

**RECORD OF DECISION FOR THE  
QUARTZSITE SOLAR ENERGY PROJECT  
AND AMENDMENT TO THE YUMA FIELD OFFICE RESOURCE  
MANAGEMENT PLAN**

Lead Agency:

*United States Department of Energy  
Western Area Power Administration*

Cooperating Agency:

*United States Department of the Interior  
Bureau of Land Management*

*Final Environmental Impact Statement for the Quartzsite Solar Energy Project and Proposed  
Yuma Field Office Resource Management Plan Amendment, December 2012  
DOE/EIS - 0440*

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## Executive Summary

This document constitutes the United States Department of the Interior's (DOI) and the Bureau of Land Management's (BLM) record of decision for the Quartzsite Solar Energy Project (QSEP or Project) and associated amendments to the BLM's Yuma Field Office (YFO) Resource Management Plan (RMP). Specifically, this ROD approves the issuance of two right-of-way (ROW) grants associated with the construction, operation, maintenance, and decommissioning of the QSEP on approximately 1,675 acres of BLM managed public land in La Paz County, Arizona (Proposed Action) – one to Quartzsite Solar Energy, LLC (QSE or Applicant) for the QSEP solar energy generating facility and related ancillary facilities and one to the Western Area Power Administration (Western) for a switchyard associated with the QSEP's interconnection to Western's transmission system. This ROD also approves an amendment to the YFO RMP to change the Visual Resource Management (VRM) class of the approximately 6,800 acres in and around the project site to VRM Class IV.

The impacts of the Proposed Action and alternatives were analyzed in the *Draft Environmental Impact Statement for the Quartzsite Solar Energy Project and Proposed Yuma Field Office Resource Management Plan Amendment* (EIS) (Western Area Power Administration October 2011), and the subsequent final EIS (December 2012), which was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality's (CEQ) NEPA regulations (40 CFR Parts 1500–1508), DOI's NEPA regulations (43 CFR Part 46), and other applicable authorities. As explained in Section 1.0 below, the BLM has adopted the Final EIS pursuant to the regulations found at 40 CFR 1506.3(c).

The QSEP is a 100 megawatt (MW) concentrating solar power (CSP) plant. In connection with the Project, QSE applied to Western, an agency of the U.S. Department of Energy (DOE), to interconnect the QSEP to Western's transmission system at the Bouse-Kofa 161-kilovolt (kV) transmission line. The QSE also applied to the BLM YFO for a ROW (BLM AZA-34666) grant on BLM-managed public lands to construct, operate, maintain, and decommission the Project and associated ancillary facilities. The QSEP site is east of State Route (SR) 95, approximately 10 miles north of Quartzsite, Arizona. In connection with the Project, Western applied for a ROW grant to construct and operate facilities to interconnect the Project to Western's transmission system, including a switchyard and redundant communications infrastructure between the switchyard and the Bouse Substation comprised of either a fiber optic line or microwave telecommunications pathway on public land.

Major project components include:

- 653-foot-tall central receiver and solar collecting tower (includes a 15-foot-tall maintenance crane on top of the tower)
- Up to 17,500 heliostats (mirrors)
- A conventional steam turbine generator
- Insulated storage tanks for hot and cold liquid (molten) salt
- Ancillary tanks (service/fire water, demineralized water, etc.)
- Evaporation ponds (size would vary, dependent upon the cooling mechanism selected)
- Temporary construction laydown area

- Ancillary buildings (e.g., maintenance, administration, warehouse)
- Water treatment building
- Operations and control building
- Switchyard (at the interconnection point with Western's transmission line that will be owned and operated by Western)
- Improvements to Western's communication to provide redundant communications from the Project-related switchyard to the Bouse Substation via either a fiber optic communication line on the Bouse-Kofa 161kV transmission line or a microwave dish in the switchyard to Western's Metal Mountain communication facility.
- Transformers and 161/230-kV electrical substation (onsite)
- A 1.5-mile-long 161/230-kV overhead transmission line
- A 1.5-mile-long overhead line to provide auxiliary power to the Project area
- An access road from SR 95 to the solar field
- Water wells and a water supply pipeline (onsite)
- A dry-cooling system
- A thermal storage system, which permits the QSEP to generate dispatchable power during periods of higher demand when the sun is not shining
- Three 4-acre evaporation ponds

Alternatives that were considered in the EIS were: No Action; Proposed Action – Dry-Cooled; and, Alternative 1 – Hybrid-Cooled. The Proposed Action – Dry-Cooled is the BLM's preferred alternative because it would cause the least impact to the biological and physical environment of the action alternatives considered in detail. The EIS considered other alternatives, including a solar facility with reduced power output and/or configuration, alternate sites, and, use of an alternative power generating technology, and eliminated these alternatives from further analysis.

In making the decisions described in this ROD, the BLM and DOI considered the following:

- The energy produced by the QSEP could displace up to 140,000 tons of carbon dioxide equivalent emissions per year (MTCO<sub>2e</sub>/year) that may otherwise be emitted by power plants currently generating electricity in the region.
- The United States Fish and Wildlife Service (USFWS) determined that there are no threatened or endangered species or their habitat in the Project area, based on biologic surveys and the consultation process.
- The Project includes design features, stipulations, and mitigation measures adopted by this ROD to avoid or mitigate direct physical impacts to identified archaeological and cultural resources and to ensure compliance with all applicable laws, regulations, standards, guidelines.
- Feedback from the public, interest groups, and local, state, and Federal agencies about the Proposed Action and alternatives for the QSEP helped to shape the scope and alternatives of this project as explained in Section 2 below.

After a careful review of the totality of this information and after considering the comments and concerns identified by members of the public and in consultation with tribal leaders, the DOI and

the BLM find that the issuance of ROW grants to QSE and Western, and the approval of the associated Yuma RMP amendments is consistent with the requirements and obligations under the Federal Land Policy and Management Act (FLPMA) in that the resource considerations identified above and in the Final EIS reflect the BLM's multiple use mandate, and meet the BLM's purpose and need for the proposed action as outlined in the Final EIS, page 1. This ROD applies only to the BLM administered lands, and to the BLM's decisions on the QSEP and ancillary facilities. Other agencies are responsible for issuing their own permits and applicable authorizations for the project. Western will be issuing a separate ROD for the interconnection to their Bouse-Kofa 161kV transmission line. Other permits and applicable authorizations are listed in Section 1.6 of the draft EIS.

## **1. ADOPTION OF THE EIS AND DECISIONS**

Western published the Notice of Intent (NOI) to prepare an EIS on January 14, 2009, with BLM identified as a cooperating agency along with United States Army Corps of Engineers (USACE), the Yuma Proving Ground (US Army), the Arizona Game and Fish Department (AZGFD), and the Arizona Department of Environmental Quality (ADEQ).

Since the publication of the NOI, BLM has been engaged in all aspects of the preparation of the EIS, including public scoping and tribal consultation. In early 2011, BLM determined that the project was not in conformance with existing VRM designations in the YFO RMP after completing a visual report and visual contrast rating analysis for the Project. Specifically, the Project did not meet the VRM Class III management objectives stated in the RMP and applicable to the Project site.

As a result, on March 30, 2011, the BLM published an NOI to analyze a proposed land use plan amendment in conjunction with the QSEP. The publication of that NOI in the *Federal Register* initiated a 30-day public scoping period on the plan amendment. In addition to participating actively in the EIS scoping process, the BLM has thoroughly reviewed both the Draft and Final EIS and determined that the EISs: (i) Meet the applicable BLM standards for analysis of the Project and proposed plan amendments, and (ii) are adequate for purposes of reaching an informed decision on the ROW application. Therefore, in accordance with 40 CFR 1506.3, BLM adopts the EIS and determines that there is no need to recirculate the adopted EIS as all of the BLM comments and suggestions have been satisfied.

It should be noted that the Draft EIS is referenced through this ROD because the BLM and Western determined pursuant to 40 CFR 1503.4(c) that it was appropriate to utilize an errata/abbreviated Final EIS, as opposed to preparing a separate final EIS due to the nature of the comments received on the Draft EIS. As a result, the substantive discussion in the Draft EIS constitutes the Agency's final analysis as well, except as otherwise noted below.

## 1.1 Decisions

Both Western and the BLM are making separate, but related, decisions based on the EIS. Western will issue its own ROD to approve the Applicant's request to interconnect the QSEP to their transmission line system.

## 1.2 Decisions To Be Made

This ROD makes the following decisions:

- 1) First, it approves the issuance of a 30 year FLPMA Title V ROW grant to QSE to construct, operate, maintain, and decommission the QSEP, a 100 MW CSP thermal generating power plant using dry-cooling technology and a new 1.5-mile-long 161/230-kV generation interconnection tie line (gen-tie lines), and access road;
- 2) Second, it approves the issuance of a 30 year FLPMA Title V ROW grant to Western to construct, operate, maintain, and decommission: (i) The switchyard analyzed in the Final EIS on approximately 4.6 acres of public lands necessary to connect the QSEP to Western's Bouse-Kofa 161-kV transmission line, and (ii) improvements to Western's communication system (either fiber optic and microwave) to provide redundant communication paths from the switchyard to the Bouse Substation that are necessary for QSEP's interconnection request; and
- 3) Third, it amends the YFO RMP to designate 6,800 acres of BLM managed lands in and around the Project site as Visual Resource Management Class IV.

## 1.3 Background

The QSE, a wholly owned subsidiary of SolarReserve, LLC, plans to construct, operate, maintain, and decommission the QSEP. With its 100-MW capacity, the QSEP's CSP solar thermal plant will be capable of producing 450 gigawatt-hours of energy annually. The company's proprietary CSP technology uses a field of heliostats (elevated mirrors guided by a tracking system) to focus sunlight onto a 653 foot tall receiver in the center of the solar field. Each heliostat tracks the sun throughout the day and reflects the solar energy to the central receiver, which captures the thermal energy in liquid salt, which is then used to produce steam that powers a conventional electricity-generating turbine. The project features thermal energy storage that allows solar energy to be captured throughout the day and retained in a liquid salt heat transfer fluid. The stored heat can be used to power the turbine when the sun is not shining. An air-cooled condenser will be used to cool the steam used to power the turbine. The air-cooling technology minimizes the amount of water needed to operate the Project. The QSEP is also outlined in detail in the plan of development (POD) (Attachment A).

## 1.4 BLM's Purpose and Need

As set forth in full in Chapter 1, Section 1.4.2 of the draft EIS, the BLM's purpose and need for this action is to respond to QSE's application under Title V of FLPMA (43 USC § 1761) for a

ROW grant to construct, operate, maintain, and decommission a solar thermal generating power plant capable of providing dispatchable generation and associated ancillary facilities in compliance with FLPMA, BLM ROW regulations, and other applicable Federal laws, which action also includes the consideration of a concurrent amendment to the YFO RMP.

## **2. Alternatives**

Sections 2.1 and 2.2 below summarize the alternatives that were considered and those that were eliminated from detailed analysis. More detailed information on the alternatives can be found in Sections 2.2-2.4 of the draft EIS.

### **2.1 Overview of Alternatives Considered in the EIS**

#### **2.1.1 No Action Alternative**

Under the No Action Alternative, QSE's ROW application to develop the QSEP would not be approved and no BLM ROW would be granted, Western's ROW application would not be approved, and there would be no associated amendment to the YFO RMP. Since the QSEP would not be developed, existing land uses within the project area would continue. The No Action Alternative forms the baseline against which the potential impacts of the Proposed Action and alternatives are compared, and satisfies CEQA's NEPA regulations which require the inclusion of "the alternative of no action" (40 CFR §1502.14[d]). The No Action Alternative includes current actions and activities in the project area. No additional actions are assumed to occur in the absence of approval of any of the action alternatives.

Under the No Action Alternative, limited dispersed recreation across the project area would continue. The project area is used infrequently by hikers, mountain bikers, backcountry drivers, hunters, and birders, rock hounds, and off-highway vehicle users. Selection of the No Action Alternative would not preclude the future approval of other ROWs for energy development or other projects.

#### **2.1.2 Proposed Action – Dry-Cooled**

The QSE proposed a CSP project capable of producing approximately 450 gigawatt-hours of renewable energy annually, with a nominal net generating capacity of 100 MW. As explained above, QSE's proprietary CSP solar thermal technology uses a field of heliostats to focus sunlight onto a central receiver erected in the center of the solar field and includes thermal energy storage that allows solar energy to be captured to be utilized for energy generation when the sun is not shining. To generate power, a heat transfer fluid is heated as it passes through the receiver, and then circulated through a series of heat exchangers to generate high-pressure, superheated steam. The steam is then used to power a conventional Rankine cycle steam turbine/generator, which produces electricity. The exhaust steam from the turbine is condensed and returned via feedwater pumps to the heat exchangers, where the high pressure, superheated steam is generated again.

Both the central receiver and type of heat transfer fluid used in the cycle distinguish QSE's technology from other CSP technologies. The heat-transfer fluid is a mixture of 60 percent sodium nitrate and 40 percent potassium nitrate salts, with a melting temperature of approximately 460°F. Approximately 35,000 tons are melted to a liquid form (4.5 million gallons) and circulated through the tubes in the central receiver, collecting the energy gathered from the sun. The heated salt is then routed to an insulated storage tank (hot thermal storage tank), where the energy can be stored for extended periods of time with minimal energy loss. No addition of salt is expected for the system over its operating lifetime. To generate electricity, the hot salt is routed to the steam generation system (or heat exchanger) and used to produce steam. After exiting the steam generator, the salt is sent to a "cold" salt thermal storage tank, and the cycle is repeated.

The thermal storage capability allows the excess heat to be stored until needed for power generation, effectively decoupling energy collection from the energy production process. Thermal storage also can extend the generating period of a power plant to provide a steam heating source after the sun sets, allowing the facility to more closely satisfy the demand for electricity, which typically peaks in the late afternoon and evening hours.

Major project components:

- 653 foot tall central receiver and solar collecting tower (includes a 15 foot tall maintenance crane on top of the tower)
- Up to 17,500 heliostats (mirrors)
- A conventional steam turbine generator
- Insulated storage tanks for hot and cold liquid (molten) salt
- Ancillary tanks (service/fire water, demineralized water, etc.)
- Evaporation ponds (size would vary, dependent upon the cooling mechanism selected)
- Temporary construction laydown area
- Ancillary buildings (e.g., maintenance, administration, warehouse)
- Water treatment building
- Operations and control building
- Switchyard (at the interconnection point with Western's transmission line that will be owned and operated by Western)
- Improvements to Western's communication to provide redundant communications from the Project-related switchyard to the Bouse Substation via either a fiber optic communication line on the Bouse-Kofa 161kV transmission line or a microwave dish in the switchyard to Western's Metal Mountain communication facility.
- Transformers and 161/230-kV electrical substation (onsite)
- A 1.5-mile-long 161/230-kV overhead transmission line
- A 1.5-mile-long overhead line to provide auxiliary power to the Project area
- An access road from SR 95 to the solar field
- Water wells and a water supply pipeline (onsite)
- A dry-cooling system will be employed at the site. It will require about 200 acre-feet of water per year. The cooling system consists of an air-cooled condenser, condensate tank, and condensate pumps. The dry-cooled system receives exhaust steam from the steam turbine, where it is piped through a transfer duct to a finned-tube air-cooled condenser.

The air-cooled condenser blows ambient air across a heat transfer surface area, which cools and condenses steam. Dry cooling does not eliminate water consumption but significantly reduces it. Dry-cooling technology is more expensive to build and operate compared with wet-cooling. However, the significantly reduced water consumption makes it the applicant's preferred cooling technology.

- The thermal storage system contains two storage tanks—one “cold” tank for liquid salt at approximately 550°F and one “hot” tank storing liquid salt at approximately 1,050°F. As the sun rises, the cold heat-transfer fluid will be pumped from the cold liquid salt tank through the tubes on the receiver. After absorbing energy from the concentrated sunlight, the temperature of the heat transfer fluid will be increased to the design outlet temperature of 1,050°F. Part of the fluid is then pumped to a hot liquid salt tank for storage and the other part to a steam generating system that produces superheated steam for use in the conventional Rankine cycle turbine/generator system. After exiting the steam generator, the heat transfer fluid would be returned to the cold tank, where it is stored and eventually reheated in the receiver.
- Three four acre evaporation ponds are required for disposal of the plant's industrial wastewater. Industrial wastewater is generated from the water treatment operation (from the reverse osmosis system pre-treatment of groundwater) and the steam cycle blowdown.

### **2.1.3 Alternative 1: Hybrid-Cooled**

Alternative 1 would incorporate similar construction, operational, decommissioning, and reclamation components as the Proposed Action, but would use an alternative cooling technology. A hybrid cooling system typically requires two cooling towers, one dry cooling tower, more commonly referred to as an air cooled condenser and one conventional wet cooling tower designed to operate in parallel as one system. Operational water requirements for Alternative 1 would be up to 600 acre feet per year, or three times that required for the dry cooling alternative. The hybrid cooled system also would require an 18 acre evaporation pond for processing wastewater.

## **2.2 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS**

Several alternatives were considered during the EIS process but eliminated from detailed analysis. The specific alternatives that were eliminated from detailed analysis are discussed below, along with the rationale for their elimination. Section 2.3 of the Draft EIS provides additional details about these alternatives and why there were not carried forward.

### **2.2.1 Reduced MW and/or Footprint Configuration**

Unlike other solar generation technologies such as solar trough or solar photovoltaic (PV), QSE's “power tower” solar thermal technology does not vary in physical size as a function of power output. All solar thermal projects being developed by QSE require a similar number of heliostat mirrors as well as tower and receiver dimensions. The most significant plant variances between projects are generator size, thermal storage capacity, and cooling technology. All of

these variances occur within the power block and do not affect the size of the Project's footprint. Stated differently, a smaller output power plant will not be physically smaller than a larger output power plant.

### 2.2.2 Other Alternative Sites

**Brownfield Sites** – During the public scoping period, several commenters requested that the Applicant consider development on a brownfield site. Brownfield sites have been previously used as a commercial or industrial site and are available for reuse. The land may be contaminated by low concentrations of hazardous waste or pollution, and has the potential to be reused once it is cleaned up. Redevelopment of such a facility may be complicated by real or perceived environmental contamination and often needs to be restored before use, which can increase the costs for a developer. The ADEQ website does not identify any brownfield sites in the vicinity of the Project site, nor were any brownfield sites or sites of marginal quality identified within the BLM's YFO. Therefore, alternative sites that would utilize brownfield sites or previously disturbed lands of marginal quality were eliminated from further consideration.

**Private Lands** – Commenters suggested using private property instead of BLM administered land. Private property in the QSEP area and in the vicinity of the Bouse-Kofa transmission line is limited. Additionally, none of the properties would meet the acreage requirement of the QSEP. In addition, alternative sites on private land would not meet the purpose and need of the BLM or increase renewable energy resources on public land. Therefore, alternative sites on private land were eliminated from further consideration.

**BLM Disposal Land** – The Yuma RMP states that all public land would be retained in Federal ownership, unless determined that disposal of a particular parcel(s) would serve the public interest. The YFO RMP currently has designated 11,900 acres of public land within the planning area as being available for withdrawal, disposal by sale, or exchange. The BLM has approximately 6,000 acres of disposal land east, north, and west of the Town of Quartzsite. The Town has annexed those lands, zoning them as Rural Residential. More importantly, the land currently designated for disposal in the YFO RMP does not meet QSE's requirement of a 2-by-2-mile area or its desire to locate the project on State/Federal land away from population centers. Since none of the lands designated for disposal within the BLM YFO were of sufficient size to meet QSE's minimum acreage requirements, alternative sites using BLM disposal land were eliminated from further consideration.

**Wet-Cooling Alternative** – The BLM considered a wet-cooled CSP facility. However, after evaluation of the unique environmental and ecological considerations—including water conservation—and State and Federal Government renewable energy initiatives and policies, BLM determined that the wet-cooling alternative is not a reasonable alternative for the arid desert landscape where the Project is located. While wet cooling is typically the lowest cost system and provides the highest steam turbine efficiency, the evaporative cooling process results in higher water use than other cooling methods. Operational water requirements under the wet cooled alternative would be 1,200 to 1,500 acre feet of water per year; compared with 200 acre feet a year for the Selected Alternative. Therefore, the wet cooled option was eliminated from further consideration.

### 2.2.3 Alternative Power Generating Technologies

Several commenters requested QSE consider other power generating technologies such as distributed generation, PV, or increased energy efficiency. Such alternative technologies do not respond to BLM's purpose and need to consider an application for the authorized use of public lands for a specific renewable energy technology, such as the one submitted by QSE and therefore were not carried forward as explained below.

**PV Power Generation (Utility Scale)** – Photovoltaic technologies use semiconductor devices (frequently called cells) to directly convert sunlight into electrical energy. When light strikes the solar cell, a portion of it is absorbed by the cell material. The energy of the absorbed light (photons) is transferred to the semiconductor. This energy releases electrons, allowing them to flow freely. This flow of electrons creates an electrical current. Although SolarReserve (QSE's parent company) develops up to 20 MW projects using PV technology in other locations with smaller acreage and lower distribution level voltages, the characteristics of the Project site (i.e., its size and proximity to high-voltage distribution) make it ideally suited to utilize QSE's proprietary CSP thermal storage technology which allows the flexible and non-intermittent production of renewable power during peak and/or off-peak demand periods. A PV system would not meet the Applicant's objective for the Project because those systems cannot currently provide energy storage for reliable dispatchable generation. For that reason, a PV alternative does not meet the BLM's purpose and need to respond to an application for a dispatchable renewable energy generation facility.

**Residential (Rooftop) Photovoltaic Energy Production, Distributed Generation, and Energy Conservation** – Several commenters suggested consideration of other power generating technologies, such as distributed generation, rooftop PV power generation, or increased energy efficiency, as opposed to, or in addition to, the development of centralized, utility-scale solar energy facilities. Distributed generation refers to the installation of small-scale solar energy facilities at or near the point of consumption (e.g., use of solar PV panels on a business or home to generate electricity for onsite consumption). Distributed generation systems typically generate less than 10,000 kilowatts. Other terms for distributed generation include on-site generation, dispersed generation, and distributed energy. The QSE does not manufacture, install, or distributed generation systems.

As explained in the EIS, neither Western nor the BLM have decisionmaking authority regarding the use of distributed generation, rooftop PV, or energy conservation in homes or commercial buildings. Residential rooftop or distributed energy production are at the discretion of the private homeowner/business owner and other entities (e.g., local, county, and state governments).

Additionally, the applicable Federal orders and mandates providing the drivers for specific actions being evaluated in EIS compel the BLM to evaluate utility-scale solar energy development on public lands. Specifically, BLM's purpose and need for agency action for this project is focused on the siting and management of utility-scale solar energy development on public lands. Alternatives incorporating distributed generation with utility-scale generation or

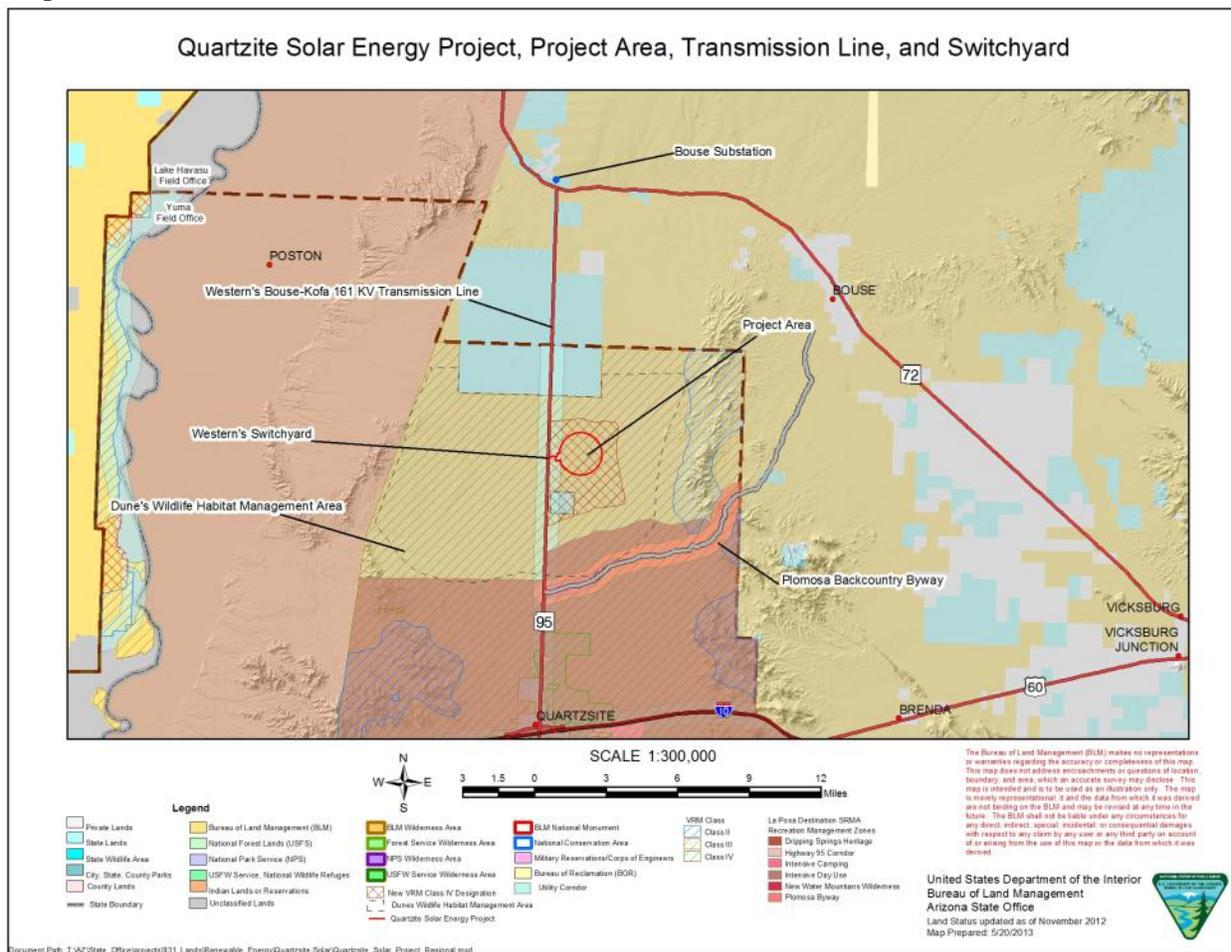
looking exclusively at distributed generation, do not respond to the BLM's purpose and need for agency action in this EIS.

### **2.3 ALTERNATIVES FOR THE PROPOSED PLAN AMENDMENT**

In connection with the Applicant's Proposed Project, the BLM also considered a concurrent amendment to the YFO RMP. The proposed plan amendment changes the VRM designation for the public lands in and around the Project area. As explained below, the change in VRM designation is no broader than is required to permit the Project to be built. In 2010, the YFO RMP designated the area in and around the Project site as a VRM Class III. However, as explained below, after an initial visual resource analysis it was determined that the Project was not consistent with the existing VRM Class III designation, and therefore the BLM determined that a plan amendment to change the VRM designation around the Project site from VRM Class III to VRM Class IV would be required in order for the BLM to approve QSE's and Western's ROW grant requests.

Of the 1,318,000 acres managed by the YFO, the YFO RMP designates 167,000 acres as VRM Class I, 618,600 acres as VRM Class II, 512,400 acres as VRM Class III and 19,200 acres as VRM Class IV lands. The majority of Class IV land is located south of Quartzsite and Interstate 10 (I-10), along US 95, in an area of intensive camping and recreational use along with several designated long-term visitor use areas. Other large VRM Class IV lands are north and east of Quartzsite. The new VRM Class IV designation is adjacent to and surrounded by VRM Class III lands. Map 2.3.1 depicts the Project along with the VRM changes relative to the surrounding existing conditions. The nearest VRM Class II lands are several miles from the new designation. Construction and operation of the project in the proposed project area would result in greater visual and noise impacts to recreation users in the intensive camping and recreation use areas already in Class IV, and to Quartzsite residents. Therefore, through this ROD, the BLM amends YFO RMP to change the designation of the 6,800 acres in and around the Project site from VRM Class III to VRM Class IV. The project's 1,675 acre footprint is within the 6,800 acres subject to change in VRM designation.

Map 2.3.1



### 2.3.1 RMP Alternative 1: Plan Amendment with Project Approval

The BLM's RMP Alternative 1 consists of changing lands that are currently managed as VRM Class III to VRM Class IV, approximately 2 miles north of Plomosa Back Country Byway, to the east of SR 95 in proximity to the proposed project site. Approximately 6,800 acres of VRM Class III are designated as VRM Class IV as a result of this change, leaving 505,600 acres of VRM Class III designated land within the entire YFO.

### 2.3.2 RMP Alternative 2: Plan Amendment with No Project Approval

Under RMP Alternative 2 (Plan Amendment with No Project Approval), no impacts associated with the project would occur, but the project area would be available, as a result of the plan amendment, for the development of a project similar to the QSEP in the future. If another solar energy development project like the QSEP were developed, similar impacts to visual resources could occur. However, no such future solar project (or other project that would require a VRM Class IV designation) is foreseeable at this time.

### **2.3.3 RMP Alternative 3: No Action Alternative**

The No Action Alternative for the proposed plan amendment is not approving the amendment to the land use plan. If the land use plan amendment is not approved the ROW grant for the project cannot be approved.

### **2.3.4 Other Plan Amendment Alternatives Considered but Eliminated from Further Analysis**

Other alternatives to the BLM proposed plan amendment were also analyzed, taking into consideration the project description provided by QSE and the issues and concerns derived from the public and tribal comments received. Plan amendment alternatives that failed to meet the BLM's purpose and need were dismissed from further analysis. These additional plan amendment alternatives are discussed in Appendix A of the EIS.

## **3. Decision Rationale**

The BLM has identified the Applicant's Proposed Action – Dry Cooling and the Proposed Plan Amendment as the Selected Alternatives. This decision responds to QSE's application to build a CSP power project on BLM managed lands. It also addresses directives and policies to make public land available for renewable energy generating projects. Two considerations are worth noting with respect to the BLM's selection of the Proposed Action.

First, Dry Cooling is responsive to the environmental concerns of excessive water use in the desert. The selected alternative will require approximately 200 acre feet of water per year. The primary needs for water are:

- 100 acre feet per year for steam cycle makeup water;
- 70 acre feet per year for mirror cleaning; and
- 30 acre feet per year for auxiliary cooling.

The selected alternative would also require three 4-acre evaporation ponds to dispose of the plant's industrial wastewater. This level of water use is in contrast to the 600 acre-feet per year required for the hybrid-cooled alternative.

Second, the Selected Alternative also offers the opportunity to store energy, using a liquid salt heat transfer fluid. The stored heat can be used to generate steam to power a generator during periods when the sun is not shining, which effectively extends the generating hours into the evening, when the sun is down or not at an optimum angle.

With respect to the Proposed YFO RMP amendment, as explained in Appendix A to the Draft EIS, the Project area is undeveloped, but is partially disturbed by off-highway vehicle use, a mineral material site, copper mine, and a dump within 5 miles of the project site that is not on BLM land. The scenic quality has been characterized by the BLM as primarily "flat" and "coarse." The closest residence is 9 miles away. The closest site valued for tribal viewing is 5 miles away. The area also has already been modified by electrical transmission lines and

transportation routes. The higher classified landscapes nearby are the Plomosa Mountains to the east and the Dome Rock Mountains to the southwest. As distance from the Project increases, the visual perception of it decreases because the heliostats are of a relatively low profile, although the solar collecting tower (653 feet) is still evident. The Proposed RMP amendment changes 6,800 acres in an around the Project site from VRM Class III to VRM Class IV based on an initial assessment of the visual resource impacts associated with the Project. The Proposed Amendment was tailored to maintain the most acreage of VRM Class III designated lands between the Plomosa Mountains (VRM Class II) and the QSEP.

The visual impacts of the construction and operation of the QSEP are addressed in Chapters 3-16 and 4-16 of the EIS, which concluded generally that the Project would result in a moderate to strong level of impacts to foreground viewers. These impacts would reduce as distance from the Project increases or topography provides screening. These impacts and associated changes to landscape character are consistent with Class IV objectives and therefore the project will be consistent with the requirements of the YFO RMP as amended by this ROD.

#### **4. Requirements of the ROW Grant**

The decision to issue a ROW grant for the QSEP includes a requirement that compliance with the mitigation measures, applicant-committed environmental protection measures, and best management practices contained in the POD (see Attachment A) will be a requirement of the Project's ROW grant. The project ROW includes temporary use areas, including staging areas, pulling stations, and temporary construction widths, as well as use of existing access roads for temporary access to the construction zone on Federal lands. All temporary facilities authorized by this decision are depicted in the POD.

Actual on-site construction or other surface disturbing activities will be authorized by the issuance of a single or phased series of written notices to proceed (NTPs) by the BLM Authorized Officer. These NTPs will specify authorized activities, location of the authorized activities, and the timing of the authorized activities. Should noncompliance issues, environmental issues, or other problems be encountered during authorized activities, the BLM Authorized Officer may, in accordance with applicable regulations, amend, suspend, or terminate any NTP or the ROW grant. Prior to issuance of an NTP for the Project, the Applicant shall prepare and obtain BLM's approval of an Environmental and Construction Compliance Monitoring Plan (ECCMP). Upon BLM's approval, compliance with the ECCMP will become a condition of the Project's ROW grant.

In accordance with BLM IM No. 2011-003 (Solar Energy Development Policy), the BLM will require a performance and reclamation bond in connection with the Project's ROW grant. The BLM has identified an initial bond estimate of \$10,000,000 for the QSEP to ensure compliance with the terms and conditions of the ROW authorization. The performance and reclamation bond is a single instrument to cover all potential liabilities. Western, being a Federal agency, is not required to submit a performance bond. The stipulations listed in the IM include, but are not limited to, the following:

- The BLM Authorized Officer will review all bonds on an annual basis to ensure adequacy of the bond amount. The BLM requires the holder to post the portion of the bond associated with the activities to be approved by the NTP prior to the issuance of that Notice. The performance and reclamation bond consists of three components for purposes of determining its amount. The first component addresses environmental liabilities including hazardous materials liabilities. The second component addresses the decommissioning, removal, and proper disposal, as appropriate, of improvements and facilities. The third component addresses reclamation, revegetation, restoration, and soil stabilization. This component is determined based on the amount of vegetation retained on-site and the potential for flood events and downstream sedimentation from the site that may result in off-site impacts, including Clean Water Act violations or other violations of law. The holder of the ROW grant could reduce the bond amount for this component by limiting the amount of vegetation removal as part of the project design and limiting the amount of grading required for project construction.
- The BLM requires that ROW grantees submit a decommissioning and site reclamation plan (DSRP) that defines the reclamation, revegetation, restoration, and soil stabilization requirements for the project area as a component of their POD (43 CFR § 2804.25(b)). The decommissioning and site reclamation plan, along with the POD, is used to estimate the cost of decommissioning the project and reclaiming the site, which is used to estimate the bond amount.

## **5. Management Considerations in Choosing the Selected Alternative**

### **5.1 Relationships to Other Plans, Policies, and Programs**

The QSE must comply with all applicable Federal and State laws and regulations. A representative list of those is in Table 1-1 of the EIS. The QSE must also obtain required Federal, State, county and local permits and approvals. Required or potentially required approvals are listed in Table 1-2 of the EIS.

#### **5.1.1 BLM Land-use Plan**

Construction of the Selected Alternative will be in a planning area managed according to the YFO RMP. The RMP allows for multiple uses of public lands and does not prohibit the development of alternative energy sources on the public lands that make up the Project site. As noted, this ROD amends the RMP to change the designation of the area in and around the Project site from VRM Class III to VRM Class IV. Approval of the amendment would make the Project in compliance with the YFO RMP.

#### **5.1.2 County and Local Plans**

According to the *La Paz County Comprehensive Plan* (2005), maintaining open space and encouraging land use planning is the ultimate objective of the plan. Therefore, the proposed future land use pattern focuses new development around currently incorporated and

unincorporated communities, including Quartzsite. Quartzsite is 10 miles from the project site. The plan identifies Quartzsite as one of five “Growth Areas” anticipated for future development. The La Paz County Future Land Use Map has the project area designated as Public Land (La Paz County 2008). Quartzsite’s General Plan Land Use Element characterizes its land closest to the project site (about 5 miles away) as Heavy Industrial. Quartzsite’s General Plan also says that industrial developments should be encouraged along major transportation routes.

### **5.1.3 State of Arizona**

The Arizona Corporation Commission establishes jurisdiction for transmission lines (gen-tie) with a voltage higher than 115 kV. The process is formally outlined in A.R.S. §§ 40-360 through 40-360.13 and A.A.C. R14-3-201–220. The process for permitting has two phases: (1) The receipt of a Certificate of Environmental Compatibility (CEC) (from the Power Plant and Transmission Line Siting Committee (committee), and (2) an order approving the CEC from the Arizona Corporation Commission. The Arizona Corporation Commission’s Renewable Energy Standard and Tariff Rules (A.A.C. R14-2-1801–1815), along with other renewable energy mandates, call on the state’s electric utilities to produce 15 percent of their electricity from renewable sources by 2025. The Selected Alternative will assist the state’s electric utilities in meeting this goal and will therefore be consistent with State of Arizona objectives for renewable energy development.

### **5.1.4 Endangered Species Act (ESA)**

The US Fish and Wildlife Service (USFWS) has jurisdiction over threatened and endangered species listed under the ESA (16 USC Section 1531 *et seq.*). Consultation with the USFWS under Section 7 of the ESA is required if any Federal action affects a federally listed species or designated critical habitat. The USFWS advised in a letter to the BLM, dated February 17, 2011, that no federally listed species under the ESA are likely present in the Project area nor is any critical habitat present. Biological surveys were conducted in the spring and fall 2009 and spring 2010. No federally listed threatened, endangered, or candidate species were observed during those surveys nor was any designated critical habitat identified.

### **5.1.5 Migratory Bird Treaty Act of 1918 (MBTA)**

The MBTA provides protection for 836 bird species. The Act makes it unlawful to pursue, hunt, take, capture, kill, or sell most birds listed under the act. While peregrine falcons and burrowing owls could use the project area, neither has been observed in site visits or during biological surveys. Generally, poor forage availability and habitat tend to discourage birds from using the Project site, thus reducing its risk to birds.

### **5.1.6 Bald and Golden Eagle Protection Act (Eagle Act)**

The Eagle Act prohibits any form of possession or taking of Bald Eagles or Golden Eagles. Golden Eagles prefer wide open habitats for foraging. While the project area meets this criterion, there may not be a sufficient prey base in the area to make it attractive to foraging Golden Eagles. Based on field observations, mammals such as jackrabbits and cottontails are uncommon within the project area. Larger burrowing mammals such as kit fox and badger are

rare in the area as evidenced by a general lack of burrows of these species (EPG 2009). While Golden Eagles forage over large distances and could forage in the area from roosts at a considerable distance from the project area, given the limited occurrence of prey the potential for Golden Eagle use of the Project site is low.

The AZGFD and BLM have adopted a metric for identifying suitable nesting substrate. The metric is slopes with a 45-degree incline or greater within 10 miles of a project. Digital elevation data indicate that the nearest cliff ledges that could provide nesting habitat for Golden Eagles are approximately 5 miles to the east of the project area in the Plomosa Mountains. The Arizona Breeding Bird Atlas (Corman and Wise-Gervais 2005) shows no confirmed golden eagle breeding evidence for the entirety of La Paz County. Helicopter surveys conducted by the AZGFD in 2011 found no evidence of active golden eagle nesting sites within 10 miles of the project area. The lack of suitable nesting substrate near the Project site further reduces the potential for Golden Eagles using the Project area.

#### **5.1.7 U.S. Army Corps of Engineers (USACE) Section 404 Permit**

In accordance with the USACE Regulatory Guidance Letter Number 08-02, a preliminary jurisdictional delineation of washes that traverse the project area was conducted April 13-15, 2010. The purpose was to determine the presence, location, and magnitude of wetlands, water bodies, or washes that may be considered potential waters of the U.S.

The preliminary jurisdictional delineation said the surface hydraulic features in the Project area are poorly developed, and consist of very shallow, narrow, and commonly vegetated, braided drainages. Washes are typically narrow (averaging 1.96 feet in width) and show little evidence of active surface water flow. The average gradient across the project site is less than one percent and soils are primarily non-cohesive sands with a high infiltration capability. Due to these physical attributes, surface flow is likely limited to either brief periods of intense, localized summer rainfall that exceeds the soil percolation rate, or extended winter rainfall. The USACE responded that there may be waters of the United States present on the Project site; although the analysis prepared in connection with the project indicate that such waters, if present, are less than the minimum acreage threshold for a Nationwide 404 permit. If determined necessary by the USACE, the Proponent is required to secure all applicable permits prior to receiving a NTP.

#### **5.1.8 Section 106 of the National Historic Preservation Act (NHPA)**

Pursuant to Section 106 of the NHPA and its implementing regulations, Federal agencies are required to engage in consultation with the Arizona State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (ACHP),<sup>1</sup> interested tribal members, other consulting parties, and federally recognized Tribes about undertakings that have the potential to adversely affect historic properties. Section 106 of the NHPA requires Federal agencies to take into account the potential effects of a proposed undertaking on historic properties eligible for or listed in the National Register of Historic Place (NRHP). Federal agencies identify potential effects to historic properties and seek to resolve adverse effects by avoidance, mitigation, or minimization. Resolution of adverse effects of a Federal agency's action, to the extent required,

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<sup>1</sup> The ACHP was invited to participate in the 106 Process, but declined in a letter dated April 1, 2010

is documented through a memorandum of agreement (MOA) or a programmatic agreement (PA); both are binding commitments attached to the final agency decision. Per the Memorandum of Understanding between Western and the BLM, Western was designated as the lead agency for compliance with Section 106 of the NHPA; however, the BLM reviewed the archeological and cultural resource reports and determinations made in connection with the Project.

There are four cultural properties within the area of potential effect (APE) of the QSEP. Two sites were determined to be not eligible for the NRHP. The portion of a third site within the project area does not contribute to that site's eligibility for inclusion in the NRHP, so it was determined that the project will result in no effects to that property. Finally, a fourth cultural property is an archaeological site within the APE of the project that was recommended during recordation as being eligible for the NRHP. As a result, the project had a potential to have an effect on that property, which effect was mitigated through avoidance of that site and construction monitoring. Based on those measures, Western and the BLM determined pursuant to 36 CFR 800.5(b) that the Project would not have an adverse effect on historic properties. On December 9, 2010, the Arizona State Historic Preservation Officer (SHPO) concurred with that determination.

The steps in the NHPA Section 106 process are described in more detail in the Tribal Consultation Summary of the FEIS.

## **6. CONSISTENCY AND CONSULTATION REVIEW**

### **6.1 Cooperating Agencies**

Western was the lead agency in preparing the EIS. The BLM YFO is a cooperating agency with jurisdiction by law. In addition to the BLM, Western invited 13 Federal, State, and local entities to consider becoming cooperating agencies. The US Army Garrison – Yuma Proving Grounds, USACE, the Arizona Game and Fish Department, and the ADEQ are cooperating agencies. Yuma Proving Grounds consulted with QSE, Western, and the BLM regarding the potential effects of the project on military training activities. The USACE reviewed the Draft EIS and Proposed YFO RMP Amendment with an emphasis on potential impacts from construction and operation on jurisdictional waters of the U.S. The Arizona Game and Fish Department contributed special expertise and reviewed data and impact assessments relative to biological resources (wildlife, vegetation, and special status species). The ADEQ reviewed the Draft EIS and Proposed YFO RMP Amendment, with emphasis on air and water quality impacts, given their authority for specific permits related to these resources. The US Bureau of Reclamation and the Arizona Department of Water Resources formally declined the invitation to be cooperating agencies.

### **6.2 Native American Consultation**

Federal agencies are required to conduct government-to-government consultation with federally recognized and other Native American tribal groups in accordance with several authorities including, but not limited to, NEPA, the NHPA, the American Indian Religious Freedom Act, Executive Order 13175, and Executive Order 13007.

For purposes of the Project and based on the MOU between BLM and Western, Western was the lead agency for compliance with these requirements; however, the BLM participated in all tribal consultation meetings; reviewed all cultural reports, consultation materials, and related documentation prepared by Western; and coordinated with Western throughout the Section 106 processes to ensure that these efforts were consistent with the requirements of BLM Manual 8110, *Identifying and Evaluating Cultural Resources*; and BLM Manual 8120, *Tribal Consultation Under Cultural Resources*.

Western initiated tribal consultation in September 2009 through a letter to the following tribes: Ak-Chin Indian Community, Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, Fort Yuma-Quechan Tribe, Gila River Indian Community, Hopi Tribe, Hualapai Tribe, Pueblo of Zuni, Salt River Pima-Maricopa Indian Community, Tohono O'odham Nation, Twenty-Nine Palms Band of Mission Indians, Yavapai-Apache Nation, and Yavapai-Prescott Indian Tribe.

The following consultation meetings were held with tribes:

- On September 22, 2009: Members of the Cocopah, Hualapai, and Colorado River Indian Tribes attended a consultation meeting and site visit with representatives from Western and the BLM.
  - On October 28, 2009: A consultation meeting was held with the Fort Yuma-Quechan Tribe.<sup>2</sup>
  - On March 1, 2010: A consultation meeting was held with the Tohono O'odham Nation.
  - On August 13, 2010: Western and BLM held a tribal consultation meeting with members of the Chemehuevi, Fort Yuma-Quechan, Yavapai-Prescott, Fort Mojave, and Colorado River Indian tribes.
  - On September 17, 2010: The Four Southern Tribes, which comprises the Tohono O'odham Nation and the Ak-Chin, Gila River, and Salt River Pima-Maricopa Indian communities, were presented with information on the Project.
  - On October 19, 2010: Western and BLM met the Fort Yuma-Quechan Tribe staff and Cultural Committee.
  - September 20, 2011: The Yuma Field Manager and other BLM staff met with the Chairwoman, two Council members, and staff of the Cocopah Tribe to present information and discuss the project and proposed plan amendment.
  - December 9, 2011: The Yuma Assistant Field Manager, BLM staff, and Western project manager met with the President, Council members, Preservation Officer, and Cultural Committee members of the Quechan Tribe to present information and discuss the Quartzsite project and other projects.
  - December 13-14, 2011: Representatives and members of the Quechan and Colorado River tribes and La Cuna de Aztlan attended the public meetings on the Draft EIS, expressing objections to the project based on cultural landscape values.
  - February 2, 2012: The Western and BLM hosted a tribal consultation meeting in Quartzsite, followed by a tour of the proposed project area and a visit to the Fisherman Intaglio, a cultural site about 6 miles from the project area. The meeting included a
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presentation by La Cuna de Aztlan on culturally important topographic landmarks and intaglio sites in the areas surrounding the project site, and was attended by representatives of the Cocopah, Quechan, Colorado River Indian Tribes, Fort Mojave, and Yavapai Prescott tribes. The Yuma Field Manager attended the meeting. Tribal members expressed objections based on visual impacts and disruption of connections among spiritually important mountains, intaglios, and sites in the area surrounding the project.

- April 10, 2012: The Yuma Field Manager and staff met with the Cocopah Tribe, where the Quartzsite project was one of the issues discussed.
- April 13, 2012: The Yuma Field Manager and staff met with the Quechan Tribe, where the Quartzsite project was one of the issues discussed.
- August 16, 2012: The Colorado River District Manager, Yuma Field Manager, Western's acting regional director, and BLM and Western staff met and discussed the project with Fort Mojave Tribe tribal council and cultural society members in at tribal headquarters in Needles, CA. Tribal representatives expressed objections to the project's impacts on the traditional cultural landscape along the Colorado River.
- November 5, 2012: The BLM and Western arranged a meeting with the Colorado River Indian Tribes regarding the project.

Western's consultations with tribes identified seven locations of traditional importance outside the Project area, including places of religious significance near the Colorado River. Since these areas were outside of the Project area, that information warranted visual simulations to characterize the potential visual impacts of the Project on those resources, which impacts were addressed in sections 3-16 and 4-16 of the draft EIS. Western also shared the visual impacts analysis with the tribes.

In December 2009, Western distributed a draft PA to address potential adverse effects on properties listed in or eligible for the NRHP to the tribes, BLM, Arizona SHPO, and the Advisory Council on Historic Preservation. Western later withdrew the PA after determining it was not warranted because of refinements to the Project layout, the cultural resource inventory prepared for the Project, and an assessment that determined the preservation of cultural resources in connection with the Project would be less complex than estimated. Western then invited the tribes to participate as consulting parties in the development of a MOA. In March 2010, Western sent letters to the tribes to again solicit information regarding cultural resources that the tribes thought should be considered. The tribes also were invited to be cooperating agencies for the preparation of the EIS. No tribe accepted the invitation. In December 2010, the SHPO and the BLM concurred with Western's recommended determination of "no adverse effect," obviating the need for an MOA and concluding the NHPA Section 106 process.

In April 2011, after determining the need to amend the YFO RMP, the BLM formally notified the consulted Indian Tribes of the proposed plan amendment, with a request for comments. The Tohono O'odham, Fort Yuma-Quechan, Cocopah, and Yavapai Prescott tribes objected to amending the land use plan. The tribes expressed a general concern about protecting scenic qualities and visual landscapes.

Comment letters on the draft EIS and land use plan amendment, as well as subsequent discussions with tribal members at government-to-government consultation meetings and project

area tours, identified the La Posa Plain as an integral part of the traditional territories of the Mojave, Quechan, Cocopah, Maricopa, Yavapai, and Hualapai people. During the early stages of Western's government-to-government consultation with the tribes in 2010, the Tribes requested that certain locations of cultural importance within and outside the La Posa Plain, such as the Fisherman and Blythe intaglios and other important sites along the Colorado River, be evaluated with regard to potential visual impacts. Visual impacts from these locations, along with other areas of cultural concern, were addressed in sections 3-16 and 4-16 in the draft EIS.

The final EIS notes that tribes objected to the project's visual and ground-disturbing impacts on the larger landscape of interconnected places within their traditional territories in the lower Colorado River region. These places include mountains and other topographic features, intaglios, and trails, as well as other locations that continue to have profound cultural and spiritual values for tribal members. These concerns are described in comment letters from the Fort Yuma-Quechan Indian Tribe, Cocopah Indian Tribe, and Colorado River Indian Tribes, as well as in comments expressed in meetings with representatives of the Fort Mojave Indian Tribe.

Similarly, during a consultation meeting of Western, BLM, and Fort Mojave Tribal Council members on August 16, 2012, Fort Mojave representatives said that visual impacts, lack of access, disturbance of possible subsurface materials, including cremations, and destruction of the landscape resulting from the construction of the project would cause suffering and harm to the Mojave people. Tribal members said that the interruption of connections among the Colorado River, mountains, trails, intaglios and places of spiritual importance within the traditional landscape would disrupt the flow of spiritual energy that is important to individuals and the tribe as a whole. For these reasons, they object to the project, as well as to the cumulative effects of renewable energy projects, in the broader desert areas along the lower Colorado River. As a result, the Fort Mojave Indian Tribe representatives asserted that the impacts to tribal values cannot be mitigated or resolved.

In response to these concerns the agencies acknowledged that it can be difficult to attribute clear boundaries to landscape encompassing places that are interconnected through long-held beliefs and traditions, and requested additional information to understand the geographic boundaries and resources identified by the tribes. To date, the Tribes have not identified any specific locations of interest within the Project site, nor were any trails or Native American archaeological sites found within the area; except for 11 dispersed, isolated occurrences of stone and ceramic artifacts. To the extent resources were identified outside the Project site, and as explained above, visual resource impact analyses were prepared and shared with the Tribes documenting the impacts of the QSEP to those sites.

Similarly, Western and the BLM also received written comments from the Quechan Indian Tribe, Colorado River Indian Tribes, and the Cocopah Indian Tribe expressing concerns about subsurface archaeological materials being discovered during Project construction. In responses to these concerns and the more general concerns identified after consultation with the Tribes, Western and the BLM prepared a Native American Graves Protection and Repatriation Act Plan of Action and a Monitoring and Discovery Plan to address the tribal concerns about the possible existence of currently unknown subsurface resources on the Project site.

### **6.3 Governor’s Consistency Review**

FLPMA requires the Secretary of the Interior “to the extent consistent with the laws governing the administration of the public lands to coordinate the land use inventory, planning, and management activities of or for such lands with the land use planning and management programs of other Federal departments and agencies and of the States and local governments within which the lands are located... .” 43 USC §1712(c)(9). It further directs the Secretary to “assure that consideration is given to those State, local and tribal plans that are germane in the development of land use plans for public lands” and “assist in resolving, to the extent practical, inconsistencies between Federal and non-Federal Government plans.” Regulations implementing FLPMA, 43 CFR §1610.3-2(e), require a 60-day period for Governor’s consistency review of proposed RMP amendment, such as the one at issue here. The purpose of the review is to identify inconsistencies of the proposed plan amendment with State and local plans, programs, and policies. On December 26, 2012, the BLM initiated the Governor’s Consistency Review for the proposed YFO RMP Amendment in accordance 43 CFR 1610.3-2(e). The BLM did not receive a response to that request. As a result and in accordance with 43 CFR 1610.3-2(e), at the conclusion of the 60-day review period, the proposed plan amendment is presumed to be consistent with any applicable State or local plans, programs or policies.

## **7. ENVIRONMENTAL PROTECTION MEASURES; BEST MANAGEMENT PRACTICES; AND LAWS, ORDINANCES, REGULATIONS AND STANDARDS APPLICABLE TO THE SELECTED ALTERNATIVE**

### **7.1 Land-use Plan Best Management Practices and Stipulations**

The Selected Alternative incorporates applicable BMPs and management stipulations from Appendix B of the *Yuma Field Office Approved Resource Management Plan*, (BLM 2010). These stipulations are conditions of approval for this ROW authorization by BLM, and they are binding in the event that the facility should be transferred or operated by another entity.

### **7.2 Applicant-committed Environmental Protection Measures**

Applicant-committed environmental protection measures are actions, practices, or design features that are part of the Selected Alternative and will be implemented by QSE in connection with its development of the QSEP. These measures are designed to minimize adverse impacts of the QSEP to sensitive environmental resources, and include actions and design features related to hazardous materials management, human health and safety, biological and water resources, water/floodplain/drainage, visual resources, and air quality. These measures are set forth in the QSEP’s POD and compliance with them is made a requirement of the Project’s ROW grant. As a result, any future modification of those measures requires BLM approval and they are binding in the event that the facility should be transferred or operated by another entity.

### **7.3 Plan of Development**

A POD is required before the BLM decides to issue a ROW grant pursuant to BLM IM No. 2011-060 (Feb. 7, 2011) and 43 CFR § 2804.25(b). The BLM ROW policy requires that the installation of the QSEP facilities be consistent with the approved POD, and therefore compliance with the QSEP POD will be a condition of QSE's ROW grant here. If there were to be any unanticipated changes to the POD, the BLM would assess the potential effects of the post-final EIS alterations to the POD through a determination of NEPA adequacy to assess what additional analysis, if any, is required in connection with such changes. The QSE has prepared and submitted a POD to the BLM that addresses all aspects of project development, including but not limited to road construction and maintenance; vegetation removal; natural, cultural, and biological resources mitigation and monitoring; decommissioning; and site reclamation.

### **7.4 Applicable Laws, Ordinances, Regulations, and Standards**

The QSE must comply with all applicable laws, ordinances, regulations, and standards (LORS), and must obtain and meet the requirements of all needed permits.

## **8. MITIGATION MEASURES**

As required in the BLM *NEPA Handbook*, H-1790-1, and 40 CFR § 1505.2(c), all practicable mitigation measures to avoid or minimize environmental harm from the selected alternatives have been adopted according to Federal laws, rules, policies and regulations. The QSEP includes the following measures, terms, and conditions:

- Avoidance, minimization, and mitigation measures provided in the draft EIS Chapter 4 (Environmental Consequences) and Appendix E of the EIS – Mojave Fringe-toed Lizard Study Proposal.

### **8.1 Rationale for Mitigation Measures Not Adopted**

All mitigation measures considered in the draft and final EIS are adopted in this ROD. No mitigation measures were considered and not adopted.

## **9. MONITORING AND ENFORCEMENT**

A monitoring and enforcement program will be adopted and summarized where applicable for any mitigation (40 CFR § 1505.2(c)). Agencies may provide for monitoring to assure that their decisions are carried out. Mitigation and other conditions established in the final EIS and committed as part of the decision will be implemented by the BLM. The BLM will:

- include appropriate conditions in grants, permits, or other approvals;

- condition funding of actions on mitigation;
- upon request, inform cooperating or commenting agencies on the progress in carrying out mitigation measures that have been proposed and that were adopted by the agency making the decision; and
- upon request, make available to the public the results of relevant monitoring (40 CFR § 1505.3).

The BLM is also responsible for ensuring compliance with all adopted mitigation measures for the QSEP in the EIS. Compliance with those measures is a requirement of the Project's ROW grant, and those measures will be incorporated as part of the terms and conditions of the grant. Failure on the part of QSE, as the grant holder, to adhere to these terms and conditions could result in various administrative actions up to and including termination of the ROW grant and requirement to remove the facilities and rehabilitate disturbances.

As explained above, prior to the issuance of an NTP for the Project the Applicant has to provide an obtain BLM approval of an ECCMP for the Project. The ECCMP will establish the team and process with which the BLM will monitor compliance with the required mitigation measures, stipulations, and other conditions of approval, including establishing criteria for successful implementation as applicable. The plan will be implemented and revised by the BLM and the Applicant as appropriate to ensure the Project's compliance with all applicable requirements.

## **10. PUBLIC INVOLVEMENT**

The BLM has taken steps to inform the public, special interest groups, and affected agencies about the Selected Alternative for the QSEP. The BLM has solicited feedback from these interested parties to help shape the scope and alternatives of this project.

### **10.1 Scoping**

As part of the NEPA requirements, a NOI to prepare the EIS was published in the *Federal Register* on January 14, 2010. Publication of the NOI initiated a 30-day, formal public and agency scoping period, during which Western solicited comments regarding the project and its potential impacts. Scoping meetings were held in Yuma, Quartzsite, and Parker. On March 30, 2011, the BLM announced a NOI for proposed amendments to the YFO RMP. Another 30-day scoping period was initiated in response to that notice and public meetings were held in Yuma and Quartzsite. The comment periods and the public meetings were announced on the BLM website, media releases, and direct mailings to past project stakeholders, project area stakeholders, and special interest groups (environmental, elected officials, business interests, recreational, and tribal). A detailed description of the scoping process, planning issues derived from the comments, and analysis of the information received are contained in the BLM's August 2011 scoping report, which includes both scoping periods. The scoping report is available at the BLM Yuma Field Office or online at [www.blm.gov/az/st/en/prog/energy/solar/quartzsite\\_solar\\_energy.html](http://www.blm.gov/az/st/en/prog/energy/solar/quartzsite_solar_energy.html)

## 10.2 Draft EIS Availability and Comments Received

Notices of availability (NOA) for the draft EIS were published in the *Federal Register* by Western on November 8, 2011. Publication of the EPA NOA initiated a 90-day, formal, public and agency comment period, during which Western and the BLM solicited comments regarding the project, the alternatives analyzed, the proposed plan amendment and potential environmental impacts. Western and BLM held public meetings to discuss the draft EIS in Yuma, Arizona, on December 13, 2011, and Quartzsite, Arizona, on December 14, 2011. Western received 32 comments (letters, emails and faxes) on the draft EIS. The verbatim comments and Western's responses to them were presented in the final EIS.

## 11. FINAL EIS AVAILABILITY AND COMMENTS RECEIVED

An NOA for the final EIS was published in the *Federal Register* on December 21, 2012. Electronic and printed copies of the final EIS were distributed by mail to parties who had previously indicated that they wanted to receive one and were made available at libraries, BLM offices, and on the internet. Although the Final EIS was not subject to a public comment period, the Environmental Protection Agency (EPA), Defenders of Wildlife, the Wilderness Society, The Arizona Wilderness Coalition, Sierra Club – Grand Canyon Chapter, and the Sonoran Institute all submitted comments. While those comments were not submitted before the end of the comment period, Western and the BLM endeavored to respond to them to the extent practicable as outlined below. None of the comments necessitated a change in the EIS.

**Table 11.1.** Comment Letters on the Final EIS

Letter Number	Name/Organization (if applicable)	Date of Letter	Address
1	EPA, Region IX Enrique Manzanilla, Director Communities and Ecosystem Division	January 22, 2013	75 Hawthorne Street, San Francisco, CA 94105-3901
2	Defenders of Wildlife Matt Clark, Southwest Representative	January 22, 2013	110 S. Church Avenue, Suite 4292 Tucson, AZ 85701
3	The Wilderness Society, the Grand Canyon Chapter of the Sierra Club, Arizona Wilderness Coalition, Sonoran Institute	January 22, 2013	Alex Daue, Renewable Energy Associate The Wilderness Society – BLM Action Center 1660 Wynkoop St. Suite 850 Denver, CO 80202  Sandy Bahr, Chapter Director Sierra Club - Grand Canyon Chapter 202 E. McDowell Rd, Suite 277 Phoenix, AZ 85004  Ian Dowdy, Conservation Outreach Associate Arizona Wilderness Coalition PO Box 13524 Phoenix, AZ 85002  John Shepard, Senior Advisor Sonoran Institute 44 E. Broadway Blvd., Suite 350 Tucson, AZ 85701

Table 11.2. Responses to Comments on the Final EIS

<b>Comment No.</b>	<b>Letter No.</b>	<b>Comment</b>	<b>Response</b>
1	1	We remain concerned about the lack of specificity regarding mitigation measures and the lack of consideration of numerous reasonable foreseeable projects in the limited analysis of cumulative impacts. Our detailed comments on the DEIS provided a number of recommendations that, if implemented, could enhance the sustainability of the project and reduce its environmental impacts, including its contribution to cumulative impacts, e.g., by minimizing direct and indirect impacts to desert washes, and minimizing air emissions.	Chapters 3 and 4 of the draft EIS included a comprehensive discussion of the Project and its impacts, including sufficient detail regarding Project related mitigation measures for purposes of analysis. With respect to desert washes the siting of the project considered many variables, including avoiding washes as shallow as 1 foot. Similarly, the cumulative impacts analysis considered the number of applications in the area of potential affect and also considered the progress those applications were making as some application had not progress as they had been only submitted as placeholders.
1	2	The unavoidable loss of 51.5 acres of Mohave fringe-toed lizard suitable habitat requires appropriate compensatory mitigation, which is not achieved by the Study Proposal in and of itself. The BLM states that “there is no compensatory mitigation plan established for the Dune WHA to offset Project related impacts” (ibid). We believe that such a plan should be established. To offset the anticipated loss of 51.5 acres of habitat from the proposed project, we agree with The Wilderness Society et al.’s February 8, 2012 comments that project proponents should fund acquisition, conservation and/or restoration of suitable sand dunes habitat at a 4:1 ratio (206 acres).	The BLM does not have a compensatory plan in place for Mohave fringe-toed lizard because it is not a candidate species. The BLM only has a plan for the Sonoran desert tortoise which is a Federal candidate species for listing under the Endangered Species Act.
3	2	If, as BLM states, on-site mitigation options are not available, as per existing policy BLM is instructed to identify suitable off-site mitigation options when “it is expected that the proposed land use authorization as submitted would not be in compliance with law or regulations or consistent with land use plan decisions or other important resource objectives” (BLM IM 2008-204). Since failing to appropriately mitigate for impacts to the Mohave fringe-toed lizard would violate BLM’s obligation under Special Status species policy to manage for net conservation benefit, BLM has an	The YFO Record of Decision and Approved Resource Management Plan (Yuma RMP), January 2010 identified management actions for the Dunes Wildlife Habitat Management Area (Dunes WHA), page 2-69, states that: “Management Actions: WF-048: The principle of managing this WHA will be that the amount of human disruption should decrease in proportion to the significance of the sand dune features, with more intensive use directed to sand dune areas of lesser significance or

		<p>obligation to look further off-site to identify mitigation opportunities for this imperiled species. We recommend if more localized mitigation options are deemed untenable, the BLM should renew and expand its mitigation analysis into known Mohave-fringe toed lizard suitable habitat located outside of the Yuma Field Office boundary to identify suitable lands where compensatory mitigation for the Mohave fringe-toed lizard may be more readily achieved.</p>	<p>sensitivity.”</p> <p>“LR-014: Lands authorizations within the Dunes WHA will avoid to the extent practicable, minimize, or mitigate impacts to dunes with sensitive species.”</p> <p>Extensive surveys were conducted of the project site, which assessed dune habitat quality and washes. As result, the final location selected for the project within the survey area was an area of desert pavement with few dispersed sand dunes.</p>
4	2	<p>Recommendations:</p> <ul style="list-style-type: none"> <li>- Acquisition and permanent conservation of off-site suitable Mohave fringe-toed lizard habitat on State and/or private lands where suitable habitat is more abundant. Highly suitable habitat under development pressure should be targeted.</li> <li>- Protection of suitable habitat on BLM lands via the closure of roads and the exclusion of OHV traffic. This could be accomplished in tandem with the management of areas containing potential fringe-toed lizard habitat and wilderness characteristics and values.</li> <li>- Restoration of degraded Mohave fringe-toed lizard habitat via removing and controlling Asian mustard, an exotic species that is thought to degrade fringe-toed lizard habitat by creating windbreaks that affect how windblown sand is deposited.</li> </ul>	<p>Thank you for the recommendations, they will be considered by the YFO in the next round of revisions to the YFO RMP.</p>

5	2	Should habitat of equal or greater value not be available in the landscape proximate to the project site (e.g. the Yuma Field Office), such habitat should be identified elsewhere such that said acquisition or restoration will result in a net benefit to the species impacted by the project.	The EIS states that “the geographic scope for impact analysis for the Mojave fringe-toed lizard was established at different scales...” and that “...the species’ entire distribution was taken into consideration to estimate the Project’s potential impact to the species range-wide.” Additionally the EIS states that “Total habitat acreage for the species rangewide is unknown...,” which is one of the reasons why the Project’s mitigation includes commitment from the Applicant to fund research and collect data to assist the BLM with managing the species more specifically.
1	3	As detailed in our February 8, 2012 comments on the Draft EIS, the Quartzsite Solar project application (Quartzsite Solar) is proposed within the Arizona Wilderness Coalition’s La Posa Plain Citizens’ Wilderness Proposal area (CWP). CWPs and other Lands with Wilderness Characteristics (LWC) should be protected for their outstanding resources and values and are generally not appropriate for solar development. While damage from off-road vehicle use has degraded the wilderness qualities of the Quartzsite Solar project area, construction of the project would cause significantly more impacts and those impacts should be mitigated.	Please reference <i>Response to Wilderness Society Comment No. 10-1</i> in the FEIS.

**Recommendations: To mitigate for impacts to the La Posa Plain CWP and LWC, BLM should amend the Yuma RMP to allocate the remaining area of the La Posa Plain CWP outside of the Quartzsite Solar footprint and other LWC in the Yuma Resource Area as areas that the agency will manage to protect their wilderness characteristics. The BLM should also commit to deferring actions that would harm the wilderness characteristics of the La Posa Plain CWP and/or other LWC that will be managed to protect wilderness characteristics in the Yuma Resource Area.**

**Thank you for the recommendation, it will be considered by the YFO in the next planning exercise, amendment or revision to the YFO RMP.**

## 12. PROTEST

Pursuant to BLM's land use planning regulations in 43 CFR 1610.5-2, any person who participated in the land use planning process for the AEWPP and who has an interest that is or may be adversely affected by the planning decision may protest approval of the proposed YFO RMP amendment contained in the PA/FEIS within 30 days from date the EPA publishes the NOA in the *Federal Register*. Detailed information on protests may be found on the BLM Washington Office website:

[http://www.blm.gov/pgdata/content/wo/en/prog/planning/planning\\_overview/protest\\_resolution.html](http://www.blm.gov/pgdata/content/wo/en/prog/planning/planning_overview/protest_resolution.html).

The plan amendment decision here was to change an existing VRM Class III designation for 6,800 acres in and around the Project site to VRM Class IV. One protest was received from the CRIT describing various aspects of the process, covering overall NEPA adequacy, purpose and need and range of alternatives, cumulative impact analysis, cultural resources and tribal interests, environment and visual resources. The comments focused on analyzing different technologies and consideration of the importance of natural resources to the culture of the tribes. Other comments were related to the potential for subsurface discoveries, the cultural landscape as viewed from places with spiritual and religious importance, and that tribal consultation should address tribal concerns related to impacts to the ancestral landscape and not just providing information to interested tribes.

The BLM analyzed all valid protest issues and determined that the proposed plan amendment and accompanying NEPA analysis complied with applicable laws, regulations, and BLM policies. Accordingly, there is no basis for changing the proposed planning decision and the protest has been denied as explained in the Director's separate Protest resolution report.

## 13. Final Agency Action

### 13.1 Land Use Plan Amendment

It is the decision of the BLM to approve the Proposed Amendment to the YFO RMP to change the VRM Class designation of 6,800 acres of land in and around the Project site from VRM Class III to VRM Class IV. An amendment to an approved resource management plan is to be approved by the State Director only after resolution of any protests by the BLM Director (43 CFR 1610.5-1, 1610.5-2, 1610.5-5). The decision on the protests by the BLM Director is the final decision for the Department (43 CFR 1610.5 2).

In accordance with the regulations at 43 CFR 1610.5-2, I have resolved all protests on the Proposed Plan Amendment. Based on the recommendation of the State Director, Arizona, I hereby approve the Proposed Plan Amendment. This approval is effective on the date this Record of Decision is signed.

Approved by:

\_\_\_\_\_  
 Neil Kornze  
 Principal Deputy Director  
 Bureau of Land Management  
 U.S. Department of the Interior

\_\_\_\_\_  
 Date

### 13.2 Right-of-Way Authorization Quartzsite Solar Energy LLC

It is my decision to approve a ROW grant to Quartzsite Solar Energy LLC to construct, operate, maintain, and decommission the Quartzsite Solar Energy Project, subject to the terms, conditions, stipulations, POD, and environmental protection measures developed by the Department and reflected in this Record of Decision. This decision is effective on the date this Record of Decision is signed.

Approved by:

\_\_\_\_\_  
 /s/  
 Neil Kornze  
 Principal Deputy Director  
 Bureau of Land Management  
 U.S. Department of the Interior

\_\_\_\_\_  
 5/29/2013  
 Date

### 13.3 Right-of-Way Authorization Western Area Power Administration

It is my decision to approve a ROW grant to the Western Area Power Administration to construct, operate, maintain, and decommission a switchyard and either fiber optic or microwave communication systems associated with the Quartzsite Solar Energy Project, subject to the terms, conditions, stipulations, POD, and environmental protection measures developed by the Department reflected in this Record of Decision. This decision is effective on the date this Record of Decision is signed.

Approved by:

\_\_\_\_\_/s/\_\_\_\_\_  
 Neil Kornze  
 Principal Deputy Director  
 Bureau of Land Management  
 U.S. Department of the Interior

\_\_\_\_\_  
 5/29/2013  
 Date

### 13.4 Secretarial Approval

I hereby approve these decisions. My approval of these decisions constitutes the final decision of the Department of the Interior and, in accordance with the regulations at 43 CFR 4.410(a)(3), is not subject to appeal under Departmental regulations at 43 CFR Subpart 4.400. Any challenge to these decisions, including the BLM AO's issuance of the ROW as approved by this decision, must be brought in the Federal district court.

Approved by:

\_\_\_\_\_/s/\_\_\_\_\_  
 Tommy P. Beaudreau  
 Acting Assistant Secretary Land and  
 Minerals Management  
 U.S. Department of the Interior

\_\_\_\_\_  
 5/30/2013  
 Date

## 14. REFERENCES

BLM. 2010. *Yuma Field Office Resource Management Plan*. Available at: <http://www.blm.gov/az/st/en/prog/planning/yfo-final.html> or the local office at 2555 East Gila Ridge Road, Yuma, AZ 85365, 928-317-3200

Corman, T.E. and C. Wise-Gervais, eds. 2005. *Arizona Breeding Bird Atlas*. Albuquerque, NM: University of New Mexico Press.

Environmental Planning Group, Inc. (EPG). 2009. *Biological Reconnaissance of Quartzsite Solar Site 1*. Unpublished report.

La Paz County Comprehensive Plan. Adopted May 2, 2005. Available online at [www.lapaz.az.us/Data\\_Folder/Documents/Adopted\\_Comprehensive\\_Plan\\_5\\_12\\_05.pdf](http://www.lapaz.az.us/Data_Folder/Documents/Adopted_Comprehensive_Plan_5_12_05.pdf).

Western Area Power Administration. December 2012. *Final Environmental Impact Statement for the Quartzsite Solar Energy Project and Proposed Yuma Field Office Resource Management Plan Amendment*. Available at: <http://ww2.wapa.gov/sites/western/transmission/interconn/Documents/quartzsite/FinalQSEIS.pdf>

Bureau of Land Management, October 2011 and December 2012: *Draft and Final Environmental Impact Statement for the Quartzsite Solar Energy Project and Proposed Yuma Field Office Resource Management Plan Amendment*. Available at: [http://www.blm.gov/az/st/en/prog/energy/solar/quartzsite\\_solar\\_energy.html](http://www.blm.gov/az/st/en/prog/energy/solar/quartzsite_solar_energy.html)