UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

SEP 28 2011

Mr. Peter Godfrey
California Desert District Office, BLM
22835 Calle San Juan De Los Lagos
Moreno Valley, California 92553

Subject: Draft Environmental Impact Statement and California Desert Conservation Area Plan Amendment for the West Chocolate Mountains Renewable Energy Evaluation Area, Imperial County, California [CEQ# 20110199]

Dear Mr. Godfrey:

The U.S. Environmental Protection Agency has reviewed the Draft Environmental Impact Statement and California Desert Conservation Area Plan Amendment for the West Chocolate Mountains Renewable Energy Evaluation Area, Imperial County, California. Our comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508) and our NEPA review authority under Section 309 of the Clean Air Act.

EPA strongly supports the development of renewable energy resources, as recommended in the Energy Policy Act of 2005, provided that projects are well planned and suitably located to minimize adverse environmental impacts. Accelerating the pace of development will help the U.S. meet its energy demand, create new jobs, reduce our dependence on imported oil, and provide for increased energy security while reducing greenhouse gases. To avoid unnecessary delays, it is critical that potential conflicts be identified and avoided to the extent possible from the outset. To that end, EPA provided extensive scoping comments on March 12, 2010, which included detailed recommendations regarding the overall scope and content of the EIS, as well as recommendations on NEPA-related topics including purpose and need, range of alternatives, biological resources and habitat, water resources, and other areas of concern.

Based on our review of the DEIS, we recognize that the Bureau of Land Management is striving to create a more refined process for guiding the development of renewable resources within the WCM REEA. BLM proposes to do this by identifying lands that may be suitable for renewable energy development; outlining the general type of development allowed; and implementing a competitive process for solar applications that favors water-efficient solar technologies and projects that minimize potential conflicts to military airspace operations. We strongly support these overarching goals and commend BLM for demonstrating this initiative on the project.

We have rated the DEIS as *Environmental Concerns – Insufficient Information* (EC-2). Please see enclosed "*Summary of EPA Rating Definitions*." An "EC" signifies that EPA's review of the DEIS has identified environmental impacts that should be avoided in order to provide adequate protection for the environment. A "2" rating signifies that the DEIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment. In

the enclosed detailed comments, we have identified issues of concern, along with specific recommendations for your consideration.

Although we support the overarching goals of the project, the EPA is concerned about potential impacts to aquatic, biological, and cultural resources within the WCM REEA, and the need to mitigate for such impacts. Complete inventories of aquatic, cultural, or biological resources have not been conducted, and the few studies that have been conducted have been limited in scope. We are particularly concerned about the potential impact to wetlands, including waters of the United States, as approximately 2,286 acres of U.S. Fish and Wildlife Service designated wetlands were identified in the WCM REEA. Impacts to these wetlands and drainages could be of a magnitude that is a significant environmental concern, especially within an arid ecosystem. In addition, some portions of the REEA are likely located in areas of high flood risk. We would like to see clearer designations of such areas, including areas that will be excluded, as well as more specific commitments to avoid and minimize impacts. The Final Environmental Impact Statement should include a robust discussion of all avoidance and mitigation measures proposed for the WCM REEA and an outline of the requirements for a compensatory mitigation plan.

The EPA is also concerned about the availability of water resources within the Imperial Valley. According to the DEIS, the Imperial Irrigation District has allocated 25,000 acre-feet/year for non-agricultural projects within its service area. Some sections of the REEA, however, are located outside of the IID service area and would not be eligible to receive any water from the IID. In addition, it is not clear how much of the 25,000 AF/y is available for renewable energy development, or how long it will be available.

We have concerns about the inconsistent approach BLM utilizes in dealing with the Reasonably Foreseeable Development scenario, particularly for solar development. Within the *Alternatives Analysis*, BLM describes a maximum RFD scenario unique to each alternative. Within the *Environmental Consequences* section, however, BLM defines a *new* RFD scenario, based on typical project sizes, and then uses that scenario as the basis for calculations pertaining to resource impacts. Interspersed in this analysis, however, are calculated values for acreages of land disturbed by development, and these are based on the maximum RFD scenario. In short, the EIS does not utilize the 'RFD scenario' *consistently* throughout the document, which leads to great confusion as the reader tries to understand the association between the various RFD scenarios and the calculated impacts. It is important that BLM correct this fundamental error so that the reader can understand and evaluate the potential impacts associated with each of the alternatives. EPA recommends that BLM define a reasonable scenario for solar development specific and appropriate to each alternative, and then utilize that scenario consistently throughout the document.

EPA appreciates the opportunity to review this DEIS, and we are available to discuss these comments with you further. Please send one hard copy of the FEIS and two CD ROM copies to this office at the same time it is officially filed with our Washington D.C. Office. If you have any questions, please contact me at 415-972-3521, or contact Ann McPherson, the lead reviewer for this project. Ann can be reached at 415-972-3545 or mcpherson.ann@epa.gov.

Sincerely,

Kathleen Martyn Goforth, Manager
Environmental Review Office (CED-2)

Enclosures: EPA Summary of Rating Definitions
EPA Detailed Comments

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

U.S. EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND CALIFORNIA DESERT CONSERVATION AREA PLAN AMENDMENT FOR THE WEST CHOCOLATE MOUNTAINS RENEWABLE ENERGY EVALUATION AREA, IMPERIAL COUNTY, CALIFORNIA, SEPTEMBER 28, 2011

Water Resources

Wetlands Protection

According to the Draft Environmental Impact Statement, there are 2,286 acres of wetlands present in the West Chocolate Mountains Renewable Energy Evaluation Area. The U.S. Environmental Protection Agency is concerned that land disturbance activities may impact these wetlands. Scoping comments were submitted recommending that the REEA exclude all high value habitats associated with the Salton Sea, Salton Sea shoreline, and any wetland or riparian habitat associated with natural drainages between Bombay Beach and the Imperial State Wildlife Area due to its importance for a number of listed and declining bird species and endangered pupfish (pg. 2-53). The DEIS states that the Bureau of Land Management eliminated alternate BLM locations with significant environmental concerns, but does not elaborate on whether any of these areas were avoided. Avoiding such features is of crucial importance to the protection of aquatic resources within the WCM REEA. Programmatic design features should be established to protect these valuable resources from direct and indirect impacts.

> *Recommendations:*
> The Final Environmental Impact Statement should clarify whether high value habitats associated with the Salton Sea, as well as wetland and riparian habitat associated with natural drainages, have been excluded from the WCM REEA. The EPA recommends that BLM exclude such areas from development and apply an effective buffer around them to limit potential impacts from development.
>
> The FEIS should programmatically exclude authorization of renewable energy development in wetlands and microphyll woodlands.
>
> The FEIS should establish enforceable, programmatic design features for wetland protection that would be applied to all renewable energy projects.

Compliance with Clean Water Act Section 404

Pursuant to Section 404 of the CWA, discharge of dredged or fill material to waters of the United States (waters of the U.S., jurisdictional waters, waters) requires a Section 404 permit issued by the U.S. Army Corps of Engineers. In order to comply with the 404(b)(1) Guidelines, the applicant must determine the geographic extent of waters and comprehensively evaluate a range of alternatives to ensure that the "preferred" alternative is the Least Environmentally Damaging Practicable Alternative. Identification of the LEDPA is achieved by performing an alternatives analysis that estimates the direct, indirect, and cumulative impacts to jurisdictional waters resulting from a set of on- and off-site project alternatives. The alternatives analysis that is required for a Section 404 permit differs from the alternatives analysis required under the National Environmental Policy Act. The Section 404 alternatives analysis must include on-site and off-site alternatives, which may include private land, BLM-administered land, and/or disturbed sites. Nevertheless, coordination of the NEPA and CWA Section

404 processes can help to avoid unnecessary delays in environmental review, approval, and permitting of proposed projects.

> *Recommendations:*
> The FEIS should clarify that compliance with CWA Section 404 should be addressed as early in the Right-of-Way application process as possible to ensure that proposed projects are permittable under the CWA.
>
> The FEIS should discuss the subsequent environmental documentation that would be required if jurisdictional waters are present on a proposed project site. For example, the FEIS should state that, if the developer needs a CWA Section 404 permit, a project-level EIS, rather than an Environmental Assessment, may be required.

Conceptual Mitigation Plan

If unavoidable impacts are anticipated, a conceptual mitigation plan is also needed that identifies the following: 1) an assessment of the functions and values of the wetlands that would be impacted; 2) the conceptual approach on how mitigation site selection will be carried out; 3) the number of acres of proposed mitigation; and 4) a basic discussion of the type of mitigation that will take place. Note: This is a subset of the "12 elements" of the mitigation plan in the Mitigation Rule that EPA believes can be appropriately defined during the programmatic NEPA stage (40 CFR 230).

Compensatory Mitigation

The DEIS does not present any discussion or proposal on compensatory mitigation for aquatic resource impacts. EPA cannot discern the extent of loss and degradation to aquatic resources at this programmatic level; therefore, addressing compensation for impacts to aquatic resources is difficult. Nonetheless, compensatory mitigation should be discussed. The DEIS states that drainage crossings will be designed to accommodate estimated peak flows and ensure that natural volume capacity can be maintained throughout construction and upon post-construction restoration (pg. 3-14). This does not, however, address compensation for the loss of acreage, as well as other functions and support services provided by waters.

> *Recommendation:*
> EPA recommends the development of a comprehensive mitigation strategy to compensate for unavoidable impacts to waters. This strategy should meet all requirements of the *Compensatory Mitigation for Losses of Aquatic Resources; Final Rule* (40 CFR Part 230, subpart J of the Guidelines).

Protection should apply to all Aquatic Resources, regardless of Jurisdiction

It is not clear what level of protection, if any, would be afforded to waters not subject to CWA Section 404 that are, nonetheless, integral to desert ecosystems and hydrology. To effectively protect and manage the desert's fragile and invaluable ecosystems, the distribution of aquatic resources on a project site – regardless of CWA jurisdictional status – should be fully disclosed by an applicant in its ROW application for renewable energy development on public lands. If BLM's approval criteria were

modified to incentivize avoidance of aquatic resources, e.g. by prioritizing review of, and giving preference to, projects on sites selected for minimal presence of aquatic resources, BLM could programmatically shift important renewable energy development toward more disturbed lands with fewer natural resources conflicts.

Recommendations:
The FEIS should clarify which water bodies will be buffered out 100 feet, and whether this includes ephemeral washes.

The FEIS should specify that placement of project components is prohibited in water bodies, including ephemeral washes and within the 100-feet buffer. This requirement should be made compulsory for all projects to ensure consistency and accountability in protecting aquatic resources whenever and wherever it is practicable to do so.

EPA recommends that BLM's approval criteria be modified to incentivize avoidance of aquatic resources, e.g. by prioritizing review of, and giving preference to, projects on sites selected for minimal presence of aquatic resources.

Floodplain Management and Geologic Flood Hazard Class Areas

The DEIS states that floodplains of many of the drainages in the WCM REEA are substantial, and flooding may occur in these areas during infrequent precipitation events (pg. 4-79). Flood hazards also exist along the upstream side of State Road 111 and along portions of the Coachella and East Highline canals because they are oriented in a northwestern direction and intersect natural drainages flowing to the southwest (pg. 3-55).

The DEIS does not provide information on geologic flood hazard class areas within the WCM REEA. Flood hazards associated with alluvial fans are particularly hard to characterize using conventional methods. Flooding on active alluvial fans may consist of high velocity, sediment laden floodwater that may follow multiple paths simultaneously; flow paths may shift position during even low or moderate flows. Flooding can also occur as broad, largely unconfined shallow flow swaths that inundate large areas. These areas should be avoided if at all possible.

Recommendations:
The FEIS should provide a detailed description of the current floodplain in the WCM REEA and identify those areas that are most at risk.

EPA recommends that new geologic flood hazard class maps be prepared for those areas within the WCM REEA containing alluvial fans, so that the areas of highest risk can be avoided if possible[1].

[1] See *Using Geology to Improve Flood Hazard Management on Alluvial Fans - An Example from Laughlin, Nevada,* Journal of the America Water Resources Association, Vol. 41, Issue 6, pgs. 1,431-1,447, December 2005.

Estimates of Water Consumption for Solar Energy Development are in Error

The DEIS includes estimates for water consumption associated with geothermal, solar, and wind development, but the numbers used for solar development appear to be erroneous. For example, the DEIS estimates operational water needs under Alternative 3 to be up to 0.05 acre-feet per year per megawatt for photovoltaic systems and 4.5 to 14.5 AF/y/MW for solar troughs (pg. 4-91). EPA concurs with the operational estimates for PV, but notes that the operational estimates for concentrated solar power are valid for wet cooling,[2] not dry cooling. Dry cooling systems use approximately one tenth the water[3] of wet cooling system, resulting in ranges from 0.45 – 1.45 AF/y/MW.[4]

The numbers used to represent operational water needs associated with both PV and CSP appear to be grossly underestimated in Alternatives 3 and 6. For example, the DEIS states that operational water demand could be up to 15 AF/y – over the 30 year lifespan, water demand could be up to 450 AF (pg. 4-91). According to EISs that we have reviewed, a 500 MW dry-cooled, parabolic trough power plant would require about 400 AF/y of water[5] for operational use. Full build out of 2,696 MW (parabolic troughs) would require up to 2,156 AF/y – and over a 30-year period, operational water estimates would sum to 64,680 AF. Using the appropriate numbers for PV, we estimate that one 50-MW PV plant would require about 2.5 AF/y of water for operational use. Full build out of 5,540 MW would require 277 AF/y – and over a 30-year period, operational water estimates for PV would sum to 8,310 AF.

The numbers used to represent water use associated with construction for both PV and CSP technologies also appear to be grossly underestimated in Alternatives 3 and 6. For example, the DEIS states that construction water needs for PV and CSP under Alternative 3 could be up to 2.26 AF/y (pg. 4-90); however, in other EISs that we have reviewed, a single 500 MW dry-cooled, parabolic trough power plant is estimated to require about 1,950 AF of water[6] for construction – full build out of 2,696 MWs would require 10,514 AF. Furthermore, a 400 MW PV plant is estimated to require about 600 AF of water[7] for construction – likewise, a 50 MW PV plant would require about 75 AF – and the construction of 5,540 MWs of PV would require about 8,310 AF.

Recommendations:
The FEIS should revise all estimates of water consumption associated with solar energy development. Errors are found on pages 4-90, 4-91, 4-95, and 4-96. In addition, errors are also found in the Water Use section of the Cumulative Impacts Analysis (pgs. 4-312, 4-313, and Table 4.20).

EPA recommends compiling these data in table format using the following values: 25-50 and 250-500 MWs PV, 25-50 and 250-500 MWs concentrated PV, 250-500 MWs parabolic trough (dry cooling), and maximum Reasonably Foreseeable Development scenarios (5,540 MW PV and 2,696 MW parabolic trough). Such a table would illustrate the range of values that may be

[2] See the Draft Programmatic EIS for Solar Energy Development in Six Southwestern States, December 2010, pg. 3-4.
[3] See the Draft Programmatic EIS for Solar Energy Development in Six Southwestern States, December 2010, pg. 3-4.
[4] Operational water use for parabolic troughs (100-400 MW) using dry cooling is estimated at 0.2 – 1.0 AF/y/MW according to the Draft Solar Programmatic EIS (December 2010).
[5] See the Final EIS for the Amargosa Farm Road Solar Energy Project, October 2010, pg. 2-25.
[6] See the Final EIS for the Amargosa Farm Road Solar Energy Project, October 2010, pg. 2-28.
[7] See the Final EIS for the Silver State Solar Energy Project, September 2010, pg. 2-38.

encountered for solar energy development in the WCM REEA. References for values used to calculate water use should be provided. Note: Optimum plant size for parabolic trough projects is estimated to be 250-350 MWs – so using a smaller number, such as 250 MW, would also be reasonable for this technology.

Surface Water Availability

According to the DEIS, the majority of water use in the basin is supplied by imported Colorado River water (pg. 3-61). At the time the DEIS was written, the Imperial Irrigation District was preparing an Integrated Regional Water Management Plan that would determine a water allocation for renewable energy resources within the service area, and implementation of the IRWMP was expected in mid-year 2011. In the interim, the IID promulgated the Interim Water Supply Policy, which allocates 25,000 AF/y for non-agricultural projects. Given that the IID is the primary water provider in the region and that renewable energy projects may require substantial amounts of water for construction and operations, IID's allocation could be a major constraint to development (pg. 2-2). In addition, some portions of the WCM REEA are outside of the IID water service area and would not be eligible to receive water from the IID (pg. 2-2).

Recommendations:
The FEIS should identify what portion of the 25,000 AF/y designated for non-agricultural use is currently available for renewable energy use.

The FEIS should provide an update on when the IRWMP is expected to be completed and the designated water allocation for renewable energy resources, if that information is available.

The FEIS should include a map illustrating the IID water service area and identify those sections of the REEA located outside the boundary that would be ineligible to receive IID water.

Groundwater Availability

EPA is concerned about the long-term availability of groundwater in the WCM REEA, considering the quantities needed for the maximum RFD scenario and the potential impacts associated with pumping groundwater in this area. Where surface water bodies, including springs, are connected, lowering the water table may result in reduced or eliminated surface flows in springs or rivers. Surface water impacts may include reduction of flow volume and duration in some seasonal water courses, as well as permanent water sources. Lowering of the water table may also cause other wells, such as those for domestic supply, to dry up and need to be drilled deeper, and may result in long term potential for subsidence. Lowering of the water table below the ability of plants to reach it can also result in significant impacts, such as changes in vegetation and increased erosion.

Recommendations:
The FEIS should clearly identify the quantity of groundwater withdrawal allowable in the WCM REEA, and describe impacts associated with lowering of the water table.

The FEIS should discuss whether it is economically feasible to use other sources of water, including wastewater or deep-aquifer water, for renewable energy development, particularly in areas that are outside the IID boundary, and, if so, describe the impacts of using such sources.

Source of Water for Geothermal Development

The DEIS states that water consumption associated with geothermal development could utilize up to 17,885 AF/y, but does not specify the source of water. It also states that it is likely that much of the required operational water needs could be supplied by local or regional groundwater (pg. 4-80), but another potential source could be imported surface water from the IID (pg. 4-89). Furthermore, the DEIS states that a study would be required to identify the potential impacts to the local aquifer associated with the injection of *imported groundwater* and the withdrawal and injection of geothermal fluid (pg. 4-77). Based on these statements, it is unclear whether there are viable sources of local or regional groundwater for geothermal development.

Recommendation:
The FEIS should disclose the anticipated source of water for geothermal development, including whether it is likely to be from the IID or local or regional aquifers. If the IID is likely the source, the FEIS should clarify why geothermal development would not be constrained by water usage, as is solar energy development, in the Preferred Alternative. If local or regional aquifers are likely the source, the FEIS should provide estimates for capacity, quality, and cost.

The DEIS states that there is the risk of significant aquifer drawdown on and offsite, and that his impact could be minimized or avoided by selecting water sources that are outside of drinking water protection zones or from sources where there is currently no competing use (pg. 4-90).

Recommendation:
The FEIS should specify the locations of water sources with no competing use in the WCM REEA.

Additional Assessment of Water Resources Needed in WCM REEA

The DEIS provides general information on the type and distribution of aquatic resources within the WCM REEA, as well as the Salton Sea. Aquatic features were identified using the U.S. Geological Survey National Hydrography Dataset and the U.S. Fish and Wildlife Service's National Wetland Inventory. Within the WCM REEA, 301 surface water features were identified, including 200 natural drainages and 101 artificial drainages, in addition to approximately 2,286 acres of USFWS designated wetlands (pg. 3-57). Although the NHD and NWI provide information at a gross screening level regarding the distribution of surface waters, the data do not adequately capture the reach and extent of waters of the United States across the WCM REEA. Additional information on the presence of aquatic resources within the study area, especially those that may be subject to federal jurisdiction under Section 404 of the Clean Water Act, would assist future developers in site selection and design and streamline future National Environmental Policy Act analyses.

Recommendations:
EPA recommends that further analysis of aquatic resources be performed within the WCM REEA, including the identification of aquatic resources using aerial photography, existing mapping data available, and field verification. The results of such analysis should be included in the FEIS.

The FEIS should clearly explain the circumstances under which a formal site-specific jurisdictional delineation would be required and at what point in the project planning process it would be conducted.

Direct, Indirect, and Cumulative Impacts for Water Resources

The DEIS lacks a comprehensive assessment of the direct, indirect and cumulative impacts for water resources, deferring this assessment for site-specific analyses. As a result, the discussion falls short in disclosing the potential significant impacts associated with renewable energy development in the WCM REAA (pgs. 4-86 to 4-96). Although we recognize that this is a programmatic document, the analysis of impacts for each alternative is superficial and, at times, inconsistent. For example, in Section 4.5.3.1, the DEIS states that although 938 acres could be disturbed with the development of geothermal power, it is *unlikely* that the placement of aboveground structures would have a significant impact on surface hydrology within the REEA (pg. 4-79). In the next sentence, however, the DEIS states that impacts resulting from the placement of structures within or adjacent to ephemeral or perennial desert washes *could result* in significant hydrological impacts, including increased flooding frequency and intensity. Specific BMPs that would render such impacts unlikely are not identified. Finally, the DEIS concludes that the relatively small proportion of the REEA that could become impervious (less than 1.5%) due to geothermal development could contribute a *negligible increased risk* of flooding due to increased runoff (pg. 4-80).

In Section 4.5.3.2 (*Typical Impacts from Solar Energy Development*), the DEIS states that individual solar energy facilities have little impact on hydrology, although the construction of solar energy facilities on 84 percent of the WCM REEA acreage could significantly impact local hydrology (pg. 4-81). EPA disagrees with the statement that individual solar energy facilities have little impact on hydrology. EPA has evaluated 18 proposed solar projects in Region 9, ranging in size from 45 to 1,000 MWs. Even one project, if not well sited, can lead to significant impacts to aquatic resources. Potential impacts can be minimized by avoiding ephemeral or perennial desert washes and ensuring that adequate buffers, such as the 100-feet buffer from water features, are enforced.

Ephemeral and intermittent streams constitute over 81% of streams in the arid and semi-arid Southwest[8] and perform a diversity of hydrologic and biogeochemical functions that directly affect the integrity and functional condition of higher-order waters downstream. Healthy ephemeral waters with characteristic plant communities control rates of sediment deposition and dissipate the energy associated with flood flows. Ephemeral washes also provide habitat for breeding, shelter, foraging, and movement of wildlife. Many plant populations are dependent on these aquatic ecosystems and adapted to their unique conditions. The evaluation of these aquatic resources should not be discounted.

[8] See Internet address: http://azriparian.org/docs/arc/publications/EphemeralStreamsReport.pdf

Impacts to waters may be substantial and significant based on the magnitude of fill, lack of sufficient impact avoidance, and indirect and cumulative impacts to ephemeral waters on site and downstream to the Salton Sea, which is listed under CWA 303(d) as an impaired water body (nutrients, salinity, and selenium). The aquatic ecosystem may be dramatically altered by development associated with large-scale solar energy development through direct habitat loss and degradation, changes to hydrological processes, likely increase in the velocity and volume of stormwater flows, sedimentation, and a potential increase in the discharge of pollutants.

Recommendations:
The FEIS should provide a more detailed and comprehensive discussion regarding the extent of direct, indirect, and cumulative impacts to aquatic resources as a result of geothermal, solar, and wind energy development projects in the WCM REEA.

The FEIS should clarify the water features to which the 100-feet buffer will apply to, and this, specifically, includes ephemeral washes.

Generally, the DEIS splits up the impacts analysis for water resources for each of the alternatives into two distinct subsections, direct impacts from solar energy development and indirect impacts from solar energy development. The DEIS also uses another category, direct impacts from partial solar energy development. We are unclear what is meant when the DEIS splits up the impacts in these separate and distinct sections. In all three sections, the DEIS mentions that impacts could occur if up to 13,482 acres of CSP or 49,864 acres of PV were developed. We assume that the distinction is meant to capture the difference between the development of one 50 MW PV project and one 500 MW CSP project, as compared to what would happen if development proceeded at the maximum RFD scenario pace, but this needs to be stated more explicitly if that is the case.

Recommendation:
The FEIS should clarify the difference between direct and indirect impacts within the context of these separate and distinct sections, for each of the alternatives considered and for each of the resources evaluated.

Air Quality

General Conformity

The DEIS states that direct and indirect air emissions are not expected to exceed *de minimis* levels to trigger a Federal Conformity Determination (pg. ES-11). The information presented in Chapter 4, however, does not support this conclusion. According to the DEIS, annual emissions may exceed *de minimis* thresholds for NO_x and PM_{10} as a result of construction of each 50 MW geothermal power plant and well field (pg. 4-20) and each 45 MW wind farm (pg. 4-29). In addition, annual emissions may exceed *de minimis* thresholds for NO_x as a result of concurrent construction of a 500 MW CSP plant and a 50 MW PV plant (pg. 4-26).

Recommendation:
The FEIS should revise the Executive Summary to state that some projects are likely to exceed *de minimis* levels and trigger a Federal Conformity Determination.

Tables 4.1-1 (pg. 4-8), 4.1-13 (pg. 4-20), 4.1-22 (pg. 4-26), and 4.1-25 (pg. 4-29) all include *de minimis* thresholds of 50 tons/year for VOCs. EPA notes, however, that these values are incorrect and should be revised to 100 tons/year.

> *Recommendation:*
> The FEIS should change the *de minimis* threshold for VOC from 50 tons/year to 100 tons/year for Tables 4.1-1, 4.1-13, 4.1-22, and 4.1-25.

EPA compared values in Table 4.1-23 (pg. 4-27), Table 4.1-24 (pg. 4-27), and Table 4.1-25 (pg. 4-29) with values in Table 1 (Summary of Daily Emissions – 45 MW Wind Energy Project; Appendix D) and Table 2 (Summary of Total Emissions – 45 MW Wind Energy Project; Appendix D). We were unable to confirm the values for NO_x, PM_{10} (total), PM_{10} (exhaust), and PM_{10} (fugitive dust) in Table 4.1-23, when compared with Table 1. We were also unable to confirm the values listed in Table 4.1-24 for NO_x, PM_{10} (total), PM_{10} (exhaust), PM_{10} (fugitive dust), and $PM_{2.5}$ (fugitive dust) when compared with Table 2. We were also unable to confirm the values for NO_x and PM_{10} in Table 4.1-25. Note that the NO_x and PM_{10} values are also utilized in Table 4.1-26.

> *Recommendation:*
> BLM should check the values mentioned above in Tables 4.1-23, 4.1-24, 4.1-25, and 4.1-26 as well as Table 1 and Table 2 in Appendix D and eliminate discrepancies. The FEIS should be updated accordingly.

Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994) and the interagency Memorandum of Understanding on Environmental Justice and Executive Order 12898 (August 4, 2011) direct federal agencies to identify and address disproportionately high and adverse human health or environmental effects on minority and low-income populations, allowing those populations a meaningful opportunity to participate in the decision-making process. Guidance[9] by the Council on Environmental Quality clarifies the terms low-income and minority population (which includes American Indians) and describes the factors to consider when evaluating disproportionately high and adverse human health effects.

The DEIS states that this project would be constructed in a rural area where it would not physically alter any residential or commercial community. We note, however, that one unique community is located within the WCM REEA: Slab City. Slab City is a former military base that is now located on land officially owned by the State of California. As described in the DEIS, residents of Slab City include: 1) permanent residents who are in extreme poverty; 2) families who have a steady stream of income; 3) migrant farm laborers who live there seasonally; and 4) individuals who live there seasonally and are financially secure. EPA is concerned about this community because large-scale development of renewable resources in the WCM REEA will directly impact these residents. Impacts are likely to be considered adverse by those who live there. Actions to displace residents of Slab City would likely be

[9] Environmental Justice Guidance under the National Environmental Policy Act, Appendix A (Guidance for Federal Agencies on Key Terms in Executive Order 12898), CEQ, December 10, 1997.

met with some resistance (pg. 3-189). Furthermore, negative effects associated with geothermal, solar, and wind development could disproportionately affect residents of this community, including minority and low-income groups, children, and the elderly (pg. 4-253). In addition, we note that children, in particular, have greater sensitivities to various environmental contaminants, including air pollutants. Construction emissions could exacerbate existing conditions, such as asthma, for children, the elderly and those with existing respiratory or cardiac disease.

Recommendations:
The FEIS should include a commitment to mitigate all adverse impacts to human health. Analysis of potential health impacts should take into consideration the greater sensitivity of children and the elderly to certain environmental stressors. All appropriate environmental, health and safety precautions should be carefully outlined and agreed upon before any construction starts.

Assessment of the project's impact on minority and low-income populations should reflect coordination with those affected populations, including residents of Slab City.

EPA recommends that BLM consider additional options that would limit development in and around the immediate vicinity of Slab City.

Transmission Analysis

Transmission is a 'connected action' and should be thoroughly analyzed in the WCM REEA EIS.

Access to electrical transmission facilities is a major factor in siting utility-scale energy facilities, and the availability of transmission capacity is an integral component of that access. Transmission issues should be resolved prior to the construction of any utility-scale energy facility. The DEIS states that corridors transverse the WCM REEA, but detailed information on existing lines and available capacity is not presented in the EIS (pg. 3-132). BLM does not appear to have taken a "hard look" at important issues such as the available capacity on existing lines, the costs associated with upgrading or building new transmission lines, environmental impacts of such actions, and the timing of new transmission and energy development projects. The development of transmission facilities or capacity would be a "connected action"[10] to the proposed action and, as such, should be addressed in greater detail in the FEIS. In the absence of a clear demonstration of adequate available transmission capacity to support development within the area covered by the WCM REEA, EPA believes that development of additional transmission access and/or capacity is likely to be needed to support such projects.

Recommendation:
The FEIS should provide additional information on transmission within the WCM REEA including: 1) available capacity on existing lines; 2) costs associated with building new transmission lines or upgrading existing infrastructure; 3) potential environmental impacts

[10] Connected actions are actions that are closely related and, therefore, should be discussed in the same impact statement. Connected actions include actions that cannot or will not proceed unless other actions are taken previously or simultaneously (CFR 1508.25).

associated with new transmission lines or upgrades; and 4) the timing and approximate cost of new transmission and energy development projects.

Reasonably Foreseeable Development Scenarios

Identify those areas in the WCM REEA that have been excluded based on resource constraints.

The DEIS utilizes various RFD scenarios to estimate the scale of potential development within the WCM REEA under a set of development possibilities (pg. 2-2). The DEIS states that the RFD scenarios were developed based on a number of factors including: 1) known or estimated resource potential (solar intensity, geothermal reservoir, wind speed); 2) known or estimated resource constraints (topography, critical habitat to threatened and endangered species, proximity to hydrologic features, groundwater resources); and 3) availability of land for surface occupancy (pg. ES-6; pg. 2-1). As evident from the text, acquired lands (Catellus lands) and Bureau of Reclamation lands, shown on figure 1-1, are not available for leasing or ROW applications. Although figures 2-2, 2-3, 2-4, and 2-5 clearly show potentially available resources, based on solar intensity and slope, it is unclear to us which lands, if any, were excluded on the basis of other resource constraints listed above.

Recommendation:
The FEIS should include maps that clearly illustrate areas within the WCM REEA that have been excluded based on known or estimated resource constraints – including critical habitat for threatened and endangered species, proximity to hydrologic features, and groundwater resources. If such features have not yet been identified, the FEIS should explain when such features will be identified and how this information will be incorporated into the WCM REEA.

Maximum RFD Scenario presented in the Alternatives Analysis – Further suggestions

According to the DEIS, the RFD scenarios were developed by BLM to provide a basis for analyzing environmental impacts resulting from future leasing and development of federal geothermal, solar, and wind resources within the WCM REEA (pg. 2-1). Alternative 3 utilizes a maximum RFD scenario that includes 3x50 MW geothermal power plants; some combination of solar power consisting of up to 5,540 MWs from PV systems, 2,696 MWs from parabolic troughs, and 1,498 MWs from dish engines or power tower technology; and a 45 MW wind farm. The Preferred Alternative (Alternative 6) emphasizes geothermal development, with moderate solar development (5,540 MW PV or 1,498 MW dish engine), and no wind. The DEIS applies ratios based on the proportion of BLM land within the REEA to the RFD scenarios to determine the potential scale of development. According to the DEIS, development levels are likely to be far lower than the maximum RFD scenarios, based on current site-level knowledge and available data on resource constraints in the REEA (pg. 2-13). We offer the following suggestions to improve the readability of this section in Chapter 2.

Recommendations:
Insert two columns in Tables 2-2, 2-3, and 2-5 to incorporate the corresponding MWs associated with BLM disturbance and total disturbance (pgs. 2-16, 2-17, and 2-21).

Verify the numbers used for acreages of BLM land that are available for solar energy development and ensure that these numbers are used consistently in the FEIS. The DEIS uses

16,954 acres (pg. 2-16) and 17,163 acres (pg. 2-11; pg. 2-16; pg. 2-21). One of these numbers is likely incorrect.

Elaborate on the constraints used to determine acreages for total disturbance within Table 2-2. For example, the DEIS states that for concentrated solar power technologies, 13,480 acres are available for development. How did the National Renewable Energy Lab (or BLM) arrive at that number? Does it represent, specifically, 1% grade and some particular solar intensity?

The DEIS uses common ratios to assess the amount of land disturbance associated with solar energy development, including 5 acres/MW for solar troughs and 9 acres/MW for dish engine, power tower, and PV (pg. 2-4). The DEIS states that as many as 111 solar PV plants could be constructed concurrently with up to five CSP facilities (pg. 4-32). We note, however, that 111x50 MW PV plants would occupy approximately 49,950 acres and 5x500 MW CSP plants would occupy between 11,500 acres and 22,500 acres, respectively. It appears unlikely that 111 PV plants could be constructed *concurrently* with 5 CSP facilities.

Recommendations:
Revise the preceding statement to clarify that up to 111 solar PV projects could be constructed if all available land that is suitable for solar energy development in the WCM REEA is used for PV projects; otherwise, for every CSP plant that is constructed, there will be fewer acres available for PV projects.

Discuss the potential number of projects that could be built under the maximum RFD scenario in the *Alternatives Analysis* within Chapter 2.

Definition of a new RFD Scenario in the Environmental Consequences Section – Consistent Use of the new RFD Scenario is Essential in order to Evaluate Potential Impacts

At the beginning of Chapter 4, the DEIS states that the solar RFD scenario for Alternatives 3, 5, and 6 could develop either CSP or PV projects. Due to the wide range of solar development activities that could occur, analyses are based on the development of a 50 MW solar PV project and a 500 MW solar trough CSP project (pg. 4-5). EPA notes that this selection of projects (50 MW PV and 500 MW solar trough) may be suitable for analyses associated with Alternative 3 and Alternative 5, but it is inappropriate for Alternative 6, where competitive processing of solar energy applications would be constrained by water usage and potential conflicts to military airspace operations. In that case, only PV or dish technology would be appropriate.

Furthermore, the selected size for the newly defined solar RFD scenario (50 MW PV or 500 MW parabolic troughs) is *much smaller* than the maximum RFD scenario (5,540 MW PV or 2,696 MW parabolic trough project) discussed earlier in Chapter 2. In contrast, the newly defined RFD scenario for geothermal and wind energy is the *same* as the maximum RFD scenario defined earlier. To further complicate matters, the DEIS does not use the newly defined solar RFD scenarios *consistently* throughout Chapter 4. For example, in Section 4.17.4.6 (Alternative 6), the partial build-out of the solar RFD scenario is assumed to be one 15-MW solar PV plant and one 150-MW solar trough power plant (pg. 4-284). On the next page, different numbers are cited, including a 50 MW PV project and 3x150 MW CSP projects, for a total of 500 MW of solar energy projects. These numbers differ from the other

numbers used throughout Chapter 4, making it extremely difficult for the reader to recognize which RFD scenario is being used as the basis for the calculated impacts.

Recommendations:
EPA recommends that BLM define a reasonable development scenario *specific* and *appropriate* to each *alternative*, and then utilize this scenario *consistently* throughout the Environmental Consequences (Chapter 4).

The FEIS should clarify if there are distinct numbers appropriate to the partial build-out of solar projects for Alternative 6 and how they differ from those used in Alternative 3. The FEIS should ensure that these numbers are used *consistently* throughout the document.

EPA recommends consideration of more stringent restrictions on water usage within the WCM REEA. Given the substantial potential for environmental impacts from large water withdrawals in the WCM REEA, as well as the documented difficulty in obtaining water rights, EPA recommends excluding those technologies that utilize wet cooling. In addition, EPA notes that PV is currently being proposed far more frequently than other types of solar technology due to the rapid decline in cost. Thus, we have seen a steady decline in the number of parabolic trough projects since last year. In fact, several companies are now in the process of switching from parabolic trough to PV systems, even after having completed the environmental review process for parabolic troughs. In addition, the two main companies utilizing dish technology have been sold to companies that plan to utilize PV systems instead. Another technology that may be utilized more frequently in the future is concentrated photovoltaic systems. The CPV technology uses minimal water use, boasts high efficiencies, occupies minimal land surface area (5 acres/MW), and does not require complete disturbance of the land surface area.

Recommendations:
Eliminate wet cooling for both parabolic trough and power tower technology within the WCM REEA for all alternatives with a solar development component.

Add CPV technology as one of the technologies (along with PV and dish technology) that would be given precedence under Alternative 6, as it utilizes very little water, occupies minimal land surface area, and minimizes surface disturbance.

Given the checkerboard pattern of land ownership within the WCM REEA, EPA recommends consideration of smaller-sized projects with technologies such as PV and dish systems. Larger-sized projects should still be evaluated, though, since some technologies, such as parabolic trough, require greater economies of scale.

Recommendations:
Utilize smaller numbers (MWs) for PV/dish technology as well as larger numbers for PV, dish, and troughs in the 'RFD scenario' within Chapter 4. Including the same base or standard measurement for both technologies will enable more accurate comparisons of impacts. For example, we suggest the following: 25 to 50 MW PV project, a 250-500 MW PV project, and a 250-500 MW parabolic trough (dry cooling) for Alternatives 3 and 5. For Alternative 6, we recommend including the same size PV project as Alternatives 3 & 5, 25 to 50 and 250-500 MW dish technology (if this technology still appears viable), and 25-50 and 250-500 MW CPV

technology.

In addition, if BLM utilizes a set scenario for solar development for each Alternative, impacts should be tallied for this scenario, and then multiplied by some factor to capture a more realistic version of the likely extent of impacts in the WCM REEA. BLM would have to define this factor and then apply it consistently, once again, throughout Chapter 4. Worst-case scenario (in terms of impacts) would be, of course, the maximum RFD scenario.

Further Examples of Inconsistencies with RFD Scenarios

EPA notes that, in Section 4.5 (Water Resources), the DEIS uses a 50 MW PV project and a 500 MW CSP (parabolic trough project) for Alternative 3 (pg. 4-87) and a 50 MW PV facility and one 500 MW CSP project for Alternative 6 (pg. 4-95). For Alternative 6, the DEIS states each 500 MW CSP plant could result in land disturbance of 2,500 acres – this implies that BLM is utilizing parabolic trough technology with a land disturbance to MW ratio of 1:5 – as opposed to dish technology, with a ratio of 1:9. On the next page, however, the DEIS discusses operational water needs for this RFD scenario using one 50 MW PV project and one 500 MW CSP project (dish engine technology only), which, though correct, is inconsistent with what is on the previous page.

Recommendation:
The FEIS should correct such inconsistencies throughout the document, including the reference to 2,500 acres on pg. 4-95.

Using the Maximum RFD for Land Disturbances alongside the Newly Defined Solar RFD

To further complicate matters, the DEIS utilizes the maximum RFD scenario when calculating *impacts* to *acreages of land* for various resources, including Section 4.5.4.6. For example, the DEIS states that direct impacts to water resources could occur if up to 13,482 acres of CSP (dish technology only) or up to 49,864 acres of PV were developed. These values are associated with the Maximum RFD scenario, *not* the *newly defined RFD scenario* developed for the Environmental Consequences analysis in Chapter 4. These values are interspersed with the already inconsistent RFD scenario for solar energy development analysis (one 50 MW PV project and one 500 MW CSP project), and this makes it extremely difficult for the reader to recognize which RFD scenario is being used as the basis for the calculated impacts.

We agree that it is useful to break down the numbers in terms of potential project size; however, this subject needs to be discussed earlier and appropriate terminology needs to be defined and applied consistently throughout the document. Such inconsistencies are found in the other resource areas throughout Chapter 4 of the document. As a result, it is extremely difficult to understand or evaluate the potential environmental impacts until these inconsistencies have been eliminated.

Recommendations:
The FEIS should distinguish between the maximum solar RFD scenario and the full solar RFD scenario for Alternatives 3, 5, and 6. This could be done by discussing these topics more explicitly in the DEIS or by introducing terms specific to each type of scenario.

The FEIS should include calculations based on the maximum RFD scenario (worst-case scenario) for both land disturbance and *impacts to resources*. These calculations can be placed in each resource section in Chapter 4, or they can be tallied separately as a component of the Cumulative Impacts Analysis.

The DEIS states that direct, indirect, and residual impacts in Chapter 4 are estimates, and the upper range of impacts – as land use planning screening did not include cultural or biological filters for resource values, including but not limited to Native American concerns, traditional cultural properties, desert tortoise habitat, and flat-tailed horned lizard habitat, among others (pg. 4-6).

Recommendations:
EPA is unclear if the statement above is, perhaps, the basis for using the maximum RFD to calculate acreages of land disturbance associated with solar development. We request clarification on this statement.

The FEIS should explain how these calculated values can be considered as the upper range of impacts, when there is such a difference between the maximum RFD scenario and the newly defined RFD scenario utilized in Chapter 4.

The FEIS should clarify why BLM did not incorporate cultural or biological filters into land use planning screening. This contradicts the statement presented earlier in the DEIS – that RFD scenarios were developed based on known or estimated resource constraints (topography, critical habitat to threatened and endangered species, proximity to hydrologic features, groundwater resources).

Cumulative Impacts Analysis

EPA is concerned that the potential cumulative environmental impacts are underestimated in the DEIS. The Cumulative Impacts Assessment (Section 4.19) is intended to identify all projects that could contribute to the overall cumulative impacts for a particular resource. According to the DEIS, the RFD scenarios were intended to provide the information necessary to analyze potential cumulative impacts (pg. 2-3). The DEIS states, however, that for resource sections where the analysis in Chapter 4 determined that there would be *no impact* or that there would be *no impact after mitigation*, the cumulative effects under the alternatives are *not* analyzed because the action would not contribute to cumulative impacts to that resource (pg. 4-308). This conclusion is flawed because the DEIS calculated impacts for solar energy development using a newly defined RFD scenario, instead of utilizing the maximum RFD scenario. The contrast between these two scenarios is so pronounced (for solar development) that it calls into question the conclusion presented in the DEIS that the action would not contribute to cumulative impacts if, according to the newly defined solar RFD scenario, there would be no impact or no impact after mitigation.

The DEIS states that an effect is considered residual when the effect cannot be completely avoided or minimized and remains after or despite mitigation (pg. 4-1), and concludes that no residual impacts for any impacts were identified (pg. 4-328). The basis for this conclusion is unclear, given that development would cumulatively result in long-term adverse impacts, such as habitat loss, fragmentation, and degradation (pg. 4-317). Even with the implementation of mitigation measures, the alternatives would

contribute to unavoidable adverse impact to these resources (vegetation, fish and wildlife, special status species) (pgs. 4-316, 4-317, and 4-319).

The Salton Sea serves as an important wildlife area, and many existing conservation projects focus on the development of shallow saline habitat ponds along the edge of the Sea, including the Salton Sea Species Conservation Habitat Project. Although the DEIS for that project is currently out for public review, it is not listed in the cumulative impacts analysis as a reasonably foreseeable project.

Recommendations:
The BLM should estimate the level of probable development within the WCM REEA and utilize this scenario to calculate potential impacts associated with solar development in the WCM REEA. The BLM could utilize the maximum RFD scenario, or some other reasonable scenario beyond what is presently considered (50 MW PV and 500 MW parabolic trough). The FEIS should combine these impacts – with those impacts from other proposed projects within the 40-mile buffer zone – in the Cumulative Impacts Analysis.

BLM should consider revising Section 4.20.2 (Residual Impacts) or discussing the basis for its conclusion in greater detail within the FEIS.

The FEIS should include the Salton Sea Species Conservation Habitat Project in table 4.19-1.

Alternatives Analysis

The DEIS presents six action alternatives including: Alternative 1 – No Action/No CDCA Plan Amendment; Alternative 2 – No Development/CDCA Plan Amendment; Alternative 3 – Renewable energy development emphasis; Alternative 4 – Geothermal development only; Alternative 5 – Solar emphasis with moderate geothermal and no wind; and Alternative 6 – Geothermal emphasis with moderate solar and no wind. According the Executive Summary – for Alternatives 3 and 5 – wind, solar, and geothermal projects would be subject to the following constraints: 1) BOR withdrawn land is not available for leasing; and 2) acquired lands are not available for ROWs (pg. ES-7). In Chapter two, however, the text does not explicitly mention that solar and wind projects would not be allowed on acquired lands (pg. 2-15).

For Alternative 6, the competitive process will favor water-efficient solar energy technologies and technologies that avoid potential conflict to military operations. The DEIS states, however, that no particular technology is precluded from consideration in the competitive process. The DEIS does not elaborate on the competitive process for wind and solar applications, except to note that competitive procedures will be developed following the conclusion of the planning process.

Recommendations:
The FEIS should clarify whether solar development would be allowed on acquired lands under Alternatives 3 and 5 and ensure that this is stated accurately throughout the document.

The FEIS should specify the competitive procedures that will be used to sort through solar and wind ROW applications under Alternative 6.

The Preferred Alternative places an emphasis on geothermal development, with moderate solar development and no wind. The proposed development (3x50 MW) would consume considerable amounts of water – up to 17,500 AF/y, which is about 70% of the amount allocated for non-agricultural use by the IID. We are concerned that BLM has selected a Preferred Alternative that gives precedence to a technology (geothermal) that utilizes substantial amounts of water, especially since solar development is constrained by water usage. Although we recognize that geothermal facilities provide baseload power, it would seem prudent to utilize technologies that minimize water use, as is proposed for solar energy development.

> *Recommendation:*
> The FEIS should clarify why BLM has selected a Preferred Alternative that emphasizes geothermal development, which utilizes substantial amounts of water, when solar technologies are constrained by water usage.

EPA supports appropriate constraints on future development to provide for more responsible and successful siting of projects in the WCM REEA. We note, however, that the proposed terms may be more restrictive than necessary. For example, PV systems can be installed successfully in areas with less solar intensity, on slopes greater than 5 percent, and in urban areas. Relaxing some of the parameters for exclusion – or modifying them in recognition of differences in technologies – may be worth consideration, if this would result in greater protection for sensitive resources located in areas that would otherwise be developed.

> *Recommendation:*
> BLM should allow for revision of the exclusion parameters – provided that the applicant can show environmental benefits associated with these revisions.

Solar intensities in the WCM REEA are illustrated in Figures 2-2, 2-3, 2-4, and 2-5 utilizing a range of values from 6.5 to 7.5 kWh/m^2/day for CSP (1% slope) and 6.4 to 6.8 kWh/m^2/day for PV (1%, 3%, and 5% slope). According to the DEIS, areas with intensities less than 6.0 kWh/m^2/day were excluded. Furthermore, the DEIS states that portions of the WCM REEA considered suitable for CSP development contain intensities ranging from 6.7 to 7.4 kWh/m^2/day. Likewise, those portions suitable for PV development contain solar resources estimated at 6.4 to 6.6 kWh/m^2/day. In the description of alternatives, it is not clear whether these estimates or the more general restriction with a lower limit of 6.0 kWh/m^2/day will be used to guide siting of certain technologies.

> *Recommendation:*
> The FEIS should clearly state what the restrictions are and accurately show the areas where solar development will be permitted for each type of technology. If this includes those areas with intensities ranging from 6.0 to 6.4 kWh/m^2/day for PV or from 6.5 to 6.7 kWh/m^2/day for CSP, then these areas should also be shown in the corresponding figures.

Environmental Review Process for Subsequent Projects

The DEIS states that it is a programmatic document (pg. 4-19) and contains programmatic analysis (pg. 2-2). According to the DEIS, the NEPA analysis presented was developed to support decision making regarding allocation of uses and certain leasing decisions, but not specific development projects (pg. 2-

16). Thus, specific development projects on federal lands within the WCM REEA would undergo project-specific NEPA review prior to a decision to approve or reject the applications. The DEIS does not, however, discuss how BLM will decide what level of environmental analysis will be required under NEPA for subsequent projects, nor whether the NEPA documents for such projects would be tiered to the DEIS. If the intent is to use this EIS as a programmatic document from which to tier future project-specific EISs, then EPA would expect to see a more in-depth and comprehensive analysis of potential impacts, including direct, indirect, and cumulative impacts.

EPA supports several key elements and concepts presented in the DEIS, including the resource constraints and certain mitigation measures, such as the buffer of 100 feet for water features. In the absence of greater detail regarding the environmental review process for future projects, we are concerned about how BLM will ensure that such elements will be implemented in such projects.

Recommendations:

The FEIS should clarify how BLM plans to utilize this document in the future, including whether or not BLM anticipates that subsequent projects will tier off of this document.

EPA recommends that BLM elaborate on the process that BLM will use to assess whether an EA or EIS will be required for subsequent projects in the FEIS.

The FEIS should discuss, specifically, how mitigation measures and best management practices presented in this DEIS will be incorporated in subsequent projects.

The FEIS should clarify whether specific commitments, such as the 100 feet buffer for water features, will be incorporated into the Record of Decision.

Need for the Proposed Federal Action – Existing Applications

The DEIS states that the need for the proposed federal action arises from pending renewable energy applications, national policy, and Congressional direction. We agree that there is a need to respond more efficiently and consistently; however, there is only one pending non-competitive lease application for geothermal resources and no pending solar or wind ROW applications in the WCM REEA (pg. 1-11).

Recommendation:

If possible, the FEIS should explain why there are no pending renewable energy applications in the WCM REEA, except for the non-competitive lease application for geothermal resources. Were applicants steered away from the WCM REEA previously? Is transmission a factor?

Miscellaneous Comments and Edits

1. Section 3.5.3.1 – pg. 3-57 – Another substantial, off-site, natural surface water feature 2 miles north of the REEA is Salt Creek, an ephemeral stream flowing into the Salton Sea north of the REEA (figure 3.5-1). Salt Creek, however, is not identified on figure 3.5-1.

2. Executive Summary – pg. ES-10 – Alternative 6 provides information on water consumption associated with parabolic troughs using wet cooling and dry cooling. Information on water consumption

associated with wet cooling is irrelevant to this Alternative and should not be presented in this section, since parabolic trough technology would not be utilized due to constraints on water usage. This information would more appropriately be placed with Alternative 3, provided that information on water consumption is also provided for other alternatives and geothermal and wind development.

3. Section 2.2.6 – pg. 2-21 – Ditto.

4. Section 3.17.1 – pg. 3-167 – The DEIS states, "For the purposes of this analysis, the social and economic WCM REEA is considered to include those counties and communities within a one-hour drive from the proposed management are on mapped roads (Figure 3.17-1)."

Note: This information is not displayed on Figure 3.17-1. Figure 3.17-1 displays legal immigration in Riverside and Imperial Counties, 1984 – 2008.

5. Section 1.2 – Table 1-2 – pgs. 1-8, 1-10 – Table 1-2 illustrates surface and mineral ownership of lands within the WCM REEA. Acreages total up to 59,095; however, footnote 2 states that the 1,782 acres of private surface are included in the 31,551 acres of private land listed earlier in the table. It appears that the 1,782 acres are being counted twice in the tally of 59,095 acres. Please clarify. Also, although we eventually figured out how BLM concludes that there are 20,762 acres of land that contain federal surface estate (17,900 + 2,862) and 19,162 acres of federal mineral estate (17,900 + 1,782 – 600 + 80), for the ease of the reader, the FEIS should present this information clearly in a table.