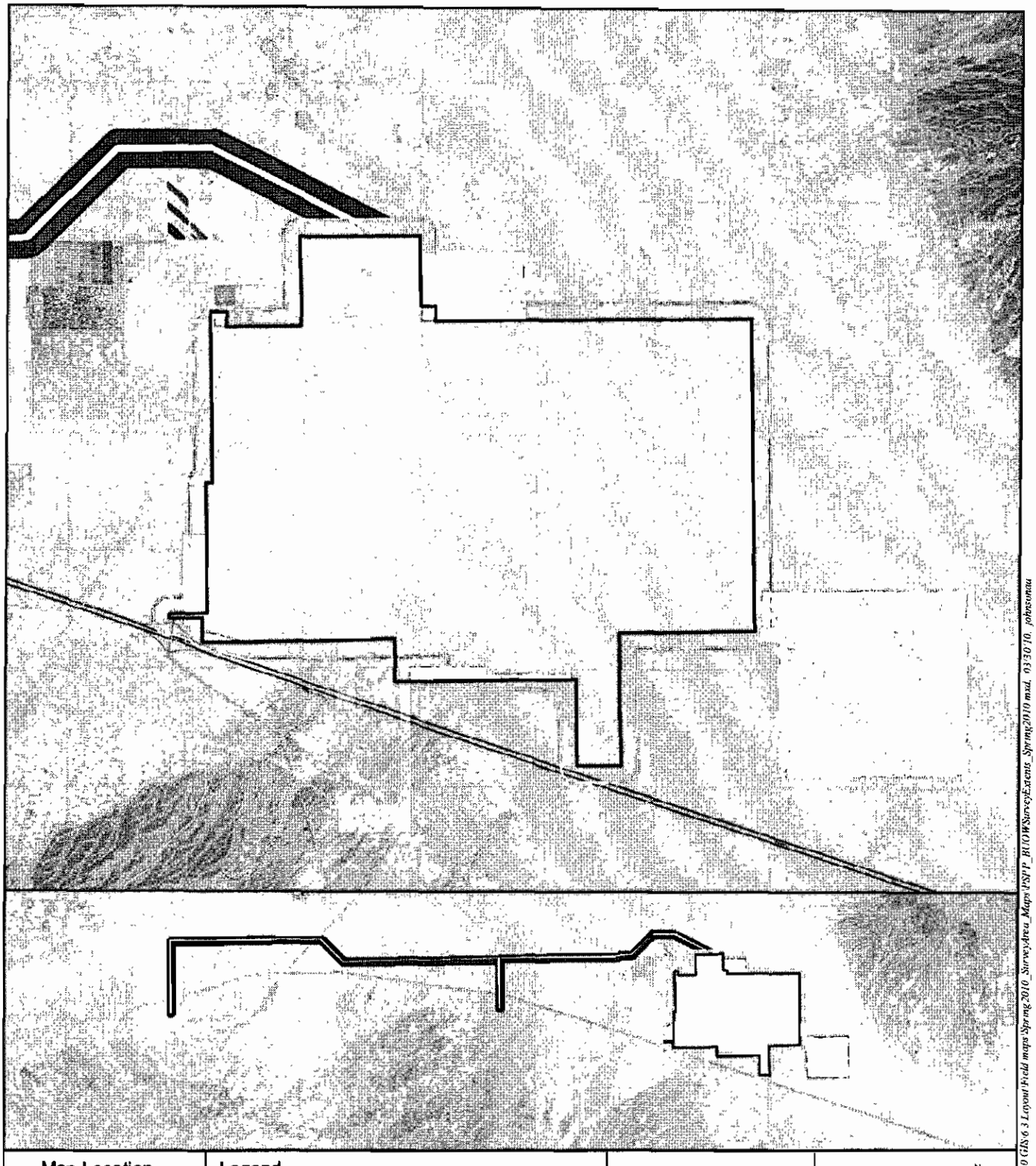
1 inch = 6,000 feet

N W E S

AECOM

Date: March 2010

Path: P:\2009\09080081 Sol Mil Palen\6.0 GIS\6.3 Layout\Field maps\Spring 2010_Survey Area_Maps\PSPP_BotanySurveyExtents_Spring2010.mxd, 03/30/10 SteinB



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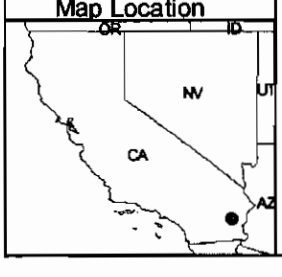


Legend

- Disturbance Area (March 2010)
- Survey Extent (2009)
- Survey Areas (Spring 2010)
- Buffer Survey Extent (2009)
- Buffer Survey Areas (Spring 2010)

0 4,000 8,000 Feet

Palen Solar Power Project Figure P-2

WBO Survey Areas Spring 2010

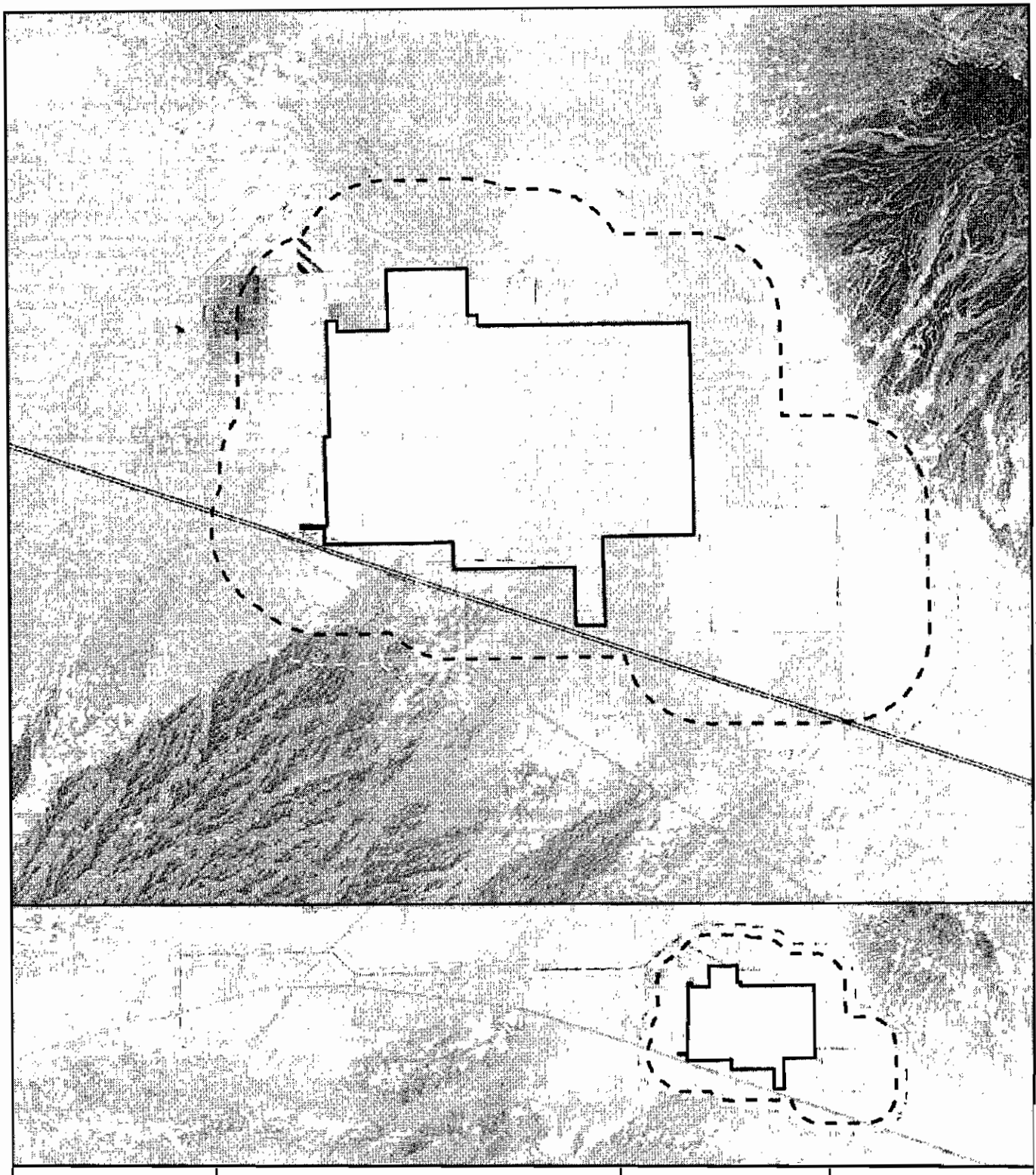
Source: AECOM 2010; NAIP 2009

1 inch = 4,000 feet

AECOM

Date: March 2010

Path: P:\2009\09080081 Sol Mil Palen\6.0 GIS\6.3 Layout\Field maps\Spring2010_SurveyArea_Maps\PSPP_BUOWSurveyExtents_Spring2010.mxd, 03/30/10, johnsonma



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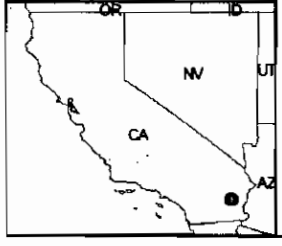


Legend

- Disturbance Area (March 2010)
- Survey Extent (2009)
- Survey Areas (Spring 2010)
- 1000-foot BufferTransect (Spring 2010)
- 0.75-mile BufferTransect (Spring 2010)
- 1-mile BufferTransect (Spring 2010)

0 6,000 12,000 Feet

Palen Solar Power Project
Figure P-1

DT Survey Areas Spring 2010

Source: AECOM 2010; NAIP 2009

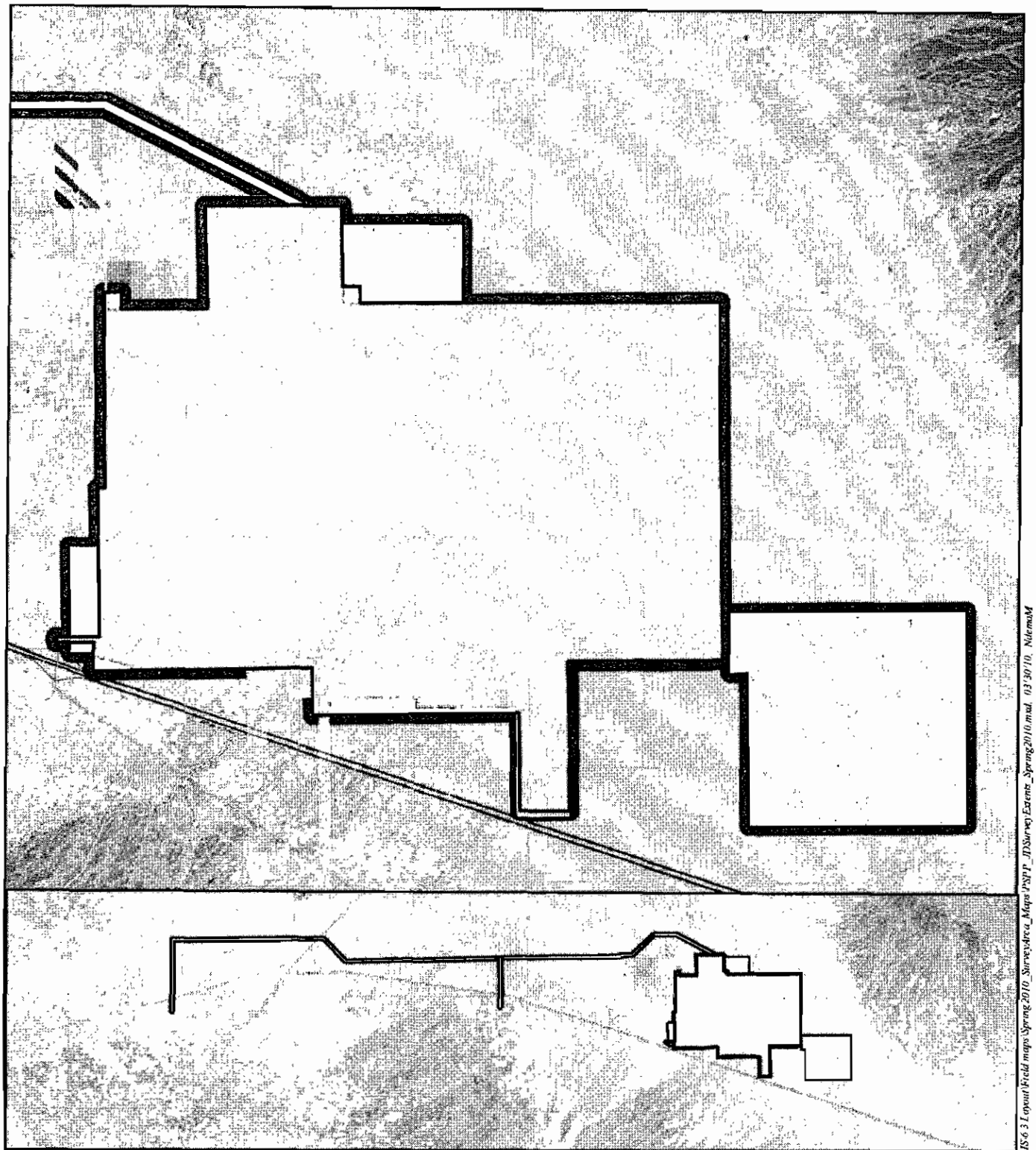
1 inch = 6,000 feet

N W E S

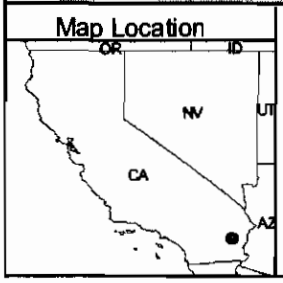
AECOM

Date: March 2010

Path: P:\2009\09080681 Sol Mil Palen 6 0 GIS\6 3 Layout\Field maps\Spring 2010_SurveyArea_Maps\PSPP_DETOSurveyExtents_Spring2010.mxd, 03/30/10, johnsonaa



Map Location



Legend

- Disturbance Area (March 2010)
- *Survey Extent (2009)*
- Survey Areas (Spring 2010)
- Buffer Survey Areas (Spring 2010)

0 3,500 7,000 Feet

Palen Solar Power Project
Figure P-4

Jurisdictional Waters Survey Areas Spring 2010

Source: AECOM 2010; NAIP 2009

1 inch = 3,500 feet

AECOM

Date: March 2010

Path: P:\2009\09080081\Sol Mil Palen\6 0 GIS\6 3 Layout\Field maps\Spring 2010_SurveyArea_Maps\PSPP_JDSurvey Extents_Spring2010.mxd 03/30/10 NitemoM

Attachment 2

Target List of Special Status Plant Species for 2010 Surveys

Attachment 2
Target List of Special Status Plant Species for 2010 Surveys
Palen Solar Power Project

Scientific Name	Common Name	Status[3]	Expected Fall or Spring[4]
Acleisanthes longiflora	Angel trumpets	CNPS List 2.3 NECO	Spring
Androstephium breviflorum[1]	small-flowered androstephium	CNPS List 2.2	Spring
Astragalus insularis var. harwoodii	Harwood's milkvetch	CNPS List 2.2 NECO	Spring
Astragalus lentiginosus var. coachellae	Coachella Valley milkvetch	ESA: Threatened CNPS List 1B.2	Spring
Ayenia compacta[1]	California ayenia	CNPS List 2.3	Spring
Calliandra eriophylla	Fairyduster	CNPS List 2.3 NECO	Spring
Calochortus striatus	Alkali mariposa-lily	CNPS: List 1B.2 BLM: Sensitive	Spring
Castela emoryi	Crucifixion thorn	CNPS List 2.3 NECO	Spring
Chamaesyce abramsiana[1]	Abram's spurge	CNPS List 2.2	Fall
Chamaesyce platysperma[1]	Flat-seeded spurge	CNPS List 1B.2	Fall
Colubrina californica	Las Animas colubrine	CNPS List 2.3 NECO	Spring
Condalia globosa var. pubescens[1]	bitter snakewood	CNPS List 4.2	Spring
Corypantha alversonii	Foxtail cactus	CNPS List 4.3 NECO	Spring
Cryptantha costata[1]	ribbed cryptantha	CNPS List 4.3	Spring
Cryptantha holoptera[1]	winged cryptantha	CNPS List 4.3	Spring
Cynanchum utahense	Utah milkvine	CNPS List 4.3 NECO	Spring
Ditaxis claryana	glandular ditaxis	CNPS List 2 .2 NECO	Spring or Fall
Ditaxis serrata var. californica	California ditaxis	CNPS List 3.2 NECO	Spring or Fall
Echinocactus polycephalus var. polycephalus[2]	cottontop cactus	No special status (considered but rejected)	Spring
Echinocereus engelmannii[2]	hedgehog cactus	CNPS List 1B.1 (var. *howei*)	Spring
Echinocereus triglochidiatus[2]	hedgehog cactus	No special status	Spring
Eriastrum harwoodii[1]	Harwood's woollystar	CNPS List 1B.2	Spring

Scientific Name	Common Name	Status[3]	Expected Fall or Spring[4]
Ferocactus cylindraceus[2]	California barrel cactus	No special status	Spring
Horsfordia alata[1]	pink velvet mallow	CNPS List 4.3	Spring or Fall
Hymenoxys odorata[1]	bitter hymenoxys	CNPS List 2	Spring or Fall
Imperata brevifolia	California satintail	CNPS List 2.1	Spring or Fall
Matelea parvifolia[1]	spearleaf	CNPS List 2.3	Spring
Mentzelia puberula[1]	Argus blazing star	No special status (taxonomy unresolved)	Spring
Physalis lobata[1]	lobed ground cherry	CNPS List 2.3	Fall
Portulaca halimoides[1]	desert portulaca	CNPS List 4.2	Fall
Proboscidea althaeifolia[1]	desert unicorn plant	CNPS List 4.3	Spring
Salvia greatae	Orocopia sage	CNPS List 1B.3 NECO	Spring
Selaginella eremophila	Desert spikemoss	CNPS List 2.2	Spring
Senna covesii	Coves' cassia	CNPS List 2.2 NECO	Spring
Teucrium cubense ssp. *depressum*	dwarf germander	CNPS List 2.2	Spring
Wislizenia refracta ssp. *refracta*	Jackass clover	CNPS List 2.2 NECO	Spring or Fall
Xylorhiza orcuttii	Orcutt's Woody-aster	CNPS List 1B.2 BLM Sensitive	Spring

1. Species requested to be surveyed by CEC (AECOM 2010)
2. Species requested to be surveyed by BLM (LaPre 2009)
3. Sensitivity Status Key

ESA Federal Endangered Species Act (ESA) Threatened

CNPS California Native Plant Society Lists:

1B: Considered rare, threatened, or endangered in California and elsewhere

2: Plants rare, threatened, or endangered in California, but more common elsewhere

3: Plants for which we need more information – Review list

4: Plants of Limited Distribution – A Watch list

Decimal notations: .1 – Seriously endangered in California, .2 – Fairly endangered in California, .3 – Not very endangered in California

BLM Special Status Plants (Palm Springs Field Office)

NECO Special-status species considered in analysis of the Northern and Eastern Colorado Coordinated Management Plan (BLM 2002).

4. Based on the known blooming periods of these plant species, many of these species are opportunistic with respect to rainfall. While they have been listed in this table as occurring Spring, Fall, or Both, actual blooming times will correlate more closely with the climate than the calendar. Field surveys will be comprehensive, not selective; all plants on this list will be considered during all surveys, regardless of the probability of finding them. A complete floral inventory will be recorded for the site as well.

AECOM

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April 22, 2010

Mr. Rick York
California Energy Commission
1516 Ninth Street, MS-40
Sacramento, CA 95814-5512

Subject: Biological Survey Methodologies for the Palen Solar Power Project Site, 2010

Dear Mr. York:

On behalf of Solar Millennium, LLC, AECOM is submitting to the California Energy Commission (CEC) the attached summary of biological resource survey studies and methodologies planned or currently being implemented for 2010 for the Palen Solar Power Project (Project) in the Colorado Desert area of California. The plant site is located near Desert Center, in eastern Riverside County. The purpose of this letter is to inform CEC and relevant resource agencies of our biological survey approach and methodologies for this Project site in 2010.

As a result of Project modifications and the development of Project alternatives (as required by the Bureau of Land Management [BLM] environmental review process) that occurred after surveys were completed in 2009, the AECOM Team is undertaking additional technical surveys and studies in 2010. These additional surveys are necessary to satisfy Data Requests issued by the CEC during the Applications for Certification (AFC) process and to support related environmental documentation for this Project, as required for Project approval. Survey results will also be used to update environmental baseline information to support permit applications to other federal, state, and local agencies. In particular the survey results will be used to update and fully characterize the existing biological resource conditions on the project site (including alternatives) as requested by the CEC in its Data Requests, to support determinations regarding Project (or alternative) impacts, to further formulate mitigation requirements, and to provide specific data needs of reviewing agencies.

Key to providing Project updates in support of necessary Project approvals and permits described above is the collection of data concerning the occurrence and distribution of biological resources within previously unsurveyed portions of the Project site (including alternatives) and associated buffers. The biological surveys and data collection planned and currently being implemented for 2010 take into account the physical characteristics of areas to be surveyed, the life histories of the target species, and the guidelines and protocols promulgated by the resource agencies.

Consistent with what was requested by the agencies in 2009, the AECOM Team is providing a written summary of the 2010 survey approach and methodologies, together with a detailed map of areas planned for survey at the Project site. Maps of planned survey areas for each biological resource at the Project site are enclosed. Please note that the maps showing planned survey areas are consistent with current Project (and alternative) design and may change with further refinement of the Project or alternative. In the event that the Project site or alternative are further modified after submittal of this letter, survey areas may be adjusted accordingly to meet the same purpose and intent of documenting and evaluating the environmental baseline for biological resources on the Project site. Biological surveys have already been initiated at the Project site (see attached document.

In submitting this information, it is our hope to keep CEC, and the other resource management agencies (BLM, CDFG, and USFWS) that have been involved in the review and approval of this Project, apprised of our efforts related to biological resource surveys on this Project site. It is Solar Millennium's desire to ensure that the surveys conducted at the Project reflect the most current CEC

AECOM

and resource agency guidance and that the methodologies being implemented are communicated to CEC and resource agencies early in the survey season.

Please call Bill Graham at (619) 233-1454 if you have any questions.

Sincerely,

William Graham
Principal
Bill.Graham@aecom.com

Enclosures:
Palen Solar Power Project Proposed 2010 Survey Protocols
Figures P-1 through P-4. Palen Solar Power Project Preliminary Survey Maps 2010

cc: Janet Eubanks, BLM
Holly Roberts, BLM
Mark Massar, BLM
Shelly Ellis, BLM
Larry LaPre, BLM
Magdalena Rodriguez, CDFG
David Hacker, CDFG
Pete Sorenson, USFWS
Tannika Engelhard, USFWS
Danielle Dillard, USFWS
Carl Benz, USFWS

Attachment H

AECOM

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May 7, 2010

Ms. Susan Sanders
California Energy Commission
1516 Ninth Street
Sacramento, California 95814

Dear Ms. Sanders:

Subject: Palen Solar Power Project (09-AFC-7) – Preliminary Spring 2010 Survey Results for Desert Tortoise, Rare Plants and Jurisdictional Waters

On behalf of Palen Solar I, LLC, AECOM is submitting preliminary results of biological surveys conducted for desert tortoise (*Gopherus agassizii*; DT), rare plants, and jurisdictional waters for the Palen Solar Power Project. This information was requested at the Palen and Blythe Staff Workshops conducted on April 28 and 29, 2010.

The preliminary results are presented in the tables and figures attached. Table 1 presents a summary of the observations of DT sign and DT occurrences noted during spring 2010 surveys. Table 2 presents the rare plant population counts observed during spring 2010 surveys. Results from the fall and spring 2009 surveys are not included in DT and rare plant tables or the figures attached. However, the Jurisdictional Waters map does include results from the 2009 surveys and a table presenting the results of both survey years is provided in the figure. Please note that the totals provided in the tables herein are simply the results of our observations. These tables do not represent total impacts nor is this an impact analysis. Comprehensive technical reports and impact analyses are currently being prepared and will be submitted to the CEC in early June.

Please let us know if you have any questions.

Sincerely,

Bill Graham
Vice President

Attachments: Table 1. Palen Solar Power Project Desert Tortoise Observations Spring 2010
Table 2. Palen Solar Power Project Rare Plant Populations Counts Spring 2010
Figure. Preliminary Results Desert Tortoise Spring 2010 Surveys
Figure. Preliminary Results Botany Rare Plants Spring 2010 Surveys
Figure. Preliminary Results State Waters Spring 2010 Surveys
CD. Raw Data Files

cc: Alice Harron, Solar Millennium
Elizabeth Ingram, Solar Millennium
Scott Galati, Solar Millennium Counsel
Mark Luttrell, AECOM

Table 1. Palen Solar Power Project Desert Tortoise Observations Spring 2010

Description	Proposed Project Study Area	Reconfigured Alternative Project Study Area	Proposed Project/Reconfigured Alternative Study Area[1]	Buffer	Incidental Observations Outside Buffer Area	Grand Total
Adult Tortoise	1			4	2	7
Active Tortoise Burrow or Pallet - Class 1				4		4
Tortoise Burrow or Pallet - Class 3 (deteriorated, definitely tortoise)				2		2
Possible Tortoise Burrow or Pallet (Class 4 or 5)		1		3	1	5
Tortoise Scat	4			11	3	18
Tortoise Bone Fragment - Mineralized		5		5	1	11
Tortoise Bone Fragment - Not Mineralized	2	37	1	6	1	47
Tortoise Carcass (shell bone falling apart; growth rings on scutes are peeling)				1		1
Tortoise Tracks				3		3

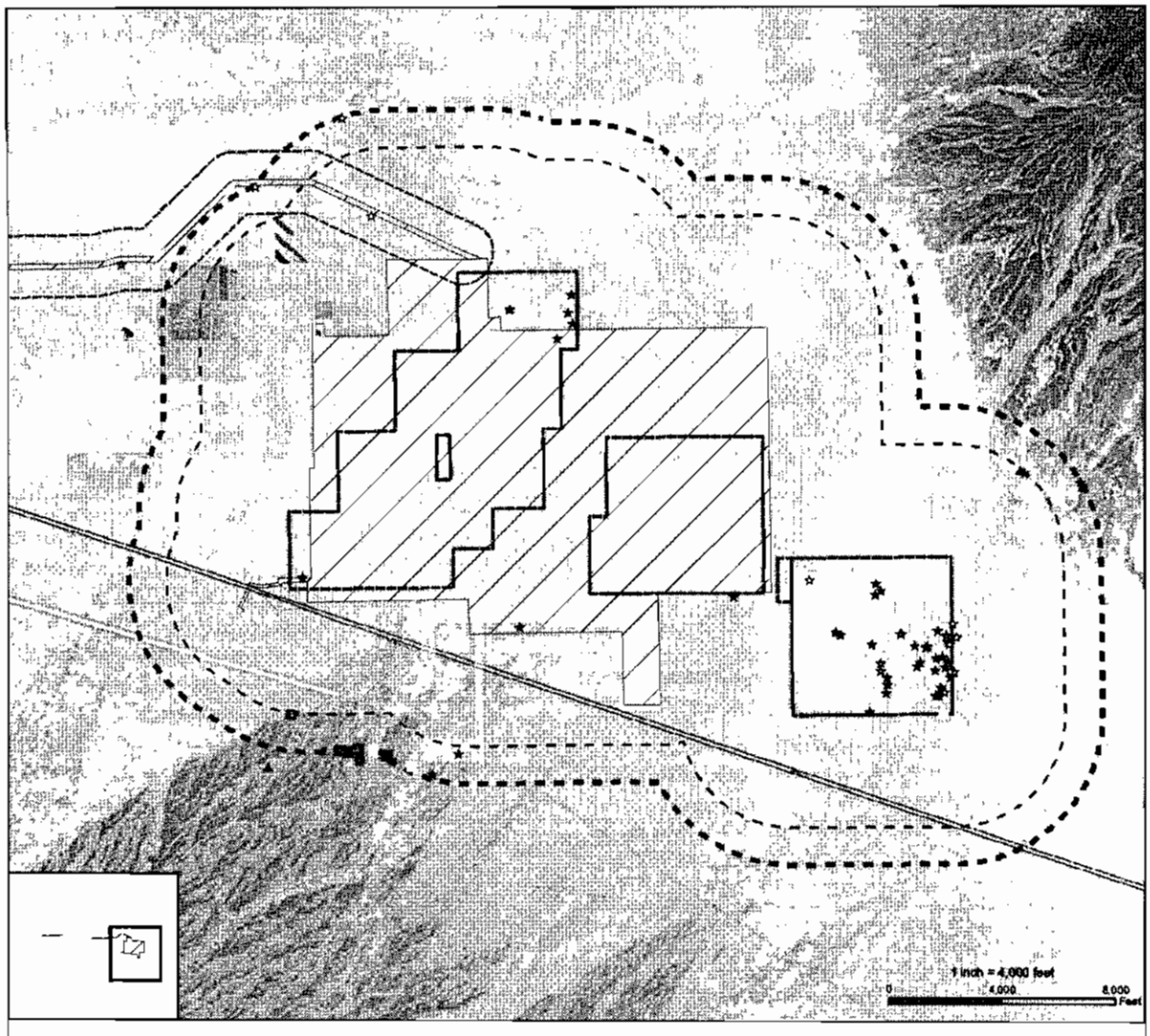
[1]This encompasses the areas where the Proposed Project Study Area and Reconfigured Alternative Study Area overlap.

Table 2. Palen Solar Power Project Rare Plant Population Counts Spring 2010[1]

Species	Proposed Project Study Area	Reconfigured Alternative Project Study Area	Propose Project/Reconfigured Alternative Study Area[2]	Buffer	Incidental Observations Outside Buffer Area	Grand Total
Atriplex canescens				920		920
Cottontop cactus	1					1
Harwood's milkvetch	4		1	172		177
Harwood's wollystar				13		13
Ribbed cryptantha	6,750	337	30	68,859		75,976
Utah milkvine					11	11

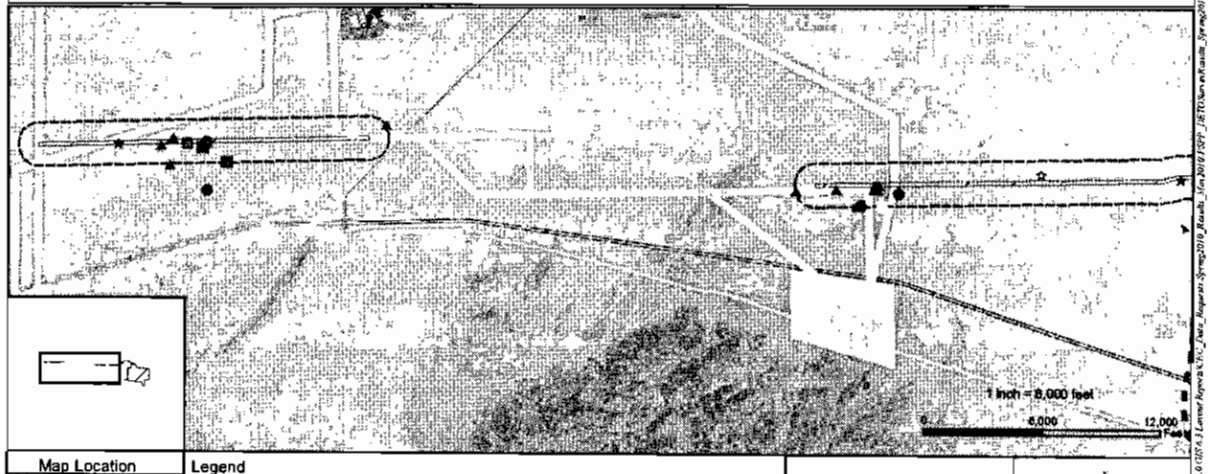
[1] Note that each point on the figure may represent multiple individuals

[2] This encompasses the areas where the Proposed Project Study Area and Reconfigured Alternative Study Area overlap.

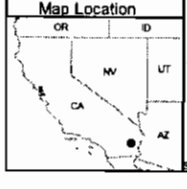


DT Observation Spring2010

- Adult Tortoise
- Tortoise Burrow or Pallet - Class 1 (Active)
- Tortoise Scat
- Tortoise Bone Fragment - Mineralized
- Tortoise Bone Fragment - Not Mineralized
- Tortoise Burrow or Pallet - Class 3 (Deteriorated)
- Tortoise Carcass - Class 4
- Tortoise Scat/Tortoise Tracks
- Tortoise Tracks
- Possible Tortoise Burrow or Pallet



Map Location



Legend

- Project Study Area
- Reconfigured Alternative Study Area
- Study Area (Surveyed in 2009)
- First Solar Study Area
- Buffer Transect 1000-foot
- Buffer Transect 3/4-mile
- Buffer Transect 1-mile

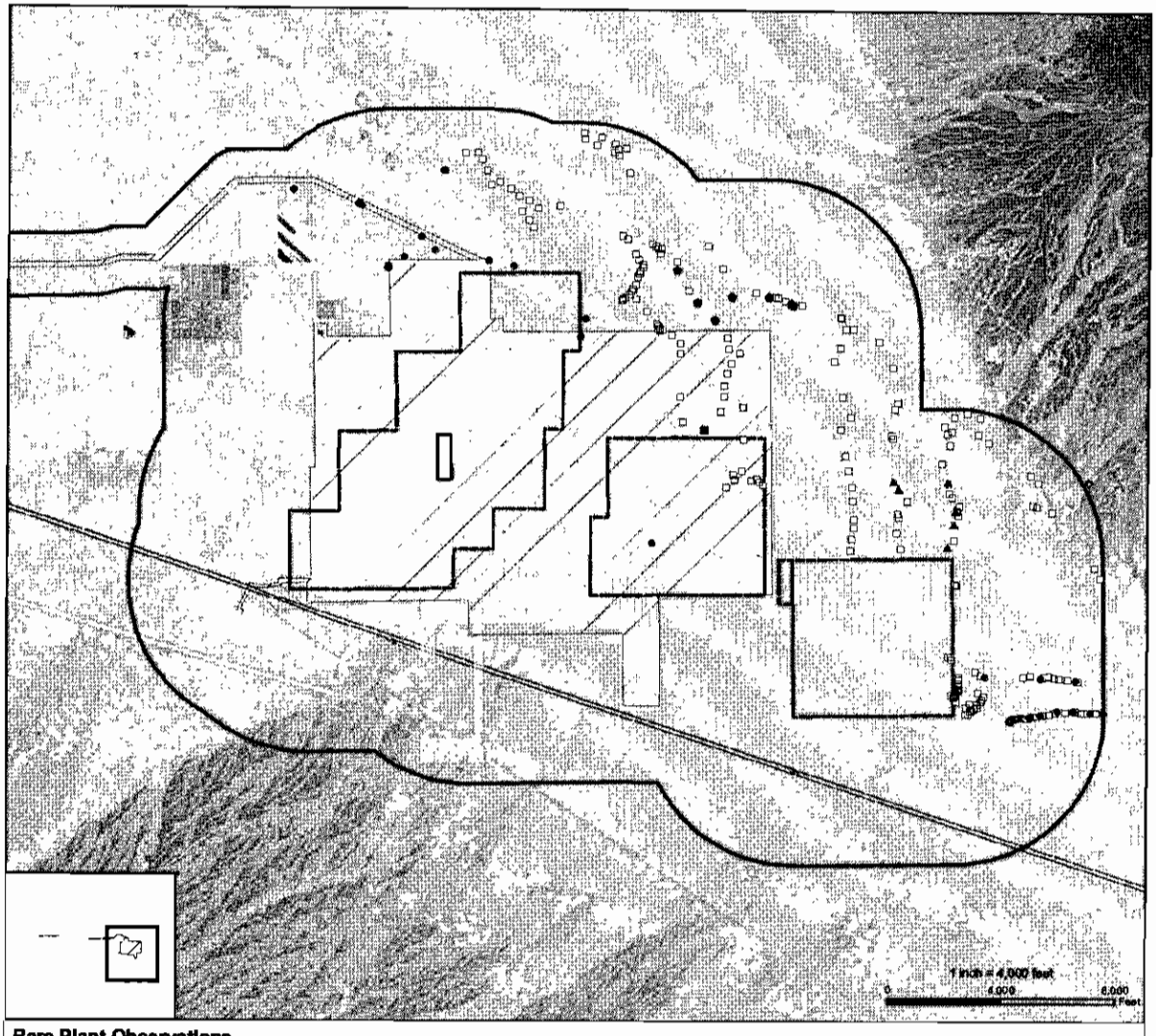
Source: NAIP 2009, AECOM 2010, SolarMillennium 2010

Palen Solar Power Project

Preliminary Results Desert Tortoise Spring 2010 Surveys

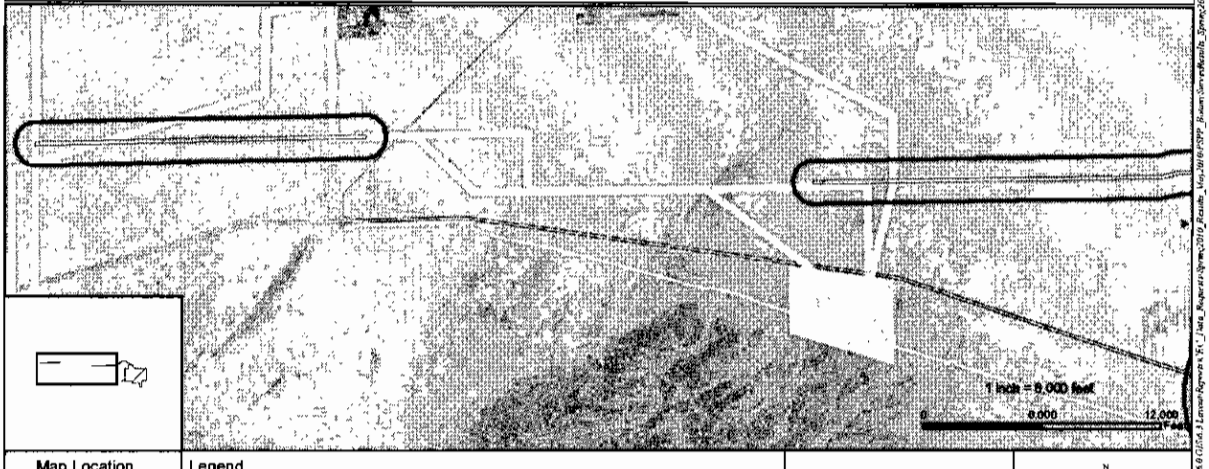
AECOM

Date: May 2010

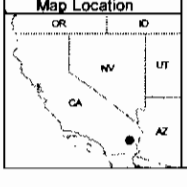


Rare Plant Observations

- Utah milkvine
- cottontop cactus
- Harwood's wollystar
- Atriplex canescens
- Harwood's milkvetch
- ribbed cryptantha



Map Location



Legend

- Project Study Area
- Reconfigured Alternative Study Area
- BRSA
- Study Area (Surveyed in 2009)
- First Solar Study Area

Palen Solar Power Project

Preliminary Results Botany Rare Plants Spring 2010 Surveys

Source: NAIP 2009, AECOM 2010

AECOM

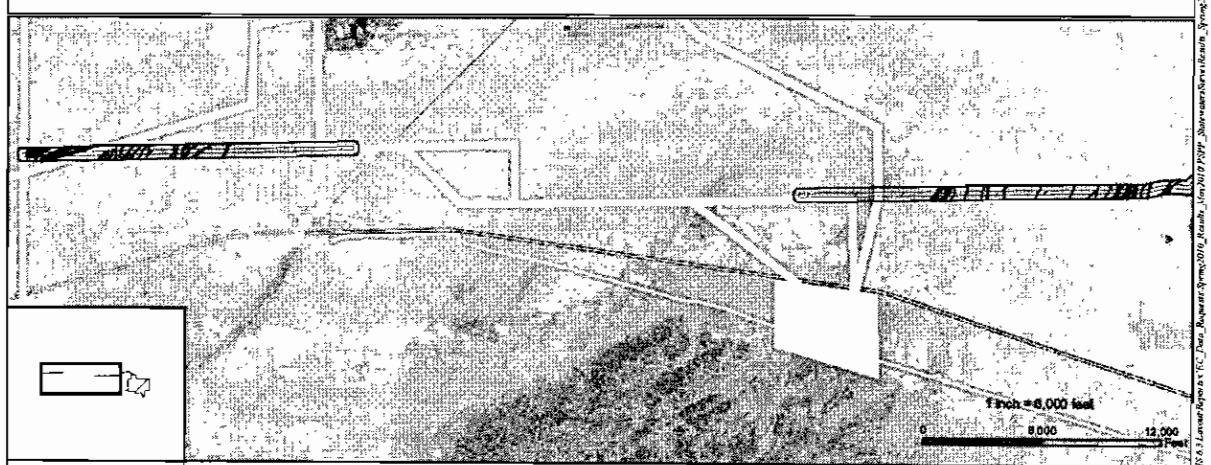
Date: May 2010

Jurisdictional Waters of the State		Project Study Area (acres)	Buffer (acres)	Reconfigured Alternative Study Area (acres)	Buffer (acres)
Desert Dry Wash Woodland	Riparian Interfluve	49.1	19.8	6.8	5.3
	Vegetated Ephemeral Dry Wash	119.3	39.1	13.6	11.8
	Wash Dependent Vegetation	1.4	0.1	0.0	0.1
Other Waters	Unvegetated Ephemeral Dry Wash	167.6	25.2	44.5	22.8

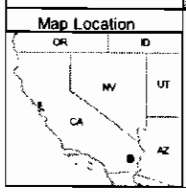
Jurisdictional Waters of the State of California

Desert Dry Wash Woodland
- Vegetated Ephemeral Dry Wash
- Wash Dependent Vegetation
- Riparian Interfluve

Other Waters
- Unvegetated Ephemeral Dry Wash



Map Location



Legend
- Project Study Area
- Study Area (Surveyed in 2009)
- 250-foot Buffer Study Area
- First Solar Study Area

Source: NAIP 2008, SolarMillennium 2010, AECOM 2010

Palen Solar Power Project

Preliminary Results State Waters Spring 2010 Surveys

AECOM

Date: May 2010

Attachment I

AECOM

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May 27, 2010

Ms. Susan Sanders
California Energy Commission
1516 Ninth Street
Sacramento, California 95814

Subject: Palen Solar Power Project (09-AFC-7) – Preliminary Spring 2010 Survey Results Corrected and Preliminary Impact Calculations for Biological Resources

Dear Ms. Sanders:

On behalf of Palen Solar I, LLC, AECOM is submitting preliminary results of biological surveys conducted in spring 2010 for desert tortoise (*Gopherus agassizii*; DT), rare plants, jurisdictional waters, and incidental wildlife occurrences for the Palen Solar Power Project. This information was requested at the Palen and Blythe Staff Workshops conducted on April 28 and 29, 2010.

Preliminary survey results for DT, rare plants and jurisdictional waters were submitted to the CEC on May 7, 2010. The results provided herein supersede the results provided on May 7, 2010. The preliminary survey results are presented in figures and tables attached. Table 1 and Figure 1 present a summary of observations of DT sign and DT occurrences noted during spring 2010 surveys. Table 2 and Figure 2 present the rare plant population counts observed during spring 2010 surveys. Figure 3 presents the results of a formal jurisdictional delineation of waters of the State. Table 3 and Figure 4 present incidental wildlife occurrences observed during protocol surveys for DT, rare plants, western burrowing owl, and jurisdictional waters. Results from the fall and spring 2009 surveys are not included in the tables and figures for DT, rare plants or incidental wildlife occurrences. However, the jurisdictional waters figure does include results from the 2009 surveys and a table presenting the results of both survey years is provided in the figure. Please note that the results provided in Tables 1 through 3 and Figures 1, 2 and 4 are simply the results of our observations within the 100 percent coverage study area and associated buffers. These tables and figures do not represent total impacts within disturbance areas because we surveyed wider corridor widths and additional areas for contingency in the engineering design that ultimately will not be disturbed.

Figure 5 presents the additional disturbance areas surveyed in 2010 for an access road, transmission line corridor, and additional project components that are outside the 2009 project footprint. Therefore, the total Project Disturbance Area has been revised to be 4,051.1 acres. This total is still preliminary and subject to further refinement in the engineering design. A revised total disturbance area will be provided in final technical reports to be submitted to the CEC in early June.

Figure 6 present preliminary direct impacts to all cover types, including state waters, resulting from the revised Project Disturbance Area. These impact calculations are still preliminary and subject to further refinement in the engineering design. Revised impact calculations will be provided in final technical reports to be submitted to the CEC in early June.

Please let us know if you have any questions.

AECOM

Sincerely,

Mr. Bill Graham
Principal

Enclosure: Table 1. Palen Solar Power Project Desert Tortoise Observations Spring 2010
Table 2. Palen Solar Power Project Rare Plant Population Counts Spring 2010
Table 3. Palen Solar Power Project Incidental Wildlife Occurrences
Figure 1. Preliminary Results Desert Tortoise Spring 2010 Surveys
Figure 2. Preliminary Results Botany Rare Plants Spring 2010 Surveys
Figure 3. Preliminary Results State Waters Spring 2010 Surveys
Figure 4. Preliminary Results Incidental Wildlife Occurrences Spring 2010 Surveys
Figure 5. Preliminary Disturbance Areas May 2010
Figure 6. Preliminary Impacts to Cover Types May 2010
CD. Raw Data Files in Excel and Shapefiles

cc. Alice Harron, Solar Millennium
Elizabeth Ingram, Solar Millennium
Scott Galati, Solar Millennium Counsel
Mark Luttrell, AECOM

AECOM

Table 1. Palen Solar Power Project Desert Tortoise Observations Spring 2010

Description	Proposed Project Study Area	Reconfigured Alternative Project Study Area	Proposed Project/Reconfigured Alternative Study Area[1]	Buffer	Incidental Observations Outside Buffer Area	Grand Total
Adult Tortoise	1			3	3	7
Active Tortoise Burrow or Pallet - Class 1				2		2
Tortoise Burrow or Pallet - Class 3 (deteriorated, definitely tortoise)	1			2		3
Possible Tortoise Burrow or Pallet (Class 4 or 5)		1		6		7
Tortoise Scat	5			10	3	18
Tortoise Bone Fragment - Mineralized	2	5		5	1	13
Tortoise Bone Fragment - Not Mineralized	3	37	1	26	1	68
Tortoise Carcass (shell bone falling apart; growth rings on scutes are peeling)				1		1
Tortoise Tracks				2	1	3

[1]This encompasses the areas where the Proposed Project Study Area and Reconfigured Alternative Study Area overlap.

AECOM

Table 2. Palen Solar Power Project Rare Plant Population Counts Spring 2010

Species	Proposed Project Study Area	Reconfigured Alternative Project Study Area	Proposed Project/Reconfigured Alternative Study Area[2]	Buffer	Incidental Observations Outside Buffer Area	Grand Total
Four wing saltbush				920		920
Cottontop cactus	1					1
Harwood's milkvetch				152		152
Harwood's wollystar		1		37		38
Ribbed cryptantha	6,750	337	30	68,859		75,976
Utah milkvine					11	11

[1] Note that each point on the figure may represent multiple individuals

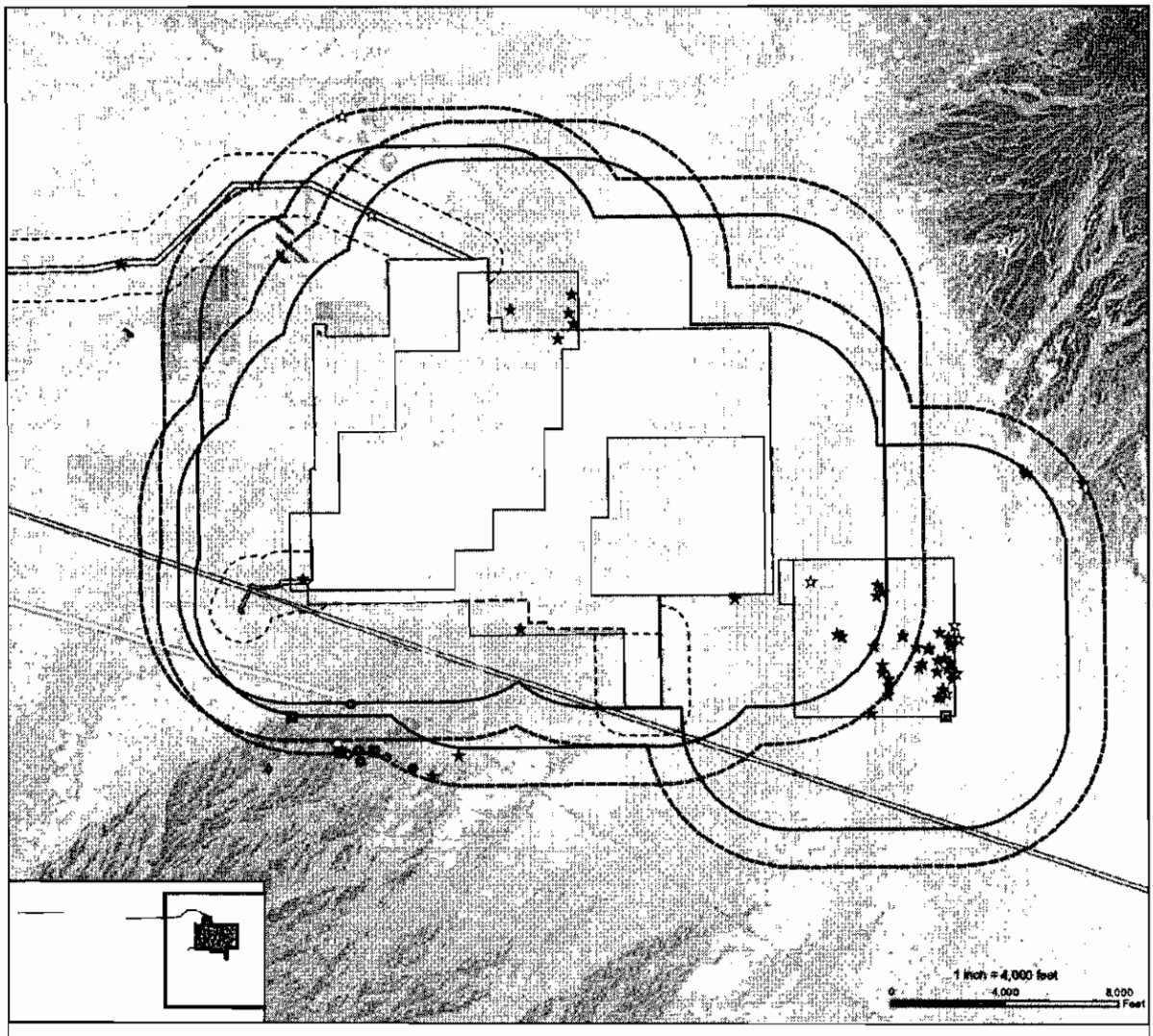
[2]This encompasses the areas where the Proposed Project Study Area and Reconfigured Alternative Study Area overlap.

AECOM

Table 3. Palen Solar Power Project Incidental Wildlife Occurrences

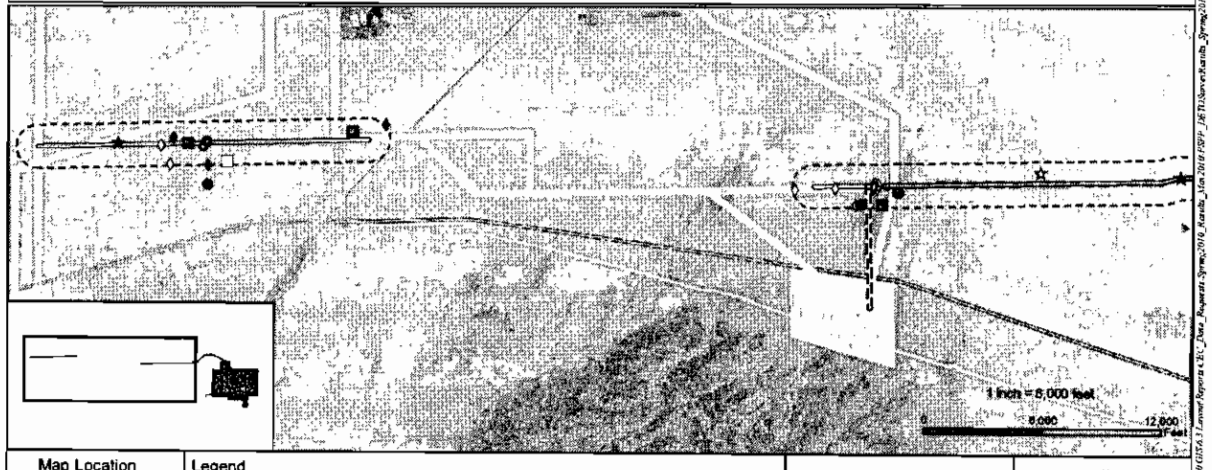
Species	Proposed Project Study Area	Reconfigured Alternative Project Study Area	Proposed Project/Reconfigured Alternative Study Area[1]	Buffer	Incidental Observations Outside Buffer Area	Grand Total
American Badger Den or Burrow	1	25	1	2	2	31
Ferruginous Hawk				1		1
Kit Fox Burrow or Complex	2	7		4	2	15
Loggerhead Shrike	2	1		3	3	9
Mojave Fringe-toed Lizard	5	310		62	11	388
Unidentified Woodpecker Species – Nest Cavity				1		
Northern Harrier		2		3		5
Swainson's Hawk	1	1		1		3

[1]This encompasses the areas where the Proposed Project Study Area and Reconfigured Alternative Study Area overlap.

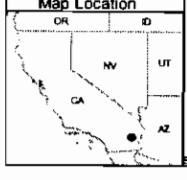


DT Observations (Spring 2010)

- Adult Tortoise
- Juvenile Tortoise
- Tortoise Burrow (Active) - Class 1
- Tortoise Burrow - Class 2
- Tortoise Burrow - Class 3
- Tortoise Burrow - Class 4
- Tortoise Burrow - Class 5
- Tortoise Pellet (Active) - Class 1
- Tortoise Pellet - Class 2
- Tortoise Pellet - Class 4
- Tortoise Pellet - Class 5
- Tortoise Scat - Class 1
- Tortoise Scat - Class 2
- Tortoise Scat - Class 3
- Tortoise Scat - Class 4
- Tortoise Scat - Class 5
- Tortoise Carcass - Class 4
- Tortoise Bone Fragment (Class 5) - Not Mineralized
- Tortoise Bone Fragment (Class 5) - Mineralized
- Tortoise Tracks



Map Location



Legend

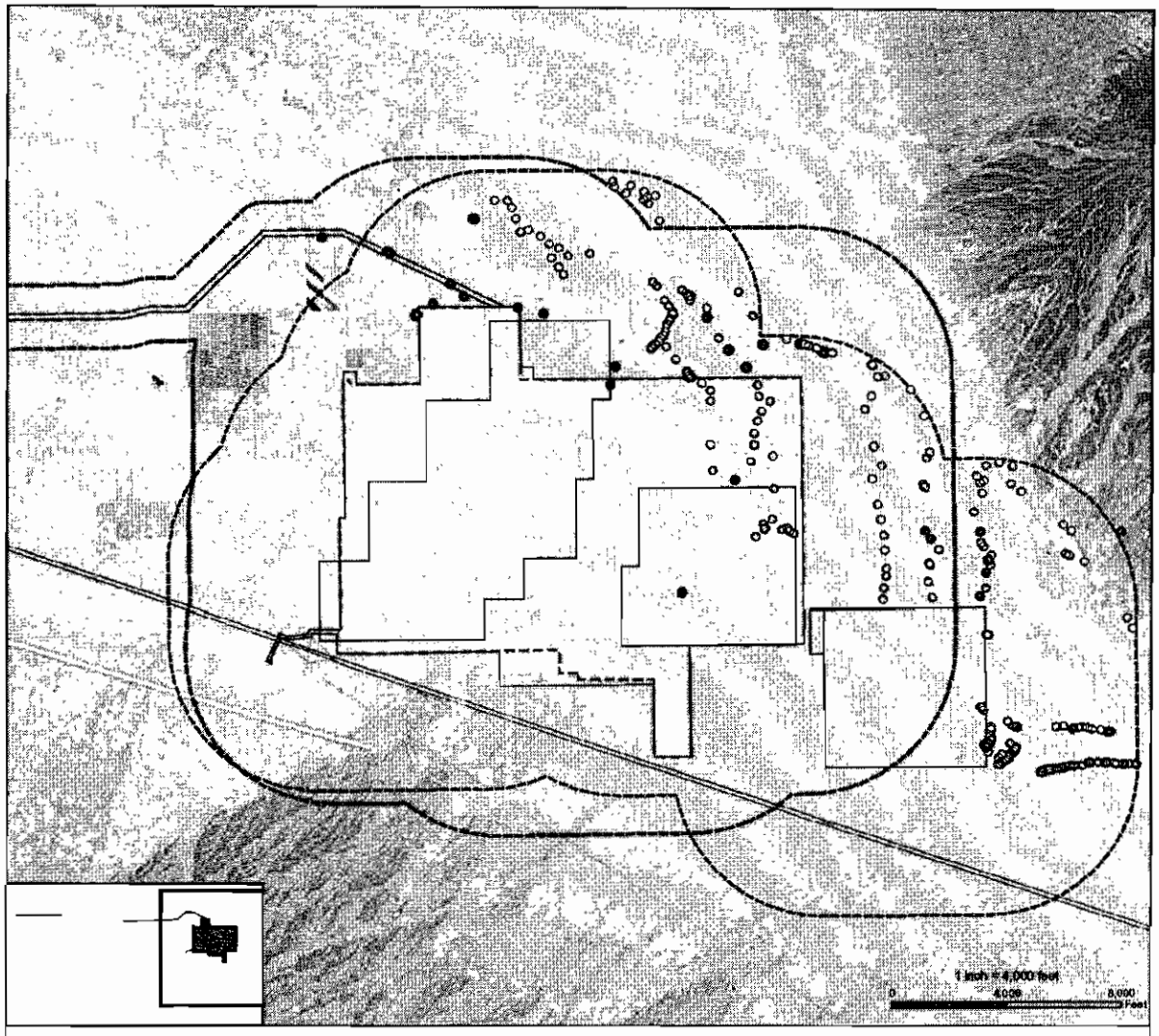
- Proposed Project Study Area
- Project Disturbance Area
- 1-mile - Project Buffer Transect
- 3/4-mile - Project Buffer Transect
- 1000-ft - Project Buffer Transect
- Alternative Disturbance Aree
- Alternetive 3/4mile - Buffer Transect
- Alternative 1mile - Buffer Transect
- Study Area (Surveyed in 2009)
- First Solar Study Area

Source: NAIP 2009; AECOM 2010, SolarMillennium 2010

Palen Solar Power Project
Figure 1
Preliminary Results
Desert Tortoise
Spring 2010 Surveys

AECOM

Date: May 2010



Rare Plant Observations

CNPS 1B and 2

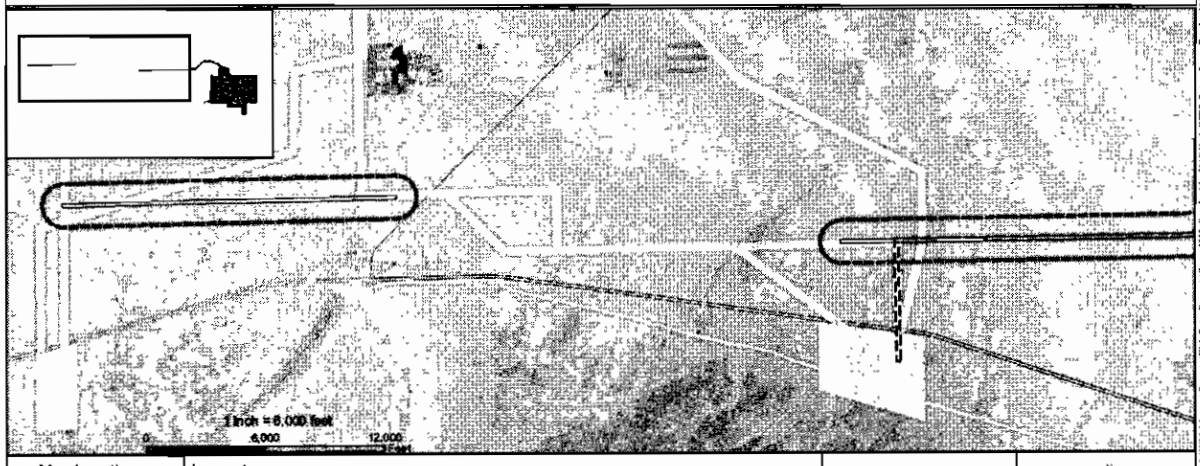
- Harwood's milkvetch
- Harwood's woollystar
- four wing saltbush

CNPS List 4

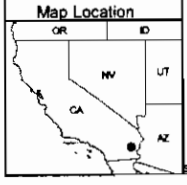
- Utah milkvine
- ribbed cryptantha

BLM-requested Cactus Species

- cottontop cactus



Map Location



Legend

- Project Disturbance Area
- Proposed Project Study Area
- Proposed Project BRSA
- Study Area (Surveyed in 2009)
- First Solar Study Area
- Alternative Disturbance Area
- Reconfigured Alternative BRSA

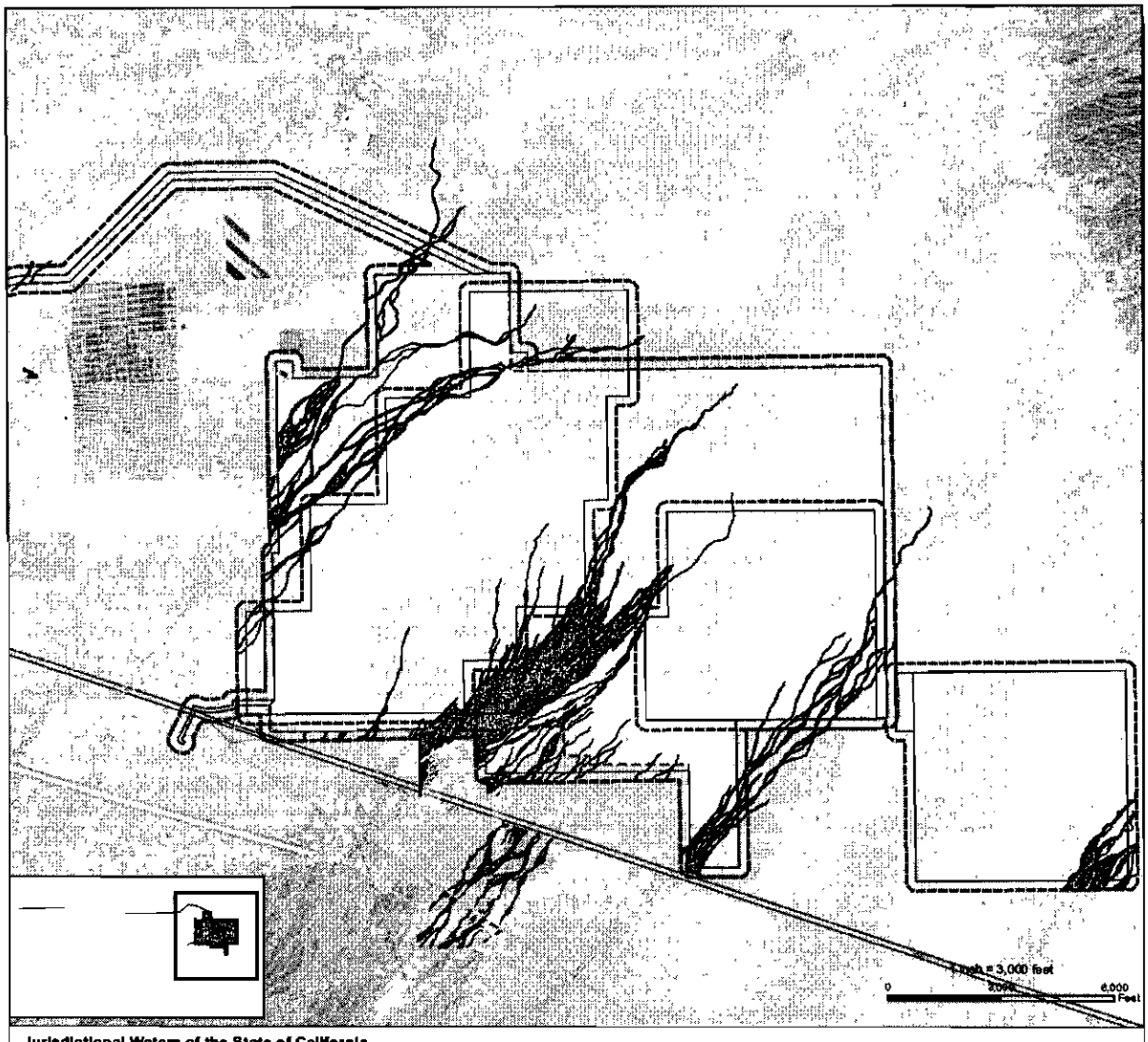
Source: NAIP 2009, AECOM 2010, SolarMillennium 2010

Palen Solar Power Project

Figure 2
Rare Plant Spring 2010 Surveys

AECOM

Date: May 2010



Jurisdictional Waters of the State of California

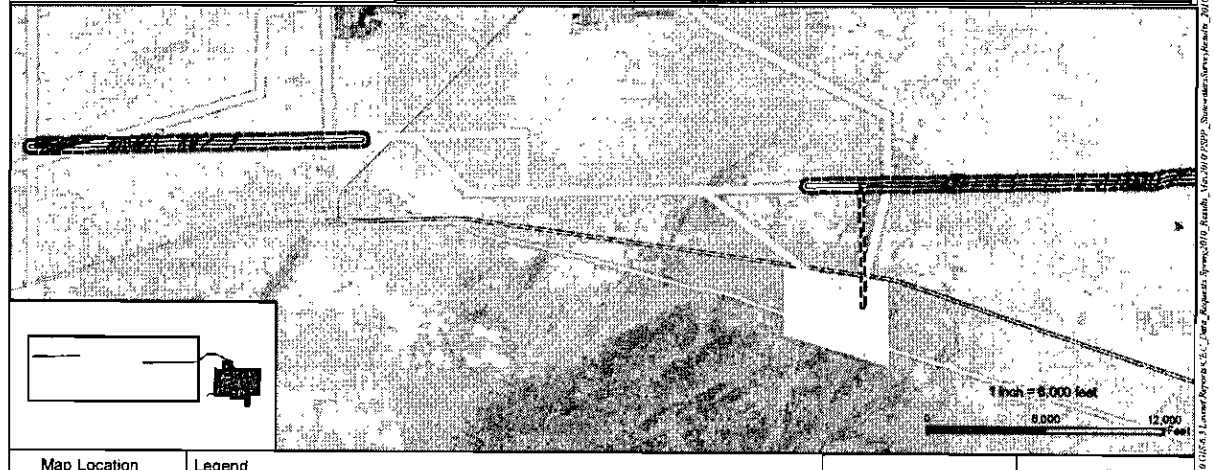
Desert Dry Wash Woodland

- Wash Dependent Vegetation
- Riparian Interfluve
- Vegetated Ephemeral Dry Wash

Other Waters

- Unvegetated Ephemeral Dry Wash

Jurisdictional Waters of the State		Project Disturbance Area	Buffer	Reconfigured Alternative Disturbance Area	Buffer
Desert Dry Wash Woodland	Wash Dependent Vegetation	1.3	0.2	0.01	0.1
	Riparian Interfluve	43.6	23.5	6.8	5.3
	Vegetated Ephemeral Dry Wash	99.1	61.1	13.6	11.8
Unvegetated Ephemeral Dry Wash	Unvegetated Ephemeral Dry Wash	164.0	28.7	44.5	22.8



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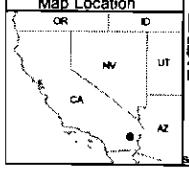


Legend

- Proposed Project Study Area
- Proposed Project DARSA
- Project Disturbance Area
- Reconfigured Alternative Disturbance Area
- Reconfigured Alternative DARSA
- Study Area (Surveyed in 2009)
- First Solar Study Area

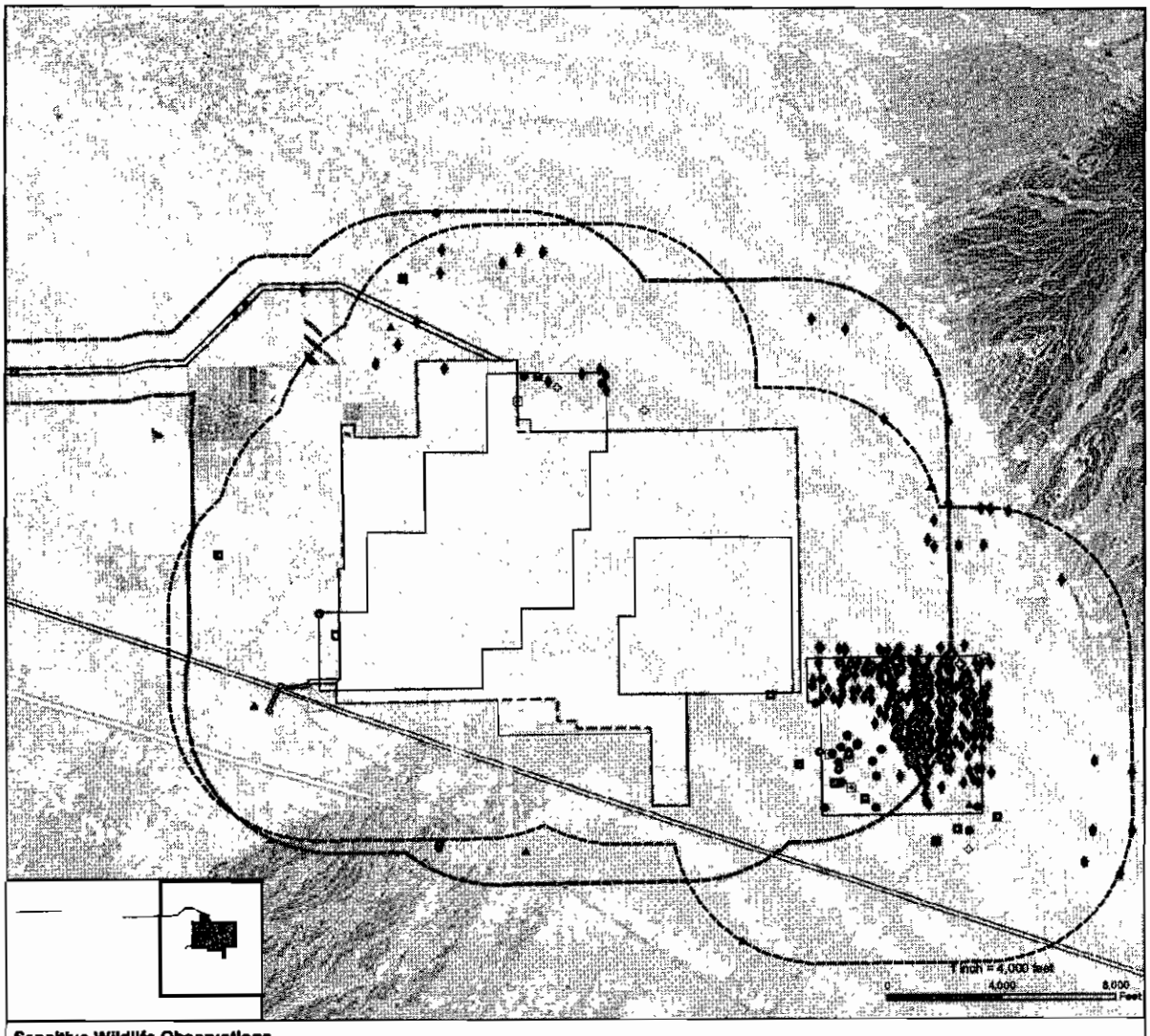
*Note: The Reconfigured Alternative Disturbance Area encompasses the disturbance caused by construction of the solar power blocks only and is not a complete engineering design

Source: NAIP 2009, AECOM 2010, SolarMillennium 2010

Palen Solar Power Project
Figure 3
Preliminary Results State Waters Spring 2010 Surveys

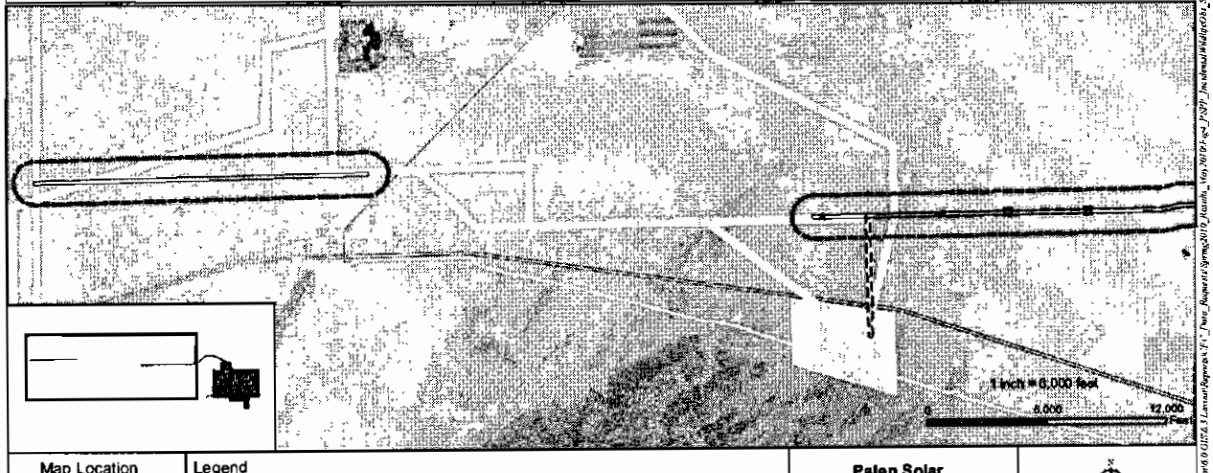
AECOM

Date: May 2010



Sensitive Wildlife Observations

- American Badger Den
- Mojave fringe-toed lizard
- American Badger Predation Burrow
- Ferruginous Hawk
- Kit Fox Burrow
- Kit Fox Complex
- Loggerhead Shrike
- Nest Cavity - Unidentified Woodpecker Species
- Northern Harrier
- Swainson's Hawk



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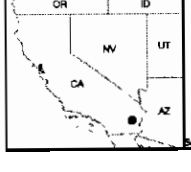


Legend

- Proposed Project Study Area
- Project Disturbance Area
- Project Disturbance BRSA
- Reconfigured Alternative Disturbance Area
- Reconfigured Alternative BRSA
- Study Area (Surveyed in 2009)
- First Solar Study Area

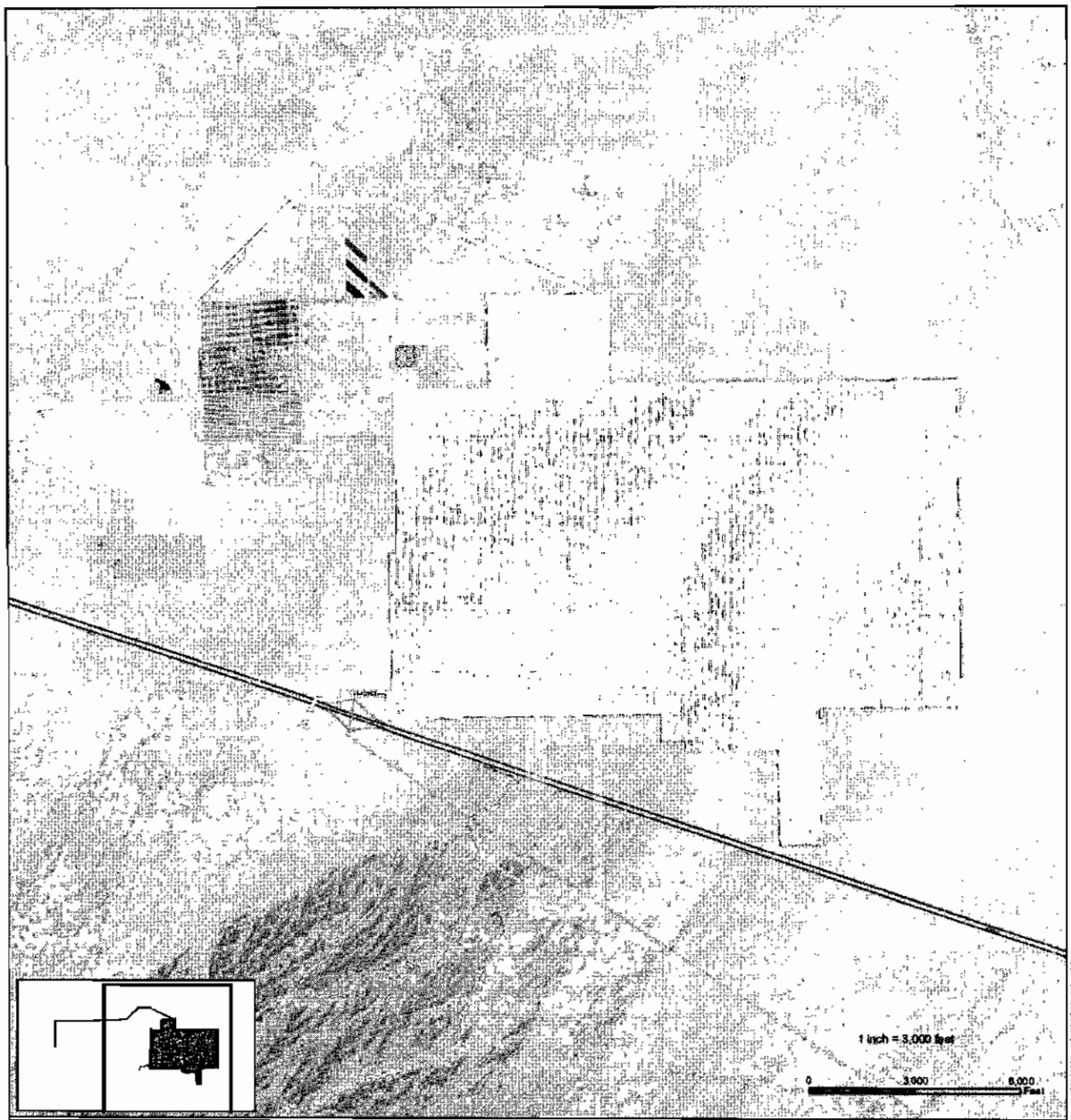
Source: NAIP 2009, AECOM 2010, SolarMillennium 2010

Palen Solar Power Project

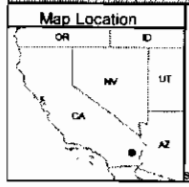
Figure 4
Incidental Wildlife Observations
Spring 2010 Surveys

AECOM

Date: May 2010



Map Location



Legend

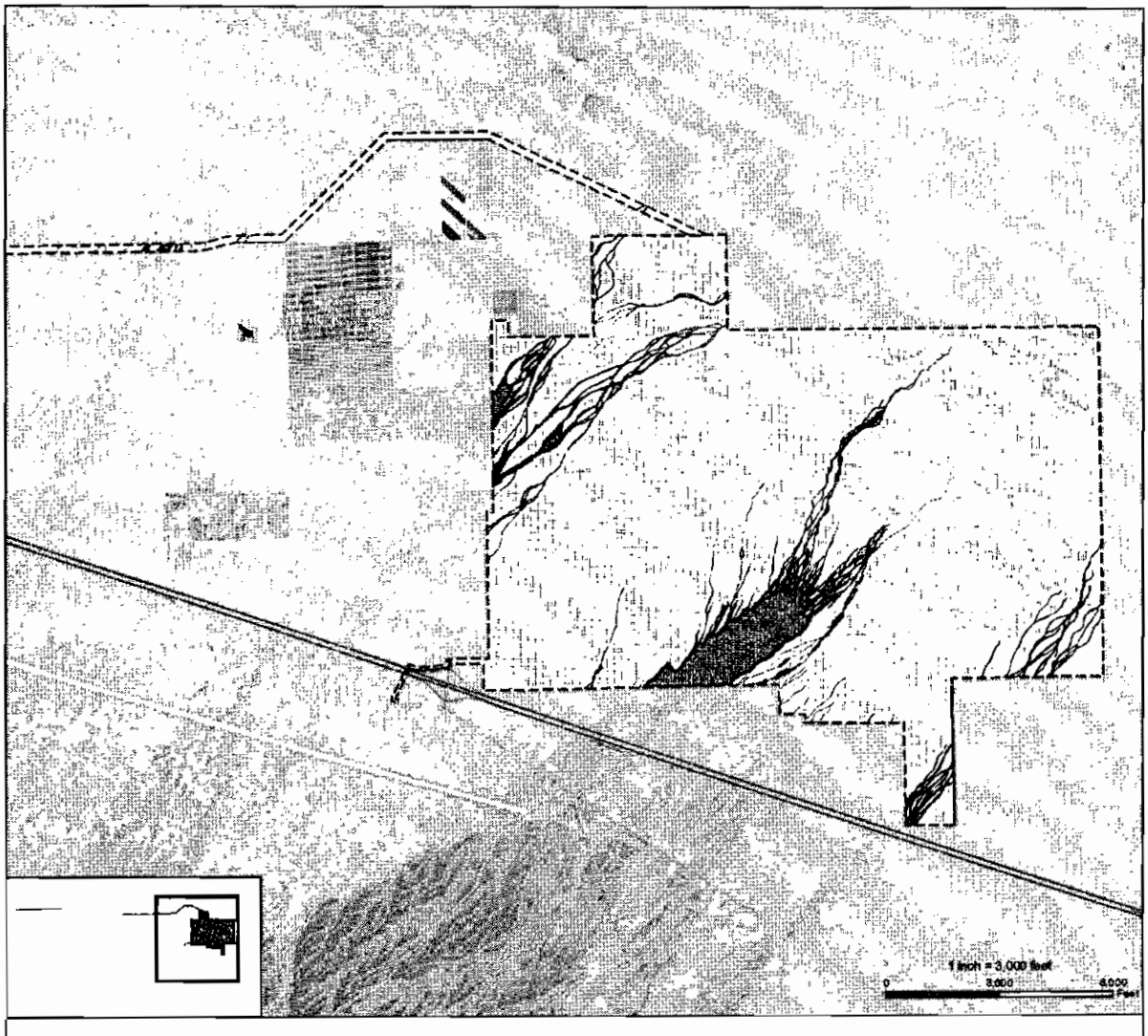
- Disturbance Area (3,870.8 acres)
- Additional Disturbance Areas 2010 (152.3 acres)
- First Solar Overlap Area (28 acres)
- Disturbance Area 2009

Source: NAIP 2009; AECOM 2010; SolarMillennium 2010

Palen Solar Power Project
Figure 5
Preliminary Disturbance Areas Spring 2010 Surveys

AECOM

Date: May 2010



Vegetation Communities

Riparian

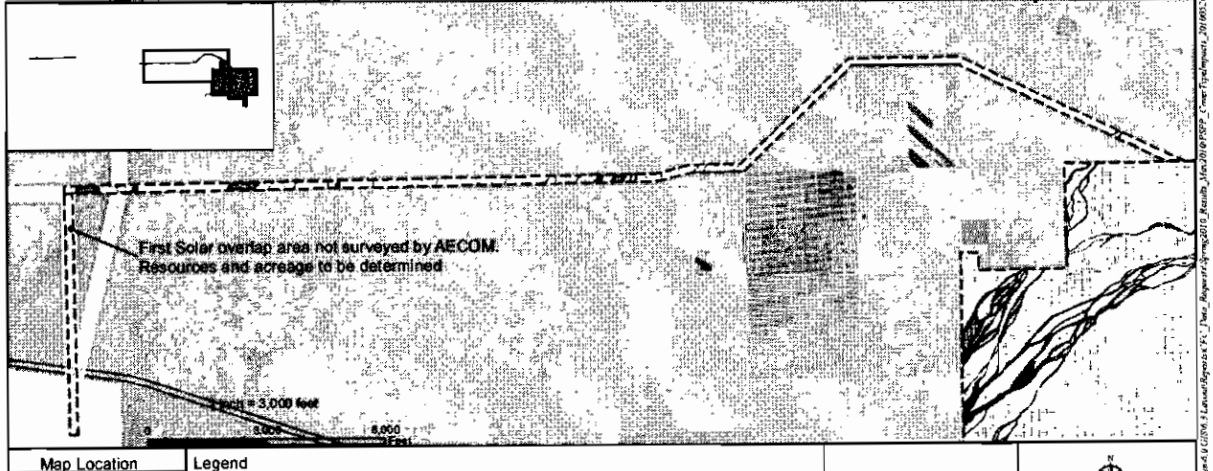
- Desert dry wash woodland (147.5 acres)
- Unvegetated ephemeral dry wash (184.0 acres)

Upland

- Sonoran creosote bush scrub (3421.9 acres)
- Stabilized and partially stabilized desert dunes (284.7 acres)

Other

- Agriculture (3.0 acres)
- Developed (1.9 acres)



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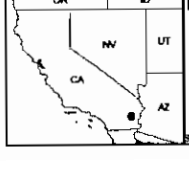

Legend

- Project Disturbance Area
- First Solar Study Area

Source: NAIP 2009, AECOM 2010, SolarMillennium 2010

Palen Solar Power Project
Figure 6
Preliminary Impacts to Cover Types
May 2010

AECOM

Date: Mey 2010

Attachment J

STATE OF CALIFORNIA

Energy Resources Conservation and Development Commission

Applications for Certification for the	Docket Nos.
Calico Solar (SES Solar One) Project,	08-AFC-13,
Genesis Solar Energy Project,	09-AFC-8,
Imperial Valley (SES Solar Two) Project,	08-AFC-5,
Solar Millenium Blythe Project,	09-AFC-6,
Solar Millenium Palen Project, and	09-AFC-7,
Solar Millenium Ridgecrest Project.	09-AFC-9, and
Consolidated Hearing on Issues Concerning US Bureau of Land Management Cultural Resources Data	10-CRD-1

TESTIMONY OF ALFREDO ACOSTA FIGUEROA ON ISSUES CONCERNING US BUREAU OF LAND MANAGEMENT CULTURAL RESOURCES DATA

May 26, 2010

Tanya A. Gulesserian
Rachael E. Koss
Marc D. Joseph
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080
(650) 589-1660 Voice
(650) 589-5062 Facsimile
tgulesserian@adamsbroadwell.com
rkoss@adamsbroadwell.com

Attorneys for the CALIFORNIA UNIONS FOR RELIABLE ENERGY

The following is the Declaration of:
Alfredo Acosta Figueroa
424 North Carlton Ave.
Blythe, Ca 92225
Phone: (760) 922-6422
E-mail: lacunadeaztlan@aol.com

Submitted To:
California Energy Commission
Hearing Room B
1516 Ninth Street
Sacramento, Ca 95814

I Alfredo Acosta Figueroa, a native of the Colorado River, born in Blythe, California, Elder/Historian and a Chemehuevi Tribal Sacred Site Monitor hereby declare:

That I for the past 55 years have been studying "The Aztec Place of Origin," Aztlán/Chicomozstoc/Hue-Hue-Tlapallan, here in the surrounding Palo Verde/Parker Valleys. The author of the book "Ancient Footprints of the Colorado River," published in May 2002.

That in 1975 we organized opposition against the Sun Desert Nuclear Power Plant proposed to be built at the base of the Sacred Mule Mountains ("Calli" in Nahuatl & "Hamoc-Avi" in Mojave) stopping the project in 1979.

That in 1992 we organized the Colorado River Anti-Ward Valley Coordinating Committee and after 8-years stopped the proposed Ward Valley Nuclear Toxic Dump located in between the Sacred Turtle and Avi-Kawme (Spirit Mountain located 15 miles west of Laughlin, Nevada) Mountains.

That in 2000 we organized La Cuna de Aztlán Sacred Sites Protection Circle under the auspices of La Escuela de la Raza Unida, said circle is comprised of 15 individuals dedicated to physically protecting the Sacred Sites and that on February 15, 2008 were given a Memorandum of Understanding together with the Southern Low Desert Resource Conservation & Development Council to partnership for protection of cultural resources, that included the Blythe Giant Intaglios, other geoglyphs and several hundred Sacred Sites that are located along the Colorado River from Needles, Ca down to Yuma, Az.

I hereby state:

That we oppose the certification by the California Energy Commission and the issuing of public land by the Bureau of Land Management to the following proposed solar power projects:

1) Genesis Solar Energy Project: 09-AFC-8
2) Solar Millennium Blythe Project: 09-AFC-6
3) Solar Millennium Palen Project: 09-AFC-7

Our investigations concerning the above projects are located in Eastern Riverside County along the I-10 corridor that is the most Sacred area of the North American Continent. It is the area where the Aztec Calendar is geographically outlined and located. The area entails from the Kofa Mountains in Arizona, west to the human head image (Copill-Quetzalli) on the crest of the San Jacinto Mountains above the city of Palm Springs, Ca.

The proposed Blythe Solar Power Project is overlaid on more than 25 large geoglyphs that we have found throughout the area. They include the world known image of Kokopilli, Cicimitl (The Great Spirit that takes human spirits to their final resting place in the Topock Maze, "Mictlan"). Included in the area is the image of Tosco, over 5 large windrow mazes, a 9-level pyramid and over 25 Sacred images (that we have not yet deciphered).

The main East/West & North/South trails all lead to and from the Blythe Giant Intaglios. One trail leads to Kokopilli and Cicimitl which traverses west through the south end of the McCoy Mountains to the McCoy Springs. Here the image of Quetzalcoatl takes a bath then goes to the Palen Mountains "Hue-Hue-Tlapallan" (Reddish Earth), were he is lead to the underworld by Xolotl (The Dog), as shown in the petroglyphs at the Palen Mountain Mural Wash.

The trail comes down from the Palen Mountain Wash and meets with another trail from the McCoy Springs area that is in the Genesis project. The trail then runs west along the plains of the Palen Mountains then crossed southwest towards the Chuckawalla Mountains were it meets the main trail coming west from the Mule Mountains towards Desert Center, Ca. These two trails meet at the proposed Palen Mountain Project and the southwest trail leads towards Corn Springs (Tula) located in the center of the Chuckwalla Mountains.

On February 2009, we took 2 archeologists, Jeffery Adams and Joe that had contacts with the BLM to document all the geoglyphs along the Colorado River which included the Sacred Sites of Kokopilli and Cicimitl.

On March 2, 2010 we took John Kalish, Bureau of Land Management Field Manager and George Kline, archeologist of the Palm Springs, California office to the Blythe Power Project area and took them on an onsite tour which included 5 large geoglyphs and the images of Kokopilli and Cicicmitl. Unfortunately, we have not yet received a report of the investigations.

Please feel free to contact me with any questions regarding the Sacredness of the areas.

Sincerely,

Alfredo Acosta Figueroa

Alfredo Acosta Figueroa

Attachment K

STATE OF CALIFORNIA - THE NATURAL RESOURCES AGENCY ARNOLD SCHWARZENEGGER, Governor

COLORADO RIVER BOARD OF CALIFORNIA
770 FAIRMONT AVENUE, SUITE 100
GLENDALE, CA 91203-1068
(818) 500-1625
(818) 543-4685 FAX

DOCKET
09-AFC-7
DATE MAR 22 2010
RECD. APR 01 2010

March 22, 2010

Mr. Alan H. Solomon
Project Manager
Siting, Transmission and Environmental
Protection Division
California Energy Commission
1516 Ninth Street, MS 15
Sacramento, CA 95814-5512

Dear Mr. Solomon:

The Colorado River Board of California (Board), created in 1937, is the State agency charged with safeguarding and protecting the rights and interests of the State, its agencies and citizens, in the water and power resources of the seven-state Colorado River System.

The Board has received and reviewed the California Energy Commission's (CEC) documents Nos. Docket 09-AFC-6 and 09-AFC-7: Request for Agency Participation in the Review of the Blythe and the Palen Solar Power Projects in Riverside County, California, Distribution of Application for Certification. Both the Blythe and the Palen Solar Power Projects are proposed to be located in the Southern California inland desert. The applicants for both the Blythe and the Palen Projects are seeking a right-of-way grant for approximately 9,400 acres and 5,200 acres, respectively, of Federal lands that are administered by the Bureau of Land Management (BLM). The total water consumption during the operational period for the Blythe and the Palen Projects is estimated to be 628 and 314 acre-feet per year over the 30-year license period, respectively. In addition during construction, the water use is estimated to be 3,164 and 1,560 acre-feet for the two projects, respectively. The water supply for each project will be pumped groundwater from on-site wells.

According to the Consolidated Decree of the Supreme Court of the United States in the case of *Arizona v. California, et al.* entered March 27, 2006, (547 U.S. 150 (2006)), the consumptive use of water means "diversion from the stream less such return flow thereto as is available for consumptive use in the United States or in satisfaction of the Mexican treaty obligation" and consumptive use "includes all consumptive uses of water of the mainstream, including water drawn from the mainstream by underground pumping." Also, pursuant to the 1928 Boulder Canyon Project Act (BCPA) and the Consolidated Decree, no water shall be delivered from storage or used by any water user without a valid contract between the Secretary of the Interior and the water user for such use, i.e., through a BCPA Section 5 contract. Within California, BCPA Section 5 contracts have previously been entered into between users of Colorado River mainstream water and the Secretary of the Interior for water from the Colorado River that exceeds California's basic entitlement to use Colorado River water as set forth in the Consolidated Decree. Thus, no additional Colorado River water is available for use by new

PROOF OF SERVICE (REVISED 4/5/10) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 4/15/10
HA

project proponents along the Colorado River, except through the contract of an existing BCPA Section 5 contract holder, either by direct service or through an exchange of non-Colorado River water for Colorado River water.

The Federal lands proposed for both the Blythe and Palen Projects are located within the "Accounting Surface" area designated by U.S. Geological Survey Water Investigation Report Nos. 94-4005 and 00-4085 (USGS Report). This USGS Report indicates that the aquifer underlying lands located within the "Accounting Surface" is considered hydraulically connected to the Colorado River and groundwater withdrawn from lands underlying the "Accounting Surface" would be replaced by Colorado River water, in total or in part. This means that if it is determined that these wells are, in fact, pumping Colorado River water, a contract with the Secretary of the Interior is required before such a use is deemed to be a legally authorized use of this groundwater.

On November 9, 2009, the Board received applications for Lower Colorado Water Supply Project water for the Blythe and the Palen Solar Power Projects from the projects' consultant/proponent, Mr. Josef Eichhammer of Solar Millennium, LLC. This project, enacted by Congress on November 14, 1986, as the Lower Colorado Water Supply Project Act of 1986 (Act) authorized construction of the Lower Colorado Water Supply Project (LCWSP) and appropriated funds for the U.S. Bureau of Reclamation (Reclamation) to construct Phase I of the Project. The LCWSP consists of well field facilities in the Sand Hills along the All-American Canal in Imperial County. The LCWSP is authorized to provide exchange water up to a total amount of 10,000 acre-feet per year for nonagricultural use to those users of Colorado River water along the Colorado River, who do not have an existing Section 5 BCPA contractual entitlement or whose entitlement to use Colorado River is insufficient to meet their needs. Under a "first come first serve" priority basis, the Board has reviewed applications that it has received and, to date, recommended to Reclamation that applicants for LCWSP water in the amount of about 7,500 acre-feet per year are eligible to receive LCWSP water. At this time, the capacity to pump the fully authorized volume of 10,000 acre-feet of water per year has not been constructed. Furthermore, when the Congress passed the Act authorizing the LCWSP, water for large scale solar power/energy projects was not envisioned. Considering these two factors it does not appear that LCWSP water is a viable option for the Blythe and Palen Projects.

Based upon the applications for LCWSP water that were received from Solar Millennium for the Blythe and the Palen Solar Power Projects, several meetings and telephone conference calls have been held among the solar power projects consultants/proponents, Reclamation, BLM, Board's staff, and others. As a result of discussions in these meetings, the Board's staff has identified a preferred option for obtaining a legally authorized and reliable water supply for both the Blythe and the Palen Solar Power Projects over the life of the project that fits into the timeframe that has been established by Solar Millennium. That option involves obtaining water through an existing Section 5 BCPA contract holder, The Metropolitan Water District of Southern California (MWD). Although other options may be available, they, in the Board's opinion, could not be implemented in a timely manner and address the requirement that water consumptively used

from the Colorado River must be through a Section 5 BCPA contractual entitlement.

If you have any questions or need further information, please contact me at (818) 500-1625.

Sincerely,

Gerald R. Zimmerman
Executive Director

cc: Ms. Lorri Gray-Lee, Regional Director, Lower Colorado Region, U.S. Bureau of Reclamation
Ms. Holly Roberts, Associate Field Manager, Palm Springs-South Coast Field Office, BLM
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Mr. Gavin Berg, Project Manager, Solar Millennium LLC
Mr. William J. Hasencamp, Manager, Colorado River Resources, The Metropolitan Water District of Southern California

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE *PALEN SOLAR POWER PLANT PROJECT*

Docket No. 09-AFC-7

PROOF OF SERVICE
(Revised 4/5/10)

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DECLARATION OF SERVICE

I, Hilarie Anderson, declare that on April 15, 2010, I served and filed a copy of the attached Letter from the Colorado River Board of California. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [http://www.energy.ca.gov/sitingcases/solar_millennium_palen]

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(Check all that Apply)

FOR SERVICE TO ALL OTHER PARTIES:

_x_ sent electronically to all email addresses on the Proof of Service list;

____ by personal delivery;

_x_ by delivering on this date, for mailing with the United States Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

_x_ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (***preferred method***);

OR

____ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 09-AFC-7
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Original Signature in Dockets
Hilarie Anderson

RECEIVED
APR 19 2010
ADAMS BROADWELL JOSEPH & CARDOZO

*indicates change

Attachment L

Audubon California * California Wilderness Coalition * Defenders of Wildlife
Desert Protective Council * Mojave Desert Land Trust
Natural Resources Defense Council * Sierra Club * The Nature Conservancy
The Wilderness Society * The Wildlands Conservancy

Renewable Siting Criteria for California Desert Conservation Area

Environmental stakeholders have been asked by land management agencies, elected officials, other decision-makers, and renewable energy proponents to provide criteria for use in identifying potential renewable energy sites in the California Desert Conservation Area (CDCA). Large parts of the California desert ecosystem have survived despite pressures from mining, grazing, ORV, real estate development and military uses over the last century. Now, utility scale renewable energy development presents the challenge of new land consumptive activities on a potentially unprecedented scale. Without careful planning, the surviving desert ecosystems may be further fragmented, degraded and lost.

The criteria below primarily address the siting of solar energy projects and would need to be further refined to address factors that are specific to the siting of wind and geothermal facilities. While the criteria listed below are not ranked, they are intended to inform planning processes and were designed to provide ecosystem level protection to the CDCA (including public, private and military lands) by giving preference to disturbed lands, steering development away from lands with high environmental values, and avoiding the deserts' undeveloped cores. They were developed with input from field scientists, land managers, and conservation professionals and fall into two categories: 1) areas to prioritize for siting and 2) high conflict areas. The criteria are intended to guide solar development to areas with comparatively low potential for conflict and controversy in an effort to help California meet its ambitious renewable energy goals in a timely manner.

Areas to Prioritize for Siting

- Lands that have been mechanically disturbed, i.e., locations that are degraded and disturbed by mechanical disturbance:
  - Lands that have been "type-converted" from native vegetation through plowing, bulldozing or other mechanical impact often in support of agriculture or other land cover change activities (mining, clearance for development, heavy off-road vehicle use).[1]
- Public lands of comparatively low resource value located adjacent to degraded and impacted private lands on the fringes of the CDCA:[2]
  - Allow for the expansion of renewable energy development onto private lands.
  - Private lands development offers tax benefits to local government.
- Brownfields:
  - Revitalize idle or underutilized industrialized sites.
  - Existing transmission capacity and infrastructure are typically in place.
- Locations adjacent to urbanized areas:[3]
  - Provide jobs for local residents often in underserved communities;
  - Minimize growth-inducing impacts;

- Provide homes and services for the workforce that will be required at new energy facilities;
- Minimize workforce commute and associated greenhouse gas emissions.

- Locations that minimize the need to build new roads.
- Locations that could be served by existing substations.
- Areas proximate to sources of municipal wastewater for use in cleaning.
- Locations proximate to load centers.
- Locations adjacent to federally designated corridors with existing major transmission lines.[4]

High Conflict Areas

In an effort to flag areas that will generate significant controversy the environmental community has developed the following list of criteria for areas to avoid in siting renewable projects. These criteria are fairly broad. They are intended to minimize resource conflicts and thereby help California meet its ambitious renewable goals. The criteria are not intended to serve as a substitute for project specific review. They do not include the categories of lands within the California desert that are off limits to all development by statute or policy.[5]

- Locations that support sensitive biological resources, including: federally designated and proposed critical habitat; significant[6] populations of federal or state threatened and endangered species,[7] significant populations of sensitive, rare and special status species,[8] and rare or unique plant communities.[9]
- Areas of Critical Environmental Concern, Wildlife Habitat Management Areas, proposed HCP and NCCP Conservation Reserves.[10]
- Lands purchased for conservation including those conveyed to the BLM.[11]
- Landscape-level biological linkage areas required for the continued functioning of biological and ecological processes.[12]
- Proposed Wilderness Areas, proposed National Monuments, and Citizens' Wilderness Inventory Areas.[13]
- Wetlands and riparian areas, including the upland habitat and groundwater resources required to protect the integrity of seeps, springs, streams or wetlands.[14]
- National Historic Register eligible sites and other known cultural resources.
- Locations directly adjacent to National or State Park units.[15]

EXPLANATIONS

[1] Some of these lands may be currently abandoned from those prior activities, allowing some natural vegetation to be sparsely re-established. However, because the desert is slow to heal, these lands do not support the high level of ecological functioning that undisturbed natural lands do.

[2] Based on currently available data.

[3] Urbanized areas include desert communities that welcome local industrial development but do not include communities that are dependent on tourism for their economic survival.

[4] The term "federally designated corridors" does not include contingent corridors.

[5] Lands where development is prohibited by statute or policy include but are not limited to: National Park Service units; designated Wilderness Areas; Wilderness Study Areas; BLM National Conservation Areas; National Recreation Areas; National Monuments; private preserves and reserves; Inventoried Roadless Areas on USFS lands; National Historic and National Scenic Trails; National Wild, Scenic and Recreational Rivers; HCP and NCCP lands precluded from development; conservation mitigation

banks under conservation easements approved by the state Department of Fish and Game, U.S. Fish and Wildlife Service or Army Corps of Engineers a; California State Wetlands; California State Parks; Department of Fish and Game Wildlife Areas and Ecological Reserves; National Historic Register sites.

[6] Determining "significance" requires consideration of factors that include population size and characteristics, linkage, and feasibility of mitigation.

[7] Some listed species have no designated critical habitat or occupy habitat outside of designated critical habitat. Locations with significant occurrences of federal or state threatened and endangered species should be avoided even if these locations are outside of designated critical habitat or conservation areas in order to minimize take and provide connectivity between critical habitat units.

[8] Significant populations/occurrences of sensitive, rare and special status species including CNPS list 1B and list 2 plants, and federal or state agency species of concern.

[9] Rare plant communities/assemblages include those defined by the California Native Plant Society's Rare Plant Communities Initiative and by federal, state and county agencies.

[10] ACECs include Desert Tortoise Desert Wildlife Management Areas (DWMAs). The CDCA Plan has designated specific Wildlife Habitat Management Areas (HMAs) to conserve habitat for species such as the Mohave ground squirrel and bighorn sheep. Some of these designated areas are subject to development caps which apply to renewable energy projects (as well as other activities).

[11] These lands include compensation lands purchased for mitigation by other parties and transferred to the BLM and compensation lands purchased directly by the BLM.

[12] Landscape-level linkages provide connectivity between species populations, wildlife movement corridors, ecological process corridors (e.g., sand movement corridors), and climate change adaptation corridors. They also provide connections between protected ecological reserves such as National Park units and Wilderness Areas. The long-term viability of existing populations within such reserves may be dependent upon habitat, populations or processes that extend outside of their boundaries. While it is possible to describe current wildlife movement corridors, the problem of forecasting the future locations of such corridors is confounded by the lack of certainty inherent in global climate change. Hence the need to maintain broad, landscape-level connections. To maintain ecological functions and natural history values inherent in parks, wilderness and other biological reserves, trans-boundary ecological processes must be identified and protected. Specific and cumulative impacts that may threaten vital corridors and trans-boundary processes should be avoided.

[13] Proposed Wilderness Areas: lands proposed by a member of Congress to be set aside to preserve wilderness values. The proposal must be: 1) introduced as legislation, or 2) announced by a member of Congress with publicly available maps. Proposed National Monuments: areas proposed by the President or a member of Congress to protect objects of historic or scientific interest. The proposal must be: 1) introduced as legislation or 2) announced by a member of Congress with publicly available maps. Citizens' Wilderness Inventory Areas: lands that have been inventoried by citizens groups, conservationists, and agencies and found to have defined "wilderness characteristics." The proposal has been publicly announced.

[14] The extent of upland habitat that needs to be protected is sensitive to site-specific resources. For example: the NECO Amendment to the CDCA Plan protects streams within a 5-mile radius of Townsend big-eared bat maternity roosts; aquatic and riparian species may be highly sensitive to changes in groundwater levels.

[15] Adjacent: lying contiguous, adjoining or within 2 miles of park or state boundaries. (Note: lands more than 2 miles from a park boundary should be evaluated for importance from a landscape-level linkage perspective, as further defined in footnote 12).

Attachment M

Abandoned Private Farmland - Eastern Riverside County

Legend

- City Boundaries
- Highways
- Abandoned Farmland

Total Abandoned Farmland shown is approximately 9,000 acres

N

CVAG

Map by
Nicholas Peihl,
Coachella Valley
Association of Governments

Background Imagery is
National Agriculture Imagery Program, 2005

Map Document: (F:\npeihl\SDE Projects\AbandonedFarmland_ERivCty.mxd)
10/2/2008 -- 12:09:36 PM

0 2.5 5 10 15 20 Miles

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. CVAG and the County of Riverside make no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assume no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

Joan Taylor
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07/01/2010 03:33 PM

To CAPSSolarPalen@blm.gov, allison_shaffer@blm.gov, CEC Alan Solomon <asolomon@energy.state.ca.us>
cc
bcc
Subject Palen Solar comments, Sierra Club

Attached please find Sierra Club comments on the above referenced project.

Comments re Palen Solar Power Project.pdf

CNRCC DESERT COMMITTEE

July 1, 2010

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BY EMAIL, FAX AND US MAIL

RE: Sierra Club comments on the proposed Palen Solar Power Project Staff Assessment and Draft Environmental Impact Statement

On behalf of the Sierra Club, we are writing to provide you with comments on the Staff Assessment and Draft Environmental Impact Statement (SA/DEIS) for the Palen Solar Power Project (08-AFC-13). The United States Department of the Interior, Bureau of Land Management's (BLM) SA/DEIS is a joint document prepared with the California Energy Commission ("Commission") in order to meet the requirements of the National Environmental Policy Act ("NEPA") and California Environmental Quality Act ("CEQA").

The Sierra Club is the oldest conservation organization in the United States, with over 600,000 members nationwide, and 151,000 members in California alone. Sierra Club is steadfastly committed to preserving the legacy of California's wildlands for future generations, while simultaneously recognizing that climate change has the potential to make radical changes in our habitats and landscapes. Sierra Club is working aggressively to reduce carbon emissions by supporting large scale renewable projects and by quickly ramping up energy efficiency and rooftop solar.

In order to help meet California's and the nation's renewable energy goals, the Sierra Club supports appropriately sited large-scale renewable development, i.e, projects that avoid or greatly minimize environmental impacts to wildlife and plants and the ecosystems they depend upon. For example, there are hundreds of thousands of acres of privately held agricultural lands in California that have marginal productivity or no longer support farming. These lands, with relatively high solarity and poor habitat values, present many opportunities to help meet our goals for large scale solar. The Sierra Club encourages companies and agencies to prioritize these types of lands going forward.

I. Introduction

The applicant Solar Millenium proposes to develop an electric-generating facility with a nominal capacity of 500 megawatts (MW) using a concentrated solar "trough" generating system. The Palen project is proposed to be located in the eastern portion of Riverside County, California, north of Interstate 10 near Desert Center. The site is approximately 80 miles east of Palm Springs and 34 miles west of Blythe. Except for one 40 acre private parcel which has been incorporated, the proposed project is comprised entirely of BLM managed lands. Construction and operation of the project would directly disturb 3,899 acres (6 square miles) and indirectly disturb an undetermined number of acres off-site.

The project also includes an electrical transmission line, wells, propane supply tanks, a bioremediation site, and a site access road. The project would consume approximately 1500 acre feet of water during construction and 300 acre feet of local groundwater per year thereafter for operations, washing mirrors, etc. Propane stored in two 18,000 tanks would be used to heat project operating fluid at night and bring it up to operating temperature in the morning in an auxiliary boiler. The project would be connected to the proposed new SCE Red Bluff Substation via 10 miles of a new gen-tie line, and its power would be transmitted to load centers via either the existing Devers to Palo Verde line or the new Devers to Palo Verde 2 line, which the Sierra Club supports. The project would have a several acre bioremediation site to deal with small amounts of leaking hazardous fluids; larger amounts would have to be removed and treated offsite. The actual electrical capacity factor would be a small fraction of the nameplate 500 MW. The project will

be "dry cooled" but will have some wet cooling of components during summer. There is no proposal at this site to "store" thermal energy for use after sundown.

The Palen project is proposed in a portion of the Colorado Desert of California that is an intact, functioning ecosystem.[1] The immediate project area, however, is already subject to edge effects because of adjacent existing rural development on one side and Interstate 10 on another. But the Project site is also located in the main Aeolian sand transport corridor, supplying sand dunes that are onsite and down-wind from the project. If built as proposed, the project would not only destroy onsite sand dunes but would also sever this critical sand transport system, causing severe impacts to the downwind dune ecosystem. It also has potential to sever an important tortoise corridor connection between the Chuckwalla Desert Wildlife Management Area (DWMA) and the Palen Valley and Wilderness. These and other significant impacts of the project remain to be adequately addressed.

II BLM & the Commission's Responsibilities under NEPA & CEQA

The National Environmental Policy Act ("NEPA") is our "basic national charter for the protection of the environment." 40 C.F.R. § 1500.1. Congress enacted NEPA "[t]o declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; [and] to enrich the understanding of the ecological systems and natural resources important to the Nation." 42 U.S.C. § 4321. To accomplish these purposes, NEPA requires all agencies of the federal government to prepare a "detailed statement" that discusses the environmental impacts of, and reasonable alternatives to, all "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). This statement is commonly known as an environmental impact statement ("EIS"). See 40 C.F.R. Part 1502.

The EIS must "provide full and fair discussion of significant environmental impacts and shall inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. § 1502.1. This discussion must include an analysis of "direct effects," which are "caused by the action and occur at the same time and place," as well as "indirect effects which . . . are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8. An EIS must also consider the cumulative impacts of the proposed federal agency action together with past, present and reasonably foreseeable future actions, including all federal and non-federal activities. 40 C.F.R. § 1508.7. Furthermore, an EIS must

[1] Sierra Club scoping comments on Palen Solar Power Project, December 2009

"rigorously explore and objectively evaluate all reasonable alternatives" to the proposed project. 40 C.F.R. § 1502.14(a).

The regulations implementing NEPA identify several factors that, when present, indicate that the environmental effects of a proposed action are significant. These include the presence of highly uncertain impacts, impacts to species listed as threatened under the Endangered Species Act, and cumulatively significant impacts. 40 C.F.R. §§ 1508.27(b)(5), (b)(7), (b)(9). This project contains federally listed sensitive species, California special status species, flood hazards, and will have a cumulatively significant impact on the desert environment.

The California Energy Commission, as the lead agency under CEQA, is responsible for preparing a document to inform the public and decision makers as to the project's environmental impacts. Pub. Res. Code § 25519(c), 21080.5. CEQA is designed to fulfill two important goals in the protection of the environment. EIR's (or their functional equivalent) must inform the public and decision makers about all potential, significant environmental effects of a project. Pub. Res. Code § 21100(b)(1). It is necessary to highlight the potential environmental effects "with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences." 14 Cal. Code Reg. § 15151. An agency must diligently examine these effects and "must use its best efforts to find out and disclose all that it reasonably can." Id. § 15144.

This SA/DEIS is legally and technically flawed under both NEPA and CEQA. As drafted, it is inadequate as an informational document because essential information was omitted, or is not available to the public or key agencies. The SA/DEIS also fails under substantive provisions of California law requiring the full mitigation of impacts to threatened species. This project will have serious negative impacts to at least two sensitive desert species: threatened Desert Tortoise and Mojave Fringe-Toed Lizard. As such the SA/DEIS should have contained all feasible mitigation measures and reasonable alternatives available. Accordingly, the BLM and the Commission must conclude that the Calico Project will cause significant and irreparable environmental harm and reject the Project. Alternatively, we request that BLM and the Commission fully and completely address the following deficiencies and concerns surrounding the SA/DEIS.

III. The SA/DEIS is Inadequate Because it Lacks Critical Data For Issues that Will Impact the Environment and Defers Information Gathering and Analysis

A major flaw with the SA/DEIS is the omission of relevant critical data in several important respects. Boiled down, the SA/DEIS omitted disclosure of the full-range of potentially significant impacts associated with the Project. Although the

SA/DEIS acknowledged these data gaps, it provided no legal reason under NEPA or CEQA as to why these gaps were permitted.

This is inadequate under both NEPA & CEQA. Under NEPA's implementing regulations: "If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement." 40 C.F.R. § 1502.22. The agency did not claim that this information was cost prohibitive to obtain, and the information that is omitted from the SA/DEIS is certainly "essential to a reasoned choice." 40 C.F.R. § 1502.22(a).

NEPA's implementing regulations make it clear that "NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA." 40 C.F.R. 1501.1 (emphasis added). CEQA contains similar requirements; public participation is at the heart of CEQA, therefore the public must be able to review and comment on technically accurate and complete EIR's. CEQA requires agencies to inform the public and responsible officials of the environmental consequences of their decisions before they are made, thereby protecting the environment and informed self-government. (Berkeley Keep Jets Over the Bay Com. v. Board of Port Comrs. (2001) 91 Cal.App.4th 1344, 1354.)

The following are a sample of the acknowledged areas where there is missing data in the SA/DEIS.

-

- Biological Resources Mitigation and Monitoring Plan, Revegetation Plan, Decommissioning Plan, Drainage Erosion and Sedimentation Control Plan, Groundwater Level Monitoring and Reporting Plan, Programmatic Agreement for Cultural Resources, and other essential Project elements have not been developed due to critical data that is lacking.
- Waste Discharge Requirements have not been developed. SA/DEIS C.9-97
- Spring and fall surveys for special status plant species within the disturbance areas are planned but not yet performed or available. SA/DEIS C.2-3
- Information related to translocation of the tortoise, specifically location of the proposed site for relocating tortoise and verification of disease testing requirements is missing or located in an appendix not accessible by the public, and as such that program can not be assessed. SA/DEIS C.2-161-2

These and other omissions and data gaps violate both NEPA and CEQA. The role of a SA/DEIS under NEPA is to provide the public with enough information to adequately assess the environmental dangers of a particular project. Indeed, if reasonably complete information is not included, "neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects." Robertson v. Methow Valley Citizens Council, U.S. 332, 352 (1989). Under CEQA, courts have made clear that environmental assessments must provide sufficient information to allow both decision-makers and the public to understand the consequences of the project. Napa Citizens for Honest Gov't v. Napa County Board of Supervisors, (2001) Cal.App.4th 342, 356. The information presented in an EIS must be of high quality. 40 C.F.R. § 1500.1(b). "Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA." Id. "Agencies shall insure the professional integrity, including scientific integrity, of the decisions and analysis in environmental impact statements." 40 C.F.R. § 1502.24. "They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement." Id. The amount of missing, incomplete, or incorrect data requires the BLM and the Commission to deny the Applicant's proposal, or at the very least, complete gathering all of the necessary information for public review and comment.

IV. The Analysis of Impacts to Sensitive Animals, Plants, and Other Biological Resources is Inadequate Under NEPA and CEQA

a. The SA/DEIS Inadequately Analyzed Impacts to Sensitive Reptiles

1. Desert Tortoise

The Mojave population of the desert tortoise (Gopherus agassizii) was listed as a federally threatened species in 1990. 55 FR 12,178. In California, state laws have been in place since 1939 to protect the desert tortoise. The species was listed as threatened under the California Endangered Species Act in 1989 and is considered a "Species at Risk" under California's Wildlife Action Plan. According to the final federal listing, construction projects and energy development have significantly contributed to the destruction of native habitat. Id. Under NEPA, the BLM's SA/DEIS was required to fully disclose all project-related adverse environmental effects which cannot be avoided. 42 U.S.C.S. § 4332(2)(C). The SA/DEIS did not adequately address the Project's impacts on desert tortoise.

The Project site lies within a broad alluvial plain which drains the Palen Mountains to the north. SA/DEIS C.2-1. It contains 210 acres of designated critical habitat for desert tortoise, which will be mitigated at a ratio of 5:1, and 3,899 acres of suitable habitat proposed to be mitigated at a ratio of 1:1; this mitigation,

however does not account for indirect impacts to tortoise of predation, road kill, harassment, etc. SA/DEIS c.2-62

The desert tortoise in and around the Project site are part of the Eastern Colorado Recovery Unit, which is primarily found in desert washes and creosote bush dominated valleys. SA/DEIS C.2-14. Desert tortoise recovery plans emphasize that activities occurring outside the boundaries of existing tortoise conservation areas can negatively affect tortoise populations. See U.S. Fish and Wildlife Service, Draft revised recovery plan for the Mojave population of the desert tortoise (Gopherus agassizii) at 33 (2008). Both the 1994 and draft 2008 Recovery Plans recommend that land managers focus recovery efforts toward tortoise conservation areas; however, the Plans also emphasize that land managers should try to limit the loss of habitat outside conservation areas as much as possible. Id. The SA/DEIS acknowledges that the proposed project will "result in the direct and permanent loss of all occupied tortoise habitat onsite. SA/DEIS C.2-67.

Protocol surveys for desert tortoise were performed in 2009, and relatively low numbers of tortoise were found on the project site. SA/DEIS C.2-35. However, as proposed the Project is located in the Tortoise Connectivity DWMA identified in the Northern and Eastern Colorado Desert Management (NECO) Plan, and will block the north-south movement corridor of the desert tortoise from the Chuckwalla DWMA to the Palen Valley and Palen-McCoy Wilderness. SA/DEIS C.2-4. Little information is provided discussing the effects this permanent limitation will have on the overall health of the species or on their genetic diversity. This is a significant burden for the desert tortoise, and as such, the habitat fragmentation of the project should be considered too high to approve. The Reduced Project Alternative may resolve this issue for desert tortoise, but fails to adequately do so for Mojave fringe-toed lizard, see below.

Additionally for desert tortoise, the SA/DEIS fails to adequately identify the dangers that disease poses to trans-located tortoises. Relocating tortoise without disease testing could imperil the health of both the animals to be moved and the resident populations into which tortoises will be released. Based on the reports of Berry, et al. (2008), Mack, et al. (2008) and Mack and Berry (2009) that disease is not uniformly distributed across geographical areas, it is reasonable to assume that there will be pockets of diseased animals and pockets of healthy animals within the 5 kilometer range of the project site. Not fully testing animals that are to be "relocated" could result in the introduction of diseases into otherwise healthy populations. Also, as noted by the CDFG, "moving tortoises up to 5 km distance without disease testing presents risks to other populations." SA/DEIS C.2-57. Not testing the host populations within the 5 kilometer range could result in the introduction of healthy tortoises from the project site into a population that is diseased. Therefore, any translocation should follow the Desert Tortoise Council Guidelines for Handling Desert Tortoise During Construction. Additionally, any tortoises that are moved more than 1000' should be fully tested for disease and the host population should be tested to the same extent as well.

2. Mojave Fringe-toed Lizard

The Mojave fringe-toed lizard (MFTL) is a BLM sensitive species that is found in sandy, hot, sparsely vegetated habitats. SA/DEIS C.2-28. It is restricted to habitats with fine, loose sand. Id. Because it is restricted to these sandy locations, and because of increasing development pressures, its habitat has become highly fragmented. Id. The habitat fragmentation has in turn left the species vulnerable to local extirpations. It is important to protect the fragile sandy ecosystem upon which the Mojave fringe-toed lizard is dependent. Id.

The SA/DEIS acknowledges that of the 3,899 acre project footprint, nearly half the acreage is suitable habitat for the Mojave fringe-toed lizard. SA/DEIS C.2-36, and that direct, indirect and cumulative impacts of the Project to this sensitive species will be significant and unmitigable. SA/DEIS C.2-1 and 4. However, although the SA/DEIS recognizes the fact that this population of MFTL is at the southernmost extreme of the species' range, it only identifies impacts to the local population and the species in general (SA/DEIS C.2-4) but fails to fully consider the importance of this population to genetic diversity and climate adaptation of the species.[2] With the hotter and drier conditions expected with climate change,[3] the southernmost, lower elevation populations of MFTL are likely better adapted to extremes of heat and aridity than those in the higher, cooler areas of the Mojave desert.[4] Thus it is essential to conserve the populations at the southern extreme of the species for genetic diversity, species fitness[5] and ability of the species to adapt to climate change stressors.

In analyzing the Reduced Project Alternative, the SA/DEIS asserts that this alternative would avoid significant unmitigated impacts to MFTL. SA/DEIS C.2-2 and 5. However, this alternative still intrudes on an identified active shallow sand dune area ("Zone III") which is identified MFTL habitat SA/DEIS Biological Resources Figure A and MFTL Observations Figure 5.3-9 from scoping package. The SA/DEIS has an affirmative obligation to avoid impacting this zone, not only because of onsite loss of habitat but also because of offsite impacts to sand flow and resultant species-level impacts to MFTL. The project should be realigned and reconfigured closer to the Interstate, and also there are BLM lands to the west of the Project that could be utilized to configure an acceptable Alternative.

Additionally, the SA/DEIS has analyzed the potential for the various configurations of the Project and their fences to serve as perches for birds of prey,

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[2] Issue identified by Alan Muth at CEC/BLM Palm Springs workshop for Palen project.
[3] California Resources Agency *California Climate Change Adaptation Strategy Discussion Draft* 2009 p 4, Figures 5&6
[4] Personal communication, Cameron Barrows to Joan Taylor
[5] Booy et al, *Genetic Diversity and the Survival of Populations*, 2000

increasing the impact to desert tortoise, but it has failed to do so for MFTL (and other vulnerable species) outside the Project foot print.

The SA/DEIS must be revised and pertinent information and analysis on the above, including a feasible alternative to avoid impacts to MFTL and sand transport must be provided to the public.

b. The SA/DEIS does not Adequately Address the Impacts to Sensitive Mammals

2. Desert Kit Fox and American Badger

The desert kit fox and American Badger are found on the project site. SA/DEIS C.2-5. Although the Applicant has not performed focused surveys for these species for the kit fox, there is suitable habitat on site, and several individuals as well as many burrows and scat were observed throughout the site. Id. The SA/DEIS provides no information as to the number of kit foxes that will be affected. The SA/DEIS does acknowledge that kit fox and American badger are protected species. Id. Nevertheless, the SA/DEIS provides almost no information as to how the species will be avoided. The only suggestion is that a preconstruction survey should be done, and dens should be flagged, and further that habitat acquired for desert tortoise would suffice as mitigation for these mammals SA/DEIS C.2-64. However, the SA/DEIS offers no assurance that habitat suitable for desert tortoise will have the carrying capacity or the primary constituent elements required for desert kit fox and American badger. Once again, this is insufficient under NEPA & CEQA as it provides virtually no scientific information for the public or agencies to use in determining the adequacy of proposed mitigation.

c. The Cumulative Impacts Analysis is Deficient

A discussion of the cumulative environmental effects of a proposed action is an essential part of the environmental review process, otherwise the agency cannot evaluate the combined environmental effect of related actions. Cumulative impact is defined in NEPA's implementing regulations as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions .... Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7

Under NEPA, an EIS must provide a sufficiently detailed catalogue of past, present, and reasonably foreseeable future projects, and provide an adequate analysis of how these projects, in conjunction with the proposed action, are thought to have impacted or are expected to impact the environment. See Muckleshoot Indian Tribe v. United States Forest Serv., (9th Cir.1999) 177 F.3d 800, 810 (per

curiam) (quoting 40 C.F.R. § 1508.7). In addition to an adequate cataloging of past projects, NEPA also requires a discussion of consequences of those projects. However, the SA/DEIS fails to properly assess and address the severe cumulative biological and other impacts of the project.

Considered in the context of other proposed large energy projects in the region, the cumulative impacts of the Project are significant in nearly every issue category. On a human time scale, these cumulative impacts will be pervasive, causing landscape-level biological, cultural, visual and other impacts that will be permanent or last hundreds of years after the expected lifetime of the Project. The SA/DEIS fails to provide adequate analysis, identification, and mitigation or avoidance of Project cumulative impacts.

Inter alia, the SA/DEIS fails to provide an adequate analysis of how these related projects, in conjunction with the proposed action, are thought to have impacted or are expected to impact the environment. The acreages and intent of the identified related projects are given, but actual cumulative impacts of these projects on the affected environment are not analyzed in adequate specificity. In particular, the cumulative biological context is deficient. The SA/DEIS fails to analyze the threshold questions about the cumulative context: What is the existing condition for the species at risk? What is the expected future condition for the species and biological processes at risk from the cumulative impacts of this and other existing and reasonably foreseeable actions? And what relative contribution to these impacts is the proposed project expected to make?

Clearly, the SA/DEIS has not assembled enough information and performed the requisite analysis (and the responsible agencies do not have adequate planning guidance) to determine: 1) the level of cumulative impacts to habitats, species and ecosystems, especially in the context of likely climate-change-necessitated habitat and species migration, or: 2) the limits of acceptable change; or 3) how to avoid significant cumulative impacts that would foreclose future opportunities to sustain desert ecosystems and species. This is a violation not only of NEPA and CEQA, but of State and Federal mandates requiring sustainable resource protection, such as FLPMA and the 2009 California Climate Change Adaptation Strategy (herein incorporated by reference). The latter stated, "In the face of a changing climate it is imperative that Departments work to maintain healthy, connected, genetically diverse populations" to "aids [sic] the movement of species within reserve areas as they adjust to changing conditions associated with climate change." 2009 California Climate Change Adaption Strategy, 56. This guidance document also directed California Department of Fish and Game to ensure that CEQA review addressed climate change issues in this context.[6]

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[6] CEQA Review/Department Guidance – The Department of Fish and Game will initiate the development of internal guidance for staff to help address climate adaptation and to ensure climate change impacts are appropriately addressed in CEQA documents. Id. 61.

At c.2-4 the SA/DEIS acknowledges that even with mitigation, certain cumulative Project impacts remain significant. To offset cumulative biological impacts to the I-10 region, the SA/DEIS proposes new plan designations to designate two new linkage areas and one solar exclusion area. SA/DEIS Appendix B 1-3. In context with the vast land conversion contemplated with renewable energy development, the concept of setting aside landscape-level conservation areas to mitigate for severe cumulative impacts of the project is laudable, and in fact it is mandated by NEPA and CEQA. However, there are some serious deficiencies in the proposed mitigation. Plan amendments can be changed; they are not permanent. The proposed mitigation of only Plan amendments does not provide the necessary permanent, unchangeable mitigation for severe cumulative impacts that will persist at least for hundreds of years beyond the life of the cumulative projects. The mitigation also does not specify management prescriptions, and it allows undefined activities, "Casual use of the area would remain unaffected." (Biological Resources, Appendix B-3)

As a thorough cumulative impact analysis is required for public and the agencies to make an informed decision regarding the consequences of a proposed action, the SA/DEIS must be revised to thoroughly examine the above-referenced deficiencies.

V. The Alternatives Analysis is Inadequate Because BLM Unlawfully Rejected Feasible Alternatives

a. BLM's Statement(s) of Purpose and Need Reflects the Applicant's Needs, and Is Too Narrowly Drawn.

The Alternatives Analysis "is the heart of the environmental impact statement."[7] CEQ regulations require that an alternatives analysis presents the environmental impacts of the proposal and the alternatives in comparative form, sharply defining issues and providing a clear basis for choice among options by the decision-maker and the public. 43 CFR § 1502.14. In the SA/DEIS Alternatives Analysis, BLM did not consider the Private Land and other private offsite alternatives under NEPA on the basis that these alternatives would not accomplish the purpose and need of the proposed action. [8]

The decision not to examine these alternatives was incorrect because BLM's statement of purpose and need for the SA/DEIS is too narrowly drawn. Courts have held that although an agency has discretion to define the purpose and need of a project, it cannot use "unreasonably narrow" terms to define a project's objective.

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[7] 40 C.F.R. § 1502.14.

[8] "since the proposed actions under review in this document are whether to approve or deny, or approve with modification an application for the Calico Solar project to be sited on public land, analysis of a private land alternative would not be consistent with the stated purpose and need of the proposal." SA/DEIS B.2-18.

The Department of Interior ("DOI") regulation, 40 C.F.R. § 1502.13 merely requires that an EIS briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action. DOI's NEPA handbook explains that the "purpose and need statement for an externally generated action must describe the BLM purpose and need, not an applicant's or external proponent's purpose and need. " Department of Interior, Bureau of Land Management, National Environmental Policy Act Handbook 35 (citing 40 C.F.R. § 1502.13) (emphasis added).

Here, however, in contravention of NEPA guidelines, the BLM only looked to the Applicant's purpose and need. The SA/DEIS stated that the purpose and need is "to respond to Palen Solar I, LLC's application under Title V of FLPMA, 43 U.S.C. § 1761, for a ROW grant to construct, operate, and decommission a solar thermal facility on public lands in compliance with FLPMA, BLM ROW regulations, and other Federal applicable laws." SA/DEIS ES-6. Based on this narrow statement of purpose and need, BLM has declined to examine any private land off-site alternatives (as well as dismissing alternative technologies, distributed generation, energy efficiency and demand response). In so doing, BLM impermissibly rejected reasonable alternatives that resolved most if not all significant biological impacts of the project [9]on the basis of inconsistency with the applicant's purpose and need. Moreover, BLM did so in spite of numerous scoping comments requesting consideration of a private/disturbed land alternative.[10]

As the Energy Policy Act, and related Secretarial and Executive Orders direct BLM to "encourage the development of environmentally responsible renewable energy" while complying with existing environmental laws, – the project purpose and need statement need not be so narrowly drawn as to preclude the consideration of alternative locations and technologies. To do so reflects the needs of the project applicant, not the needs of BLM, in violation of NEPA. In fact, an agency's refusal to consider an alternative that would require some action beyond that of its congressional authorization is counter to NEPA's intent to provide options for agencies. See 40 C.F.R. 1502.14. BLM's decision to narrow its purpose and need to preclude the analysis of alternative sites, and to avoid analysis of offsite alternatives because they are outside of its jurisdiction, renders the SA/DEIS deficient.

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[9] The North of Desert Center alternative would have less severe cultural, visual and biological impacts, SA/DEIS B.2-82, and would reduce Project impacts to less than significant." B.2-49

[10] SA/DEIS ES-9ff.

VI Conclusion

For these reasons, the SA/DEIS violates NEPA, CEQA and potentially FLPMA. Accordingly, it should be revised and re-released. Also, the CDCA and NECO Plans should be revised to give desert-wide guidance, prior to approval of the substantial public land conversion currently proposed by renewable energy projects. In terms of specific local impacts, we would like to reiterate that we support development of a reduced or reconfigured Project that would avoid impacts to Mojave fringe-toed lizard and ensure NECO-mandated tortoise connectivity.

Thank you for the opportunity to comment on this important project.

Very truly yours,

Joan Taylor, Chair
California/Nevada Desert Energy Committee
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bcc

Subject comments on proposed Palen Solar Power Plant

To Whom It May Concern:

Please accept and fully consider the following comments on the Draft EIS for the Palen Solar Power Project on behalf of The Wilderness Society, Natural Resources Defense Council, and Defenders of Wildlife.

Thank you,

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Palen DEIS comments Final.pdf Exhibit 1 - Desert Siting Criteria Memo June 29.pdf

THE WILDERNESS SOCIETY
NATURAL RESOURCES DEFENSE COUNCIL
DEFENDERS OF WILDLIFE

July 1, 2010

CAPSSolarPalen@blm.gov

Re: Draft Environmental Impact Statement and California Desert Conservation Area Plan Amendment for the Proposed Palen Solar Power Project

Ms. Allison Shaffer:

This letter constitutes the comments on the above-captioned proposed solar project and draft environmental impact statement (DEIS) of The Wilderness Society (TWS), the Natural Resources Defense Council (NRDC), and the Defenders of Wildlife, all national environmental membership organizations with long histories of advocacy on behalf of the lands and resources administered by the Bureau of Land Management (BLM). More recently these organizations have been intensively involved in the Bureau's work to develop a comprehensive solar program as well as its efforts to "fast track" the permitting of individual utility-scale solar projects in California so that they may be eligible for grant funding under the American Recovery and Reinvestment Act of 2009 (ARRA).

Introduction. Our organizations recognize the need to develop the nation's renewable energy resources and to do so rapidly in order to respond effectively to the challenge of climate change. Unique natural resources here in California are already being affected by climate change, including, for example, the pikas of Yosemite National Park and the Joshua trees in Joshua Tree National Park. We also recognize that renewable energy development can help create jobs in communities that are eager for them, because of the nation's economic crisis. For these and other related reasons, our organizations are working with regulators and project proponents to move renewable energy projects forward. That said, renewable development is not appropriate everywhere on the public lands and must be balanced against the equally urgent need to protect unique and sensitive resources of the California Desert Conservation Area (CDCA). California is lucky indeed that we have sufficient renewable resources, including solar resources, to do their development in an environmentally and fiscally sensitive way.[1]

As we and our colleagues at sister organizations have repeatedly stated, the best way to develop the solar resources of the CDCA is through comprehensive, pro-active planning by both the federal government and the state to identify the most appropriate areas for such development -- *i.e.*, solar development zones -- and to guide development to those zones. *See, e.g.,* letter dated June 29, 2009 to Interior Secretary Salazar and California's Governor Schwarzenegger and signed by 11 organizations, including our own, attached as Exhibit 1.

We support the BLM's adoption of zone designation for its forthcoming solar programmatic EIS because of the benefits inherent in this approach, including but not limited to clustering

[1] California's Renewable Energy Transition Initiative found, for example, that the state potentially could access 500 GW of renewable energy, an order of magnitude greater than the state's peak demand and far beyond the ability of our electric grid could handle.

development of large-scale projects in appropriate places, rather than permitting them to be located across the landscape in numerous locations. We also applaud the agency's – and the Interior Department's – commitment to work closely with the State of California in the development of the Desert Renewable Energy Conservation Plan which, as you may already know, will designate not only renewable energy development zones, but also zones for conservation as well as include a comprehensive mitigation strategy. The integration and completion of both of these efforts offers the promise of a balanced plan that will facilitate development of renewable resources in the Desert while protecting desert resources.

Despite our fundamental belief in the critical importance of agency-guided development of renewable energy, rather than developer-initiated development, we have, as indicated, been investing a great deal of time and effort into the fast track projects. We have done so in response to the emphasis the Department, the BLM and the developers place on meeting ARRA deadlines as well as the potential role these projects could play in meeting the renewable generation and economic goals of the state and federal governments. We have also done so because we wanted to make the projects, and especially the utility-scale solar projects, as environmentally sensitive as they can be and because we wanted to ensure, to the extent possible, that their accompanying environmental documents are as sound as they can be. It is now apparent to us that not even the best of the environmental documents being produced for the fast track projects and/or the best projects should be models or precedents for the future.

The fast track project sites were chosen without the benefit of siting criteria developed either by desert activists, environmental organizations, scientists and others, *see* Renewable Siting Criteria for California Desert Conservation Area, attached to June 29, 2009 letter referred to above, or by the BLM. The BLM in fact has yet to develop any siting guidance that would help field staff, developers and others identify appropriate sites – i.e., those with relatively low resource values and fewer resource conflicts. Moreover, the projects themselves were designated by Interior and the BLM as fast track projects without consideration of potential environmental issues. And, equally important, the timetable established for review of these projects did not take into account their scale, the agency's lack of experience with the technologies involved, and the agency's lack of expertise permitting these kinds of projects.

Regardless of the outcome of the environmental review process for this or any other fast track project, we urge the BLM and the Interior Department to acknowledge publicly the deficiencies of the current process and to commit publicly to improving it. More specifically, we urge both entities to affirm that neither the current process, nor any of the project sites, nor any of the environmental documents, establish any legal or procedural precedents for future decision-making, siting or environmental review. We make this urgent recommendation notwithstanding the fact that this particular project appears to be proposed for a site with acceptable areas and the accompanying DEIS represents a slight improvement in several respects over other such documents.

<u>The Palen Solar Power Plant Project.</u> The proposed project site has some characteristics that are conducive to solar development including a location near to existing infrastructure. The proposed site is 0.5 miles north of Interstate 10, which is also a designated utility corridor with existing and planned transmission lines. See Palen Solar Power Plant Project CEC-BLM SA/DEIS at A-4 and B.2-14. It is also 10 miles from the unincorporated area of Desert Center, id. A-4, and there are approximately 750 acres of agricultural land and 149 acres of developed land (roadways and cleared land) within a one-mile buffer to the east and southeast of the proposed project site. Id. C.2-16. Another characteristic conducive to solar development is the transmission capacity that exists approximately ten miles west of the Palen project site. It appears that a gen-tie line would be

built to connect to the Southern California Edison transmission system near Desert Center (the exact location is unknown at this time). Id. B.3-12.

Equally important, portions of this ROW application appear to be of comparatively lower natural resource values than some of the other ROW applications currently being considered for ARRA funding. The entire site implicates no Area of Critical Environmental Concern (ACEC) designated by the BLM or other special agency designation. Although the proposed site overlaps with approximately 210 acres of desert tortoise critical habitat, id. C.2-63, it is our understanding that this is because the habitat boundaries had been adjusted to follow section lines and are not necessarily an accurate representation of habitat suitability. The Desert Wildlife Management Area boundary (DWMA), located outside of the proposed project area, is a more accurate representation of habitat suitability for desert tortoise. Although the site does provide habitat and connectivity for desert tortoise, a federally endangered species, and signs indicating the presence of and use by desert tortoise were found in the study area, no live desert tortoise were found on the site, id. C.2-35, unlike other ARRA project sites such as Tessera's Calico project and Solar Millennium's Ridgecrest project which support sizable populations of this endangered species. See Calico Solar Power Project CEC-BLM SA/DEIS at C.2-3 and Ridgecrest Solar Power Project CEC-BLM SA/DEIS 5.3-1. While the above characteristics render some portions of the site more appropriate than some other locations for solar development, we do still have concerns about project impacts and the DEIS document.

Our principal concerns with the impacts of the Palen Solar project at this time relate to four biological resources: impacts to the sand transport corridor and stabilized and partially stabilized sand dunes in the eastern portion of the proposed project; impacts to desert tortoise connectivity and other wildlife movement corridors; impacts to the Chuckwalla DWMA and desert tortoise critical habitat from the proposed Red Bluff substation; and the availability of sufficient water for the proposed project.

Biological Resources: The proposed project would have direct impacts to 1,735 acres of Mojave fringe-toed lizard habitat in the eastern portion of the proposed project site where fine sandy soils are present in the active and stabilized sand dunes. Id. C.2-83. Because of impacts to downwind active sand dunes from the disruption of the sand transport corridor, the project would also have significant impacts to the downwind habitat for this species. Id. Populations of the Mojave fringe-toed lizard are naturally fragmented which "leaves the species vulnerable to local extirpations from additional habitat disturbance and fragmentation." Id. C.2-84. The Mojave fringe-toed lizard is considered sensitive by state and federal agencies and impacts from this project, as currently configured, are significant and unmitigable. Id. In light of this finding, we strongly urge the BLM to continue to modify this project in order to avoid impacts to the sand transport corridor and Mojave fringe-toed lizard habitat. One modification we support is an alternative that largely avoids the eastern one-half of the proposed project in order to provide a suitable level of protection for this sensitive species and its habitat.

A second area of concern is impacts to desert tortoise connectivity and other wildlife movement corridors. While this site is mostly considered low to moderate quality desert tortoise habitat (3,899 acres), id. C.2-63, the proposed project would significantly affect a desert tortoise habitat connectivity zone established pursuant to the Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) to provide for movements north and south under I-10 and through existing drainage crossings. Id. ES-11 and C.2-82. This habitat connectivity zone connects high-quality desert tortoise habitat in between the Chuckwalla DWMA, Chuckwalla Valley, and the Chemehuevi DWMA. Id. ES-11. Large washes through the center of the project site (running southwest to northeast) provide wildlife movement corridors for various species and habitat

connectivity for desert tortoise. Id. C.2-82. Impacts to desert tortoise connectivity from the proposed project are unmitigable as the project is currently configured. Id. C.2-83. Again, we urge the BLM to modify the project in order to avoid and significantly reduce impacts to desert tortoise connectivity and wildlife movement corridors.

A third area of concern is the potential environmental impacts from the construction and operation of the proposed Red Bluff substation and the gen-tie line. Although the exact location of the substation is unknown, id. B.3-12, the DEIS states that it will be located in the Chuckwalla DWMA and desert tortoise critical habitat unit. Id. C.2-110. We urge the BLM to evaluate alternative sites for the substation to avoid impacts to the desert tortoise and Mojave fringe-toed lizard.

Finally, the letter from the Colorado River Board of California dated March 22, 2010 indicates that the issue of groundwater availability for this project has not yet been settled. No new water from the Colorado River is available for this project including groundwater from lands underlying the "accounting surface" "except through the contract of an existing BCPA Section 5 contract holder", page 2. The availability of sufficient water for the construction and operation of this facility is a key issue for this project and must be addressed in subsequent environmental analysis. The BLM must document for itself and the public that the developer in fact has the water needed for this project in hand; otherwise the agency cannot approve this proposed project.

Cultural Resources: Analysis of the proposed project's impacts to cultural resources is still ongoing. Id. C.3-1. The agencies are currently undertaking a negotiated stakeholder Programmatic Agreement (PA) that they expect to complete midsummer. Id. C.3-15. The PA will also address mitigation for project impacts to cultural resources. In addition, cultural resources data compilation for the reconfigured alternative is ongoing and the analysis of impacts to cultural resources will be included in the Supplemental Staff Assessment that the CEC has already committed to prepare. Id. ES-17. The BLM must also incorporate this information into its review of this proposed project and assess all project impacts – direct, indirect and cumulative – to cultural resources. Pending additional information and analysis on cultural resources, we reiterate our recommendation from our scoping comments that the BLM develop strategies to minimize and mitigate impacts on the area's outstanding cultural resources and engage in consultation with local Native American tribes. Finally, we do not believe the BLM can finalize a NEPA document for this project without fully complying with the Section 106 requirements of the National Historic Preservation Act. The relevant findings regarding impacts to cultural resources and Native American values associated with the proposed project must be disclosed in the NEPA analysis.

DEIS Elements: Our concerns with the draft environmental review document itself relate to three key elements: the purpose and need statement, the alternatives considered, and the cumulative impact analysis, all of which were problems with the Bureau's first solar DEIS, the Ivanpah DEIS, and are showing incremental improvement with subsequent DEIS documents including the Palen Solar Power Plant DEIS. We are also concerned about how the BLM will ensure that the new proposal(s) and new information that have come to light or will come to light after publication of the DEIS will be fully analyzed and made available to the public. To maximize the legal defensibility of the Palen environmental review process, the BLM should seriously consider issuing a supplemental DEIS. Our organizations also believe that the DEIS should have addressed the impacts that climate change will have on species and their habitats.

The purpose and need statement for this project is slightly broader than the one in the Ivanpah draft, but it remains too narrow. Ivanpah's original purpose and need was explicitly limited to a

stark dichotomy: "approve" or "deny" the company's application for a solar project and, as the result, the first draft document addressed only the "no action" option and the "proposed project." A supplemental draft with a revised purpose and need and additional alternatives was issued in an attempt to remedy this egregious approach to "the heart" of the process established by the National Environmental Policy Act (NEPA).

The Palen EIS draft states that the BLM's purpose and need is "to respond to" the company's ROW application. Id. A-11. The BLM should avoid both this mindset as well as too narrow a statement of purpose and need in order to help ensure that its EISs are legally defensible documents. In place of the statement that was used here, our organizations urge the adoption of the following to achieve these goals:

> The purpose of the proposed action is to "facilitate environmentally responsible commercial development of solar energy projects"[2] consistent with the statutory authorities and policies applicable to the Bureau of Land Management, including those providing for contributions towards achieving the renewable energy and economic stimulus and renewable energy development objectives under the Energy Policy Act of 2005 (EPAct), the American Recovery and Re-Investment Act, and Presidential and Secretarial orders as well as the Federal Land Policy and Management Act (FLPMA).
>
> The need for this action is to implement Federal policies, orders and laws that mandate or encourage the development of renewable energy sources, including the Energy Policy Act of 2005, which encourages the Department of the Interior to seek to approve at least 10,000 MW of non-hydropower renewable energy on public lands by 2015, and the Federal policy goal of producing 10% of the nation's electricity from renewable resources by 2010 and 25% by 2025; to enable effective implementation of the economic incentives for qualifying projects intended by the American Recovery and Reinvestment Act; and to support the State of California's renewable energy and climate change objectives, consistent with BLM's mandates and responsibilities under FLMPA.

This kind of purpose and need statement would clearly satisfy applicable legal requirements, see, e.g., National Parks Conservation Assn v. BLM, 586 F.3rd 735 (9th Cir. 2009), and thus help ensure that environmentally acceptable projects – which this project may end up being –will not only be permitted but will also be built without unnecessary delays.

Alternatives: The DEIS for the Palen Solar project shows some improvement over the Ivanpah DEIS in its treatment of alternatives – in addition to the proposed project, two build alternatives are presented for NEPA analysis and three no project approval alternatives.[3] See Palen DEIS at B.2-3.

We recommended in previous comments on this proposed project that the BLM consider alternative configurations for this project that avoid impacts to the northeast and eastern portions of the site where the stabilized and partially stabilized sand dunes are located. We also urged the BLM to work to address impacts from the project to Mojave fringe-toed lizard and desert tortoise

[2] This quotation is from Secretary Salazar himself.
[3] One CEQA-only alternative is analyzed. See Palen DEIS at B.2-19.

movement including a desert tortoise connectivity zone established to provide for movements north and south under I-10 through existing drainage crossings. Id. C.2-82.

The BLM has included two alternatives that reduce impacts to biological resources in comparison to the proposed project: the reconfigured alternative modifies the shape of the western and eastern power blocks to avoid some impacts to desert washes and wildlife movement corridors, id. B.2-1, and the reduced acreage alternative further eliminates portions of the proposed project that would have unmitigable impacts to both the sand transport corridor in the northern and northeastern portion and the wildlife movement corridor and reduces the project to 375 MW, id. B.2-1.

It appears that the reconfigured project would reduce impacts to the main wash through the project site (that acts as a local sand source, provides Mojave fringe-toed lizard habitat and a wildlife movement corridor), but would still have substantial indirect impacts to stabilized and partially stabilized sand dunes. Id. C.2-2 and C.2-5. The 375 MW smaller project alternative would provide the benefits described above from the reconfigured alternative and would also substantially reduce the impacts to the sand transport corridor, sand dune habitat, and Mojave fringe-toed lizard of the construction and operation of the proposed project. Id.

The reduced acreage alternative also eliminates the project overlap with 210 acres of Critical Habitat for desert tortoise in the southwestern portion of the project area. Id. B.2-1. However, as indicated above, it is our understanding that the project's overlap with desert tortoise Critical Habitat is because the critical habitat boundaries had been adjusted to follow section lines and are not necessarily an accurate representation of habitat suitability. In fact, almost the entirety of the Chuckwalla Desert Critical Habitat Unit is located south of I-10, while the small area that overlaps with the proposed project is north of the interstate. It is unclear that avoiding this area would reduce significant biological impacts.

We are pleased that the BLM recognizes the significant impacts that would occur to the Mojave fringe-toed lizard, its habitat, and the sand transport corridor from the proposed project footprint as well as the reconfigured alternative. Id. B.2-12, C.2-5 and C.2-83. We urge the BLM to continue to work with the applicant to address potential impacts to biological resources. The most effective way of mitigating significant impacts is through avoidance, which would entail consideration and adoption of an alternative that ensures important habitat and sensitive species in the northeast and eastern portions of the project site. Changes to the configuration and size of the project to reduce such impacts that have been developed after the release of the DEIS must be fully analyzed and made available to the public.

However, we are still concerned that the BLM's approach to the analysis of alternatives for the proposed project has unnecessarily limited the range of alternatives. The BLM states that it considers alternatives proposed to be located on lands outside of its jurisdiction to be "unreasonable." Id. B.2-2. In defining what is a "reasonable" range of alternatives, NEPA requires consideration of alternatives "that are practical or feasible" and not just "whether the proponent or applicant likes or is itself capable of carrying out a particular alternative"; in fact, "**[a]n alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable**." Council on Environmental Quality, *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*, *Questions 2A and 2B*, *available at* http://ceq.hss.doe.gov/nepa/regs/40/40p3.htm; 40 C.F.R. §§ 1502.14, 1506.2(d). The California Energy Commission (CEC) considers alternatives that include private lands provided site control can be obtained in a reasonable timeframe and with some certainty. In the case of the North of Desert Center private land alternative, the CEC found this alternative includes approximately 151

parcels with 40 separate landowners and that site control could be challenging to obtain due to the number of private land owners. See Palen DEIS at B.2-2.

Finally, we are concerned with the BLM's failure to include adequate information regarding the environmental impacts from the construction and operation of the proposed Red Bluff substation and the gen-tie line in the DEIS. Although the exact location of the substation is unknown, id. B.3-12, the DEIS states that it will be located in the Chuckwalla DWMA and desert tortoise critical habitat unit. Id. C.2-110. The DEIS should have included alternatives for the substation location that would have avoided this DWMA and impacts to the desert tortoise and Mojave fringe-toed lizard. We urge the BLM to address this deficiency in subsequent environmental review documents.

Cumulative Impacts: In order to properly site renewable energy projects, it is essential that a cumulative impacts analysis be conducted to fully evaluate the implications of this type of development on public lands. Cumulative impact is defined as the impact on the environment which results from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future action regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. 40 C.F.R. § 1508.7.

There are multiple solar and transmission projects proposed in the vicinity of the Palen Solar power plant that will contribute to overall cumulative impacts to sensitive resources in this area. A list of existing and future foreseeable projects along the 1-10 corridor in Eastern Riverside County is included in the DEIS. See Palen DEIS at B.3-8 to B.3-13. In addition to the proposed solar and transmission projects, the DEIS identifies residential development projects, a large race track, and several other projects that will also contribute to cumulative impacts. Id. B.3-9 to B.3-13. While not all of these projects are being permitted by the Bureau, all reasonable efforts must be made to obtain information regarding their potential impacts and construction timing so that a full picture of cumulative impacts can be presented in the final EIS.

The DEIS utilizes qualitative information about these existing and foreseeable projects to develop estimates and model impacts to key topics such as air quality and biological resources. More quantitative information is highly desirable, to supplement this qualitative material. In addition, the DEIS should address impacts from this project in the context of other connected projects including the associated Red Bluff substation. Further, the cumulative impact analysis should evaluate at-risk species and their habitats in the region to identify the condition and trend for these species and whether additional impacts from current and foreseeable future projects would conform to BLM policy on special status species management (Manual 6840), wildlife habitat management (Manual 6500), as well as legal mandates for public land management established by FLPMA.

FLPMA mandates that public lands: "…be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will pro-vide for outdoor recreation and human occupancy and use;" (Sec. 5 102(8)). FLPMA also addresses management of public lands within the CDCA: "the California desert environment is a total ecosystem that is extremely fragile, easily scarred, and slowly healed. (Sec. 601(a)(2)); and "the California desert environment and its resources, including certain rare and endangered species of wildlife, plants, and fishes, and numerous archeological and historic sites, are seriously threatened by air pollution, inadequate Federal management authority, and pressures

of increased use, particularly recreational use, which are certain to intensify because of the rapidly growing population of southern California; (Sec. 601(a)(3)); and lastly, " It is the purpose of this section to provide for the immediate and future protection and administration of the public lands in the California desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality. (Sec. 601(b)).

Climate Change Impacts: The DEIS's discussion of climate change focuses on the reduction of greenhouse gases and the development of renewable energy resources. That is, it looks at the effects of the proposed action on climate change. It does not, however, analyze the impacts of climate change on species of concern in the project area, on their habitats, or on the importance of maintaining habitat connectivity in the sustaining species diversity and landscape level movements. The latter impacts are clearly relevant. *See, e.g.*, Secretarial Order 3289, Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources (February 22, 2010). Such an analysis will allow the BLM to assess and reduce the vulnerabilities of the proposed action to climate change, integrate climate change adaptation into the proposed action and alternatives and produce accurate predictions of environmental consequences of the proposed actions and alternatives.

New Information: Lastly, we are concerned, as indicated above, about the new information, including information on the proposed project's impacts to cultural resources in the reconfigured alternative, id. C.3-1, information about the location of the Red Bluff substation, id. B.3-12, information on further modifications to the configuration of the preferred alternative, id. A-2, and the complete survey results including data from special status plant and golden eagle surveys conducted this year, id. C.2-94, that has been developed since the DEIS was printed. In addition, the California Energy Commission will release a new document, the Palen Revised Staff Assessment, with relevant information to this project and information that was not available in the Palen DEIS. Id. A-2. If BLM issues a supplemental DEIS, new information in the Palen Revised Staff Assessment should be incorporated into that document.

BLM should make every effort to ensure that all this new information is made available to the public (and other agencies) along with assessments and analyses of the information as well as that the public is given an opportunity to comment thereon. Public input on agency proposals is one of the hallmarks of NEPA review and it is to prevent the undermining of that critical aspect that limits have been imposed on agency efforts to "load up" final EISs with excessive amounts of new information.

Conclusion. In conclusion, some areas within the site proposed for this project appear to have fewer resource conflicts than some of the other sites currently being reviewed for fast-track projects, but nonetheless the impacts to the resources identified in these comments and to other desert resources must be fully analyzed, avoided, and mitigated through the BLM process. As we have previously noted, renewable development is not appropriate everywhere on the public lands and must be balanced against the equally urgent need to protect unique and sensitive resources of the CDCA. California is lucky indeed that we have sufficient renewable resources, including solar resources, to do their development in an environmentally responsible manner.

Thank you in advance for considering our comments. If you have any questions about them, please do not hesitate to contact us.

Sincerely,

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cc: Jim Abbott, Acting California State Director, BLM
cc: Alan Solomon, Project Manager, California Energy Commission

Audubon California
California Native Plant Society * California Wilderness Coalition
Center for Biological Diversity * Defenders of Wildlife
Desert Protective Council * Mojave Desert Land Trust
National Parks Conservation Association
Natural Resources Defense Council * Sierra Club * The Nature Conservancy
The Wilderness Society * The Wildlands Conservancy

Renewable Siting Criteria for California Desert Conservation Area

Environmental stakeholders have been asked by land management agencies, elected officials, other decision-makers, and renewable energy proponents to provide criteria for use in identifying potential renewable energy sites in the California Desert Conservation Area (CDCA). Large parts of the California desert ecosystem have survived despite pressures from mining, grazing, ORV, real estate development and military uses over the last century. Now, utility scale renewable energy development presents the challenge of new land consumptive activities on a potentially unprecedented scale. Without careful planning, the surviving desert ecosystems may be further fragmented, degraded and lost.

The criteria below primarily address the siting of solar energy projects and would need to be further refined to address factors that are specific to the siting of wind and geothermal facilities. While the criteria listed below are not ranked, they are intended to inform planning processes and were designed to provide ecosystem level protection to the CDCA (including public, private and military lands) by giving preference to disturbed lands, steering development away from lands with high environmental values, and avoiding the deserts' undeveloped cores. They were developed with input from field scientists, land managers, and conservation professionals and fall into two categories: 1) areas to prioritize for siting and 2) high conflict areas. The criteria are intended to guide solar development to areas with comparatively low potential for conflict and controversy in an effort to help California meet its ambitious renewable energy goals in a timely manner.

Areas to Prioritize for Siting

- Lands that have been mechanically disturbed, i.e., locations that are degraded and disturbed by mechanical disturbance:
    - Lands that have been "type-converted" from native vegetation through plowing, bulldozing or other mechanical impact often in support of agriculture or other land cover change activities (mining, clearance for development, heavy off-road vehicle use).[1]
- Public lands of comparatively low resource value located adjacent to degraded and impacted private lands on the fringes of the CDCA:[2]
    - Allow for the expansion of renewable energy development onto private lands.
    - Private lands development offers tax benefits to local government.
- Brownfields:
    - Revitalize idle or underutilized industrialized sites.
    - Existing transmission capacity and infrastructure are typically in place.

- Locations adjacent to urbanized areas:[3]
    - Provide jobs for local residents often in underserved communities;
    - Minimize growth-inducing impacts;
    - Provide homes and services for the workforce that will be required at new energy facilities;
    - Minimize workforce commute and associated greenhouse gas emissions.
- Locations that minimize the need to build new roads.
- Locations that could be served by existing substations.
- Areas proximate to sources of municipal wastewater for use in cleaning.
- Locations proximate to load centers.
- Locations adjacent to federally designated corridors with existing major transmission lines.[4]

High Conflict Areas

In an effort to flag areas that will generate significant controversy the environmental community has developed the following list of criteria for areas to avoid in siting renewable projects. These criteria are fairly broad. They are intended to minimize resource conflicts and thereby help California meet its ambitious renewable goals. The criteria are not intended to serve as a substitute for project specific review. They do not include the categories of lands within the California desert that are off limits to all development by statute or policy.[5]

- Locations that support sensitive biological resources, including: federally designated and proposed critical habitat; significant[6] populations of federal or state threatened and endangered species,[7] significant populations of sensitive, rare and special status species,[8] and rare or unique plant communities.[9]
- Areas of Critical Environmental Concern, Wildlife Habitat Management Areas, proposed HCP and NCCP Conservation Reserves.[10]
- Lands purchased for conservation including those conveyed to the BLM.[11]
- Landscape-level biological linkage areas required for the continued functioning of biological and ecological processes.[12]
- Proposed Wilderness Areas, proposed National Monuments, and Citizens' Wilderness Inventory Areas.[13]
- Wetlands and riparian areas, including the upland habitat and groundwater resources required to protect the integrity of seeps, springs, streams or wetlands.[14]
- National Historic Register eligible sites and other known cultural resources.
- Locations directly adjacent to National or State Park units.[15]

EXPLANATIONS

[1] Some of these lands may be currently abandoned from those prior activities, allowing some natural vegetation to be sparsely re-established. However, because the desert is slow to heal, these lands do not support the high level of ecological functioning that undisturbed natural lands do.

[2] Based on currently available data.

[3] Urbanized areas include desert communities that welcome local industrial development but do not include communities that are dependent on tourism for their economic survival.

[4] The term "federally designated corridors" does not include contingent corridors.

[5] Lands where development is prohibited by statute or policy include but are not limited to:

National Park Service units; designated Wilderness Areas; Wilderness Study Areas; BLM National Conservation Areas; National Recreation Areas; National Monuments; private preserves and reserves; Inventoried Roadless Areas on USFS lands; National Historic and National Scenic Trails; National Wild, Scenic and Recreational Rivers; HCP and NCCP lands precluded from development; conservation mitigation banks under conservation easements approved by the state Department of Fish and Game, U.S. Fish and Wildlife Service or Army Corps of Engineers a; California State Wetlands; California State Parks; Department of Fish and Game Wildlife Areas and Ecological Reserves; National Historic Register sites.

[6] Determining "significance" requires consideration of factors that include population size and characteristics, linkage, and feasibility of mitigation.

[7] Some listed species have no designated critical habitat or occupy habitat outside of designated critical habitat. Locations with significant occurrences of federal or state threatened and endangered species should be avoided even if these locations are outside of designated critical habitat or conservation areas in order to minimize take and provide connectivity between critical habitat units.

[8] Significant populations/occurrences of sensitive, rare and special status species including CNPS list 1B and list 2 plants, and federal or state agency species of concern.

[9] Rare plant communities/assemblages include those defined by the California Native Plant Society's Rare Plant Communities Initiative and by federal, state and county agencies.

[10] ACECs include Desert Tortoise Desert Wildlife Management Areas (DWMAs). The CDCA Plan has designated specific Wildlife Habitat Management Areas (HMAs) to conserve habitat for species such as the Mohave ground squirrel and bighorn sheep. Some of these designated areas are subject to development caps which apply to renewable energy projects (as well as other activities).

[11] These lands include compensation lands purchased for mitigation by other parties and transferred to the BLM and compensation lands purchased directly by the BLM.

[12] Landscape-level linkages provide connectivity between species populations, wildlife movement corridors, ecological process corridors (e.g., sand movement corridors), and climate change adaptation corridors. They also provide connections between protected ecological reserves such as National Park units and Wilderness Areas. The long-term viability of existing populations within such reserves may be dependent upon habitat, populations or processes that extend outside of their boundaries. While it is possible to describe current wildlife movement corridors, the problem of forecasting the future locations of such corridors is confounded by the lack of certainty inherent in global climate change. Hence the need to maintain broad, landscape-level connections. To maintain ecological functions and natural history values inherent in parks, wilderness and other biological reserves, trans-boundary ecological processes must be identified and protected. Specific and cumulative impacts that may threaten vital corridors and trans-boundary processes should be avoided.

[13] Proposed Wilderness Areas: lands proposed by a member of Congress to be set aside to preserve wilderness values. The proposal must be: 1) introduced as legislation, or 2) announced by a member of Congress with publicly available maps. Proposed National Monuments: areas proposed by the President or a member of Congress to protect objects of historic or scientific interest. The proposal must be: 1) introduced as legislation or 2) announced by a member of Congress with publicly available maps. Citizens' Wilderness Inventory Areas: lands that have been inventoried by citizens groups, conservationists, and agencies and found to have defined "wilderness characteristics." The proposal has been publicly announced.

[14] The extent of upland habitat that needs to be protected is sensitive to site-specific resources. For example: the NECO Amendment to the CDCA Plan protects streams within a 5-mile radius of Townsend big-eared bat maternity roosts; aquatic and riparian species may be highly sensitive to changes in groundwater levels.

[15] Adjacent: lying contiguous, adjoining or within 2 miles of park or state boundaries. (Note: lands more than 2 miles from a park boundary should be evaluated for importance from a landscape-level linkage perspective, as further defined in footnote 12).

"Michael J. Connor"
<mjconnor@westernwatersheds.org>
07/01/2010 03:34 PM

To CAPSSolarPalen@blm.gov, Allison Shaffer <Allison_Shaffer@blm.gov>
cc asolomon@energy.state.ca.us
bcc
Subject Comments on Palen Solar Power Plant DEIS

Dear Ms. Shaffer:

Attached please find Western Watersheds Project's comments on the Draft Environmental Impact Statement/Staff Assessment for the Chevron Energy Solutions/Solar Millennium Palen Solar Power Plant (PSPP) and Possible California Desert Conservation Area Plan Amendment.

Could you please respond to this email to confirm that you received and could open the attached file?

Thank you.

Michael Connor

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Michael J. Connor, Ph.D.
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07-01-10-WWPCommentsPalenSolarMilleniumDEIS.pdf

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Working to protect and restore Western Watersheds

July 1, 2010

By Email

Allison Shaffer, Project Manager
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< CAPSSolarPalen@blm.gov >
< asolomon@energy.state.ca.us >

Re: Draft Environmental Impact Statement/Staff Assessment for the Chevron Energy Solutions/Solar Millennium Palen Solar Power Plant (PSPP) and Possible California Desert Conservation Area Plan Amendment.

Dear Ms. Shaffer:

On behalf of Western Watersheds Project and myself, please accept the following comments on the Draft Environmental Impact Statement/Staff Assessment for the Chevron Energy Solutions/Solar Millennium Palen Solar Power Plant (Palen Solar Power Plant) and Possible California Desert Conservation Area Plan Amendment.

Western Watersheds Project works to protect and conserve the public lands, wildlife and natural resources of the American West through education, scientific study, public policy initiatives, and litigation. Western Watersheds Project and its staff and members use and enjoy the public lands, including the lands at issue here, and its wildlife, cultural and natural resources for health, recreational, scientific, spiritual, educational, aesthetic, and other purposes.

Western Watersheds Project submitted scoping comments for this project on December 23, 2009. We have attached a copy of those comments to this letter. We hereby incorporate by reference the entire contents of that scoping letter into these comments.

The Palen Solar Power Plant is a massive project will have significant direct, indirect and cumulative impacts on some of the desert's most sensitive biological resources and on important cultural resources. Specific issues of concern that we have identified in the DEIS include:

(1) Range of Alternatives.

The NEPA implementing regulations specify that NEPA documents must analyze a full range of alternatives. Based on the information and analysis presented in the sections on the Affected Environment (40 C.F.R. § 1502.15) and the Environmental Consequences (40 C.F.R. § 1502.16), the NEPA document should present the environmental impacts of the proposed action and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public. In order to comply with the spirit and letter of NEPA, the EIS must consider alternatives that meet the project goals and not simply propose "straw man" alternatives that can then be dismissed from further consideration.

The DEIS should be revised to include alternatives that meet the project need but that avoid the significant impacts to biological resources and to ecological processes that they depend upon such as sand flow.

(2) Desert Tortoise.

The NEPA requires agencies to take a "hard look" at the environmental effects of a project. This requires the BLM to describe, clearly characterize and identify the direct, indirect and cumulative effects.

As we outlined in our scoping comments, the proposed project site is within California's Colorado Desert and within the Eastern Colorado Desert Tortoise Recovery Unit as identified in the 1994 Desert Tortoise (Mojave Population) Recovery Plan. We raised the concern that the Palen project would disrupt connectivity between the Eastern Colorado Recovery Unit and the Northern Colorado Recovery Unit. This could reduce gene flow and impair desert tortoise recovery.

The DEIS takes the position outlined in the draft (i.e. not final) revised recovery plan that California's desert tortoise population be treated as a single recovery unit. This is a scientifically controversial position since there is data indicating that tortoises from the 1994 Northern and Eastern Colorado Recovery Units are discernible using genetic analysis (see Murphy et al, 2007[1]). However, whether or not there is a scientific basis for the 1994 recovery units being combined into a single recovery unit the issue of loss of connectivity remains. This has not been addressed in the DEIS.

As we stated in our scoping comments:

"The Palen site is a particular concern. This habitat provides crucial connectivity between the desert tortoises in the Eastern Colorado Recovery Unit and those in the Northern Colorado Recovery Unit. The project places connectivity between the two recovery units at risk.

The Project Applicant's application states that,

[1] Murphy, R. W., Berry, K. H., Edwards, T. and Mcluckie, A. M. 2007. A Genetic Assessment of the Recovery Units for the Mojave Population of the Desert Tortoise, *Gopherus agassizii*. Chelonian Conservation and Biology 6(2): 229–251.

> "The PSPP would have less than significant impacts on biological resources with implementation of avoidance, minimizations, and mitigation measures, except for unmitigable significant impacts to desert tortoise (DT) and Mojave fringe-toed lizard (MFTL) movement." (Application at 5.3-1, emphasis added)

One of the objectives for desert tortoise recovery in the 2002 Northern and Eastern Colorado Desert Management Plan (NECO) is "e. Mitigate effects on tortoise populations and habitat outside DWMAs to provide connectivity between DWMAs." (NECO at 2-17). Clearly then, use of the Palen project location is incompatible with the biological goals and objectives of the NECO Plan. Construction of a this proposed power plant would thus be incompatible with the CDCA Plan, the governing land use plan.

Maintaining connectivity is important especially given the threats posed by global climate change. As the USFWS 2008 Draft Revised Recovery Plan notes,

> "Climatic regimes are believed to influence the distribution of plants and animals through species-specific physiological thresholds of temperature and precipitation tolerance. Warming temperatures and altered precipitation patterns may result in distributions shifting northward and/or to higher elevations, depending on resource availability (Walther et al. 2002). We may expect this response in the desert tortoise to reduce the viability of lands currently identified as "refuges" or critical habitat for the species." (USFWS 2008 at 133)"

In addition, a portion of the Palen project site is designated as desert tortoise critical habitat. The EIS should also consider the status of the tortoises in the affected recovery units. The latest reports from the Desert Tortoise Recovery Office cite a 37% decline in tortoise density between 2005 and 2007.[2]

The DEIS should be revised to take the requisite "hard look" at all the direct, indirect and cumulative impacts of the proposed project and all associated infrastructure including roads, facilities and transmission lines on the desert tortoise.

(3) Mojave Fringe-toed lizard.

The DEIS describes the Palen Project has having unmitigable significant impacts to the sand transport corridor. This will have serious impacts on the Mojave fringe-toed lizard. The FLPMA precludes the BLM from authorizing projects that will result in undue degradation and the BLM is also precluding from authorizing actions that could propel the listing of this sensitive species under the Endangered Species Act.

The DEIS should be revised to take a hard look at impacts to the Mojave fringe-toed lizard and explain the minimization and avoidance measures that will adopted if this project is approved that will reduce impacts to sand transport to less than significant.

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[2] USFWS. 2009. Range-wide Monitoring of the Mojave Population of the Desert Tortoise: 2007 Annual Report. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada.

(4) Streambed Alteration.

Desert washes, drainage systems, and washlets are very important habitats for plants and animals in arid lands. Water concentrates in such places, creating greater cover and diversity of shrubs, bunch grasses, and annual grasses and forbs. The topography is often more varied, as are soil types and rock types and sizes, creating diverse sites for burrows, caves, and other shelters. The resulting "habitats" tend to attract more birds, mammals, reptiles, and invertebrates. For example, desert tortoises spend disproportionately more time in washes than they do on "flat" areas.[3] There must be full mitigation for impacts to streambeds as required under the California Fish and Game Code.

Western Watersheds Project thanks you for the opportunity to submit comments on the DEIS for the proposed Palen solar power plant project. Please keep Western Watersheds Project on the list of interested public for this project. If we can be of any assistance or provide more information please feel free to contact me by telephone at (818) 345-0425 or by e-mail at <mjconnor@westernwatersheds.org>.

Yours sincerely,

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Attachment: Western Watersheds Project's December 23, 2009 Scoping Comments Re: Intent to Prepare Two Environmental Impact Statements/ Staff Assessments for the Proposed Chevron Energy Solutions/Solar Millennium Palen and Blythe Solar Power Plants, Riverside County, CA and Possible Land Use Plan Amendments. 7 pp.

cc. Alan Solomon, California Energy Commission <asolomon@energy.state.ca.us>

[3] Jennings, B.J. 1997. Habitat Use and Food Preferences of the Desert Tortoise, *Gopherus agassizii*, in the Western Mojave Desert and Impacts of Off-Road Vehicles. Proceedings: Conservation, Restoration, and Management of Tortoises and turtles—An International Conference, pp. 42–45. New York Turtle and Tortoise Society.

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Working to protect and restore Western Watersheds

December 23, 2009

By Email

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Re: Notice of Intent to Prepare Two Environmental Impact Statements/ Staff Assessments for the Proposed Chevron Energy Solutions/Solar Millennium Palen and Blythe Solar Power Plants, Riverside County, CA and Possible Land Use Plan Amendments.

Dear Ms. Roberts and Mr. Solomon:

On behalf of Western Watersheds Project and myself, please accept the following scoping comments as you embark on the preparation of Environmental Impact Statements ("EIS") for the proposed Proposed Chevron Energy Solutions/Solar Millennium Palen and Blythe Solar Power Plants, Riverside County, CA and Possible Land Use Plan Amendments.

Western Watersheds Project works to protect and conserve the public lands, wildlife and natural resources of the American West through education, scientific study, public policy initiatives, and litigation. Western Watersheds Project and its staff and members use and enjoy the public lands, including the lands at issue here, and its wildlife, cultural and natural resources for health, recreational, scientific, spiritual, educational, aesthetic, and other purposes.

According to the scoping notice, the Bureau of Land Management ("BLM") and the California Energy Commission ("CEC") are developing a PSA, EIS and possible plan amendment for two separate right-of-way (ROW) authorizations filed by Chevron Energy Solutions/Solar Millennium (CESSM) to construct and operate the Palen and Blythe solar thermal power plants in eastern Riverside County, California with an expected combined

capacity of 1,452 megawatts (MW) using solar parabolic trough generating stations. Approximately 10,100 acres of BLM-administered public land are needed to develop the two projects.

These massive projects will have significant direct, indirect and cumulative impacts on some of the desert's most sensitive resources including species listed under the Endangered Species Act such as desert tortoise and on important cultural resources.

Specific issues of concern that should be addressed in the NEPA documents to ensure compliance with NEPA and to ensure that NEPA's requisite "hard look" at the environmental impacts include:

(1) Range of Alternatives.

The NEPA implementing regulations specify that NEPA documents must analyze a full range of alternatives. Based on the information and analysis presented in the sections on the Affected Environment (40 C.F.R. § 1502.15) and the Environmental Consequences (40 C.F.R. § 1502.16), the NEPA document should present the environmental impacts of the proposed action and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public

In order to comply with the spirit and letter of NEPA, the EIS must consider alternatives that meet the project goals and not simply propose "straw man" alternatives that can then be dismissed from further consideration. We suggest that the agencies consider the following reasonable alternatives in addition to any proposed action:

(a) "No Action Alternative" as is required by NEPA.
(b) Alternative sites on public lands with fewer resource conflicts.
(c) Alternative that features technology that requires significantly less water.
(d) A private lands alternative under which the project is built on private lands only.
(e) A distributed energy alternative using "roof top" solar to avoid the need for construction of a power plant.

Full analysis of these alternatives will help clarify the need for the proposed project, provide a baseline for identifying and fully minimizing resource conflicts, facilitate compliance with the BLM's FLPMA requirement to prevent the unnecessary and undue degradation of public lands and its resources, and will help provide a clear basis for making an informed decision.

(2) Desert Tortoise.

The NEPA/CEQA documents must describe, clearly characterize and identify the desert tortoise population that will be impacted by each alternative if the agencies are to take NEPA's requisite "hard look" at the environmental effects.

The proposed project sites are within California's Colorado Desert and both projects lie within the Eastern Colorado Desert Tortoise Recovery Unit.

A portion of the Palen project site is designated as desert tortoise critical habitat. The Project Applicants for both the Palen and the Blythe Projects describe the project sites as having low tortoise densities. Additional surveys should be conducted to confirm this. The EIS should also consider the status of the tortoises in the affected recovery units. The latest reports from the Desert Tortoise Recovery Office cite a 37% in tortoise density between 2005 and 2007.[1]

Both the Palen and Blyth Projects would disrupt connectivity between the Eastern Colorado Recovery Unit and the Northern Colorado Recovery Unit. This could reduce gene flow and impair desert tortoise recovery.

The Palen site is a particular concern. This habitat provides crucial connectivity between the desert tortoises in the Eastern Colorado Recovery Unit and those in the Northern Colorado Recovery Unit. The project places connectivity between the two recovery units at risk.

The Project Applicant's application states that,

> "The PSPP would have less than significant impacts on biological resources with implementation of avoidance, minimizations, and mitigation measures, except for <u>unmitigable significant impacts</u> to desert tortoise (DT) and Mojave fringe-toed lizard (MFTL) movement." (Application at 5.3-1, emphasis added)

One of the objectives for desert tortoise recovery in the 2002 Northern and Eastern Colorado Desert Management Plan (NECO) is "e. Mitigate effects on tortoise populations and habitat outside DWMAs to provide connectivity between DWMAs." (NECO at 2-17). Clearly then, use of the Palen project location is incompatible with the biological goals and objectives of the NECO Plan. Construction of a this proposed power plant would thus be incompatible with the CDCA Plan, the governing land use plan.

Maintaining connectivity is important especially given the threats posed by global climate change. As the USFWS 2008 Draft Revised Recovery Plan notes,

> "Climatic regimes are believed to influence the distribution of plants and animals through species-specific physiological thresholds of temperature and precipitation tolerance. Warming temperatures and altered precipitation patterns may result in distributions shifting northward and/or to higher elevations, depending on resource availability (Walther et al. 2002). We may expect this response in the desert tortoise to reduce the viability of lands currently identified as "refuges" or critical habitat for the species." (USFWS 2008 at 133)

The NEPA/CEQA documents should provide a review of the direct, indirect and cumulative impacts of the proposed project on the tortoise of the Eastern Colorado and Northern

[1] USFWS. 2009. Range-wide Monitoring of the Mojave Population of the Desert Tortoise: 2007 Annual Report. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada.

Colorado Recovery Units, and all associated infrastructure including the roads and transmission lines.

(3) Other Sensitive species and Rare Plants.

A number of sensitive species of wildlife and rare plants occur on the project or in the vicinity including the Mojave fringe-toed lizard and Harwoods' milkvetch.

The Palen Project Applicant's application describes impacts to Mojave fringe-toed lizard movement as significant and unmitigable. The EIS must explain how this project could move forward without the agencies propelling a listing of this species under the Endangered Species Act.

We are unaware of any extent occurrences of Harwoods' milkvetch on private lands. In light of this, the EIS must explain how this project could move forward without the agencies propelling a listing of this species under the Endangered Species Act.

The EIS should carefully consider and an analyze impacts to all State protected species such as burrowing owl, sensitive species, rare plants and Unusual Plant Assemblages (UPA) that would be affected by the project. It should provide detailed vegetation and wildlife maps to facilitate public input into the process.

(4) Invasive Species.

Invasive weeds grow easily wherever the natural vegetation and biological soil crusts are disturbed. The disturbance to the soil and natural vegetation that will occur as a result of the construction and maintenance of this transmission project must not be allowed to establish a "weed corridor" across the landscape. Once established, weeds are almost impossible to remove permanently.

Invasive plants and weeds are threats to native habitat, rare plants, and sensitive species. They pose an immense fire hazard. Using chemicals to kill weeds requires exposing the environment, species, and watershed area to a toxic substance which can be the source of further damage to environmental and human health. Manual weed control requires much human effort, machinery, and can cause even more disturbance, leading to erosion, disturbance, and, in some cases, more weeds. The EIS should carefully consider how invasive plants and weeds will be manages and controlled.

(5) Hazards and Hazardous Materials.

The EIS should disclose any potentially toxic or hazardous wastes that may be associated with these projects during project construction, operation, and maintenance including pesticides and herbicides.

(6) Fire Prevention and Suppression.

The EIS should address the effects that each alternative for each project may have on wildfire risks. Wildfires are becoming increasingly common in the Mojave Desert facilitated by the spread of invasive weeds and climate change. Wildfires can result in type conversion of large expanses of habitat. Wildfires could be caused by construction or operation of the transmission lines. Development of roads and transmission lines could encourage increased motorized vehicle access which increases fire risk especially when coupled with the spread of invasive weeds.

(7) Desert Washes, Ephemeral Streams and Soils.

Desert washes, drainage systems, and washlets are very important habitats for plants and animals in arid lands. Water concentrates in such places, creating greater cover and diversity of shrubs, bunch grasses, and annual grasses and forbs. The topography is often more varied, as are soil types and rock types and sizes, creating diverse sites for burrows, caves, and other shelters. The resulting "habitats" tend to attract more birds, mammals, reptiles, and invertebrates. For example, desert tortoises spend disproportionately more time in washes than they do on "flat" areas.[2] The wash habitat impacted by each alternative should be evaluated and appropriate mitigations made for stream bed alterations.

Soil erosion on low fill slopes and steeply graded areas could result in sedimentation of water bodies. Changes in hydrology and soil movements may impact rare plants and habitats for sensitive species, and may impact burrowing species such as the desert tortoise.

(8) Cultural & Paleontological Resources.

The EIS should discuss and analyze impacts to cultural and paleontological resources. The Mojave Desert is rich in structures and artifacts of significant cultural value that are irreplaceable once lost. The areas around dry lake beds are particularly rich in archaeological sites. Construction of structures and access roads could damage or destroy historic and archaeological sites, traditional cultural properties, or areas containing paleontological resources. Temporary use of staging areas and conductor pull sites could damage or destroy historic and archaeological sites, traditional cultural properties, or areas containing paleontological resources. Building new transmission lines through previously undisturbed areas could cause physical damage to artifacts and sites, expose cultural resources to looters, and could increase fires due to soil disturbance and subsequent weed invasion placing these cultural resources at risk of future damage.

(9) Global Climate Change.

Department of the Interior Order No. 3226 mandates that the BLM must consider the impacts of each proposed alternative with respect to global climate change in its NEPA reviews. The agencies should use the recently released USGS desert tortoise habitat model to determine likely changes in desert tortoise habitat quality in the area and the importance of the desert

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[2] Jennings, B.J. 1997. Habitat Use and Food Preferences of the Desert Tortoise, *Gopherus agassizii*, in the Western Mojave Desert and Impacts of Off-Road Vehicles. Proceedings: Conservation, Restoration, and Management of Tortoises and turtles—An International Conference, pp. 42–45. New York Turtle and Tortoise Society.

tortoise habitat. In addition to addressing climate change in the cumulative effects analysis, the EIS should address the carbon footprint of the project and any losses to carbon storage and sequestration it will engender.

(10) Visual Resources.

The public lands provide significant value as visual resources. The EIS should fully review the impacts of each alternative on visual resources.

(11) Water Issues.

The EIS must provide information on the water needs of these power plants both in the construction and operation phases and the source of these waters. The EIS must fully analyze impacts to the local and regional water reserves.

(12) Cumulative Effects.

The EIS must considered the cumulative effects of this project in combination with all the other consumptive uses that are occurring on these public lands including livestock grazing, off road vehicle activity, and mining. New transmission line projects have the potential to open up more lands to energy (or other) development, placing wide swaths of habitat at risk, and greatly increase degradation and fragmentation of habitats and important wild land areas and have lasting and damaging impacts. The project will also facilitate and will act cumulatively with the many other energy developments that are planned for the area including utility-scale solar energy plants. All these activities will impact the same biological, cultural, geologic, and visual resources as the proposed project.

(13) Monitoring Programs.

The NEPA/CEQA documents must explain the monitoring programs that will be in place to monitor the short and long term impacts of the project. This should include the timelines, and estimated costs and sources of funding for the monitoring programs.

(14) Mitigation.

BLM is obligated under FLPMA to "minimize adverse impacts on the natural, environmental, scientific, cultural, and other resources and values (including fish and wildlife habitat) of the public lands involved." [43 U.S.C. §1732(d)(2)(a)] Other laws, including the Endangered Species Act and the California Endangered Species Act also entail the need for mitigations to minimize impacts. BLM is required to consider measures to mitigate potential environmental consequences in its NEPA analysis. [40 C.F.R. § 1502.16] The NEPA implementing regulations define "Mitigation" to include:

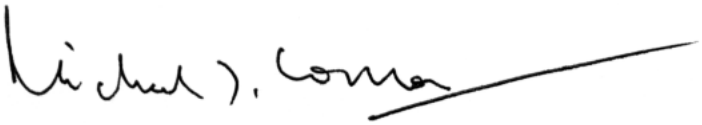
> (a) Avoiding the impact altogether by not taking a certain action or parts of an action.

(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
(e) Compensating for the impact by replacing or providing substitute resources or environments.
[40 C.F.R. §1508.20]

The EIS should describe the restoration and rehabilitation activities that will be required for habitat disturbed during construction. For example, construction material yards will lose their native vegetation, have their soils compacted, and increase the amount of wind and water erosion while leaving these areas at an increased risk of weed invasion. Transporting materials, labor, and equipment in and out of construction areas will also have their own set of impacts that must be minimized. Construction may also require the use of "temporary" roads that will require extensive rehabilitation if they are not to become permanent intrusions on the landscape. Rehabilitation of desert habitat is a long, slow and uncertain process.

Western Watersheds Project thanks you for the opportunity to submit scoping comments on the proposed solar plant project. Please keep Western Watersheds Project on the list of interested public for this project. If we can be of any assistance or provide more information please feel free to contact me by telephone at (818) 345-0425 or by e-mail at <mjconnor@westernwatersheds.org>.

Yours sincerely,



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