

From: Craig Hoffman
To: Kourtney Vaccaro
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Subject: Abengoa PMPD unofficial early comments.
Attachments: June 28 agreed upon conditions.doc; AMS_Biology Fig 1 (Mar 2010).pdf

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Kourtney

I will have other edits, but I have 4 easy ones for you.

Air Quality. Here is condition 52. It was in the SSA Part B, but I missed it in the Air Quality Errata and revised conditions.

AQ-52 Any modifications or changes to the piping or control fitting of the vapor recovery system require prior approval from the District.

Verification: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

Biology. Attached is the correct Bio figure 1

Visual Resources - conditions 2 and 4 in the PMPD were from the Staff Assessment Part A and not approved rebuttal conditions.

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June 28, 2010

Clean Conditions of Certification.

Biological Resources

Modifications to conditions of certification **BIO-3, BIO-5, BIO-17, BIO-18 and BIO-19**

BIOLOGICAL MONITOR SELECTION, QUALIFICATIONS, AND DUTIES

BIO-3 The project owner's CPM-approved Designated Biologist shall submit the resume, at least three references and contact information, of the proposed Biological Monitors to the CPM, CDFG, and USFWS for approval. The resume shall demonstrate to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks, including:

- Biological Monitor(s) involved in any aspect of desert tortoise surveys or handling must meet the criteria to be considered a USFWS Authorized Biologist (USFWS 2008) and demonstrate familiarity with the most recent protocols and guidelines for the desert tortoise.
- Biological Monitor(s) involved in any aspect of Mohave ground squirrel surveys or handling must possess a California ESA Memorandum of Understanding pursuant to Section 2081(a) for Mohave ground squirrel or have adequate experience and qualifications to obtain this authorizations.

Biological Monitor(s) training by the Designated Biologist shall include familiarity with the conditions of certification and the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), Worker Environmental Awareness Program (WEAP), and all permits.

The Biological Monitors shall assist the Designated Biologist in conducting surveys and in monitoring of site mobilization activities, construction-related ground disturbance, grading, boring or trenching. The Designated Biologist shall remain the contact for the Project owner, BLM's Authorized Officer and the CPM.

Verification: The project owner shall submit the specified information to the CPM, CDFG, and USFWS for approval at least 60 days prior to the start of any pre-construction site mobilization, and concurrent with the submittal of information required for the Designated Biologist approval process outlined in BIO-1. The CPM, CDFG, and USFWS have 30 days to approve or deny proposed Biological Monitor(s).

The Designated Biologist shall submit a written statement to the CPM confirming that the individual Biological Monitor(s) have been trained including the date when training was completed.

If additional biological monitors are needed during construction, the specified information shall be submitted to the CPM for approval 10 days prior to their first day of monitoring activities.

WORKER ENVIRONMENTAL AWARENESS PROGRAM

BIO-5 The project owner shall develop and implement a CPM-approved Worker Environmental Awareness Program (WEAP) in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or any related facilities during site mobilization, ground disturbance, grading, construction, operation, and closure are informed about sensitive biological resources associated with the project.

The WEAP must:

1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material and electronic media is made available to all participants;
2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas, if present;
3. Present the reasons for protecting these resources;
4. Present the meaning of various temporary and permanent habitat protection measures as necessary;
5. Discuss penalties for violation of applicable LORS (e.g., federal and state endangered species acts);
6. Identify whom to contact if there are further comments and questions about the material discussed in the program; and
7. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

Verification: At least 45 days prior to the start of any pre-construction site mobilization, the project owner shall provide to the CPM the proposed WEAP and all supporting written materials and electronic media prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program. The CPM shall review and provide written comments within 15 days of receipt of the WEAP.

The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. At least 10 days prior to site and related facilities mobilization submit two copies of the CPM-approved materials.

Training acknowledgement forms signed during construction shall be kept on file by the project owner for a period of at least six months after the start of commercial operation.

During project operation, signed statements for operational personnel shall be kept on file for six months following the termination of an individual's employment.

MONITORING IMPACTS OF SOLAR COLLECTION TECHNOLOGY ON BIRDS

BIO-17 The project owner shall prepare and implement a Bird Monitoring Study to monitor the death and injury of birds from collisions with facility features such as reflective mirror-like surfaces and from heat, and bright light from concentrating sunlight. The study design shall be approved by the CPM in consultation with CDFG and USFWS, and shall be incorporated into the project's BRMIMP and implemented. The Bird Monitoring Study shall include detailed specifications on data and carcass collection protocol and a rationale justifying the proposed schedule of carcass searches. The study shall also include seasonal trials to assess bias from carcass removal by scavengers as well as searcher bias.

Verification: At least 60 days prior to any construction-related ground disturbance, the project owner shall submit to the CPM, USFWS, and CDFG a draft Bird Monitoring Study. The CPM shall review and provide written comments within 15 days of receipt of the Bird Monitoring Study. At least 30 days prior to start of any construction-related ground disturbance activities, the project owner shall provide the CPM with the final version of the Bird Monitoring Plan that has been reviewed and approved by the CPM, in consultation with CDFG and USFWS. All modifications to the Bird Monitoring Study shall be made only after approval from the CPM.

For at least two years following the beginning of operation the Designated Biologist shall submit quarterly reports to the CPM, CDFG, and USFWS describing the dates, durations and results of monitoring. The quarterly reports shall provide a detailed description of any Project-related bird or wildlife deaths or injuries detected during the monitoring study or at any other time.

Following the completion of the fourth quarter of monitoring the Designated Biologist shall prepare an Annual Report that summarizes the year's data, analyzes any Project-related bird fatalities or injuries detected, and provides recommendations for future monitoring and any adaptive management actions needed. The Annual Report shall be provided to the CPM, CDFG, and USFWS.

Quarterly reporting shall continue until the CPM, in consultation with CDFG and USFWS, determine whether more years of monitoring are needed, and whether mitigation (e.g., development and/or implementation of bird deterrent technology)

and/or adaptive management measures are necessary. After the Bird Monitoring Study is determined by the CPM to be complete, the project owner or contractor shall prepare a paper that describes the study design and monitoring results to be submitted to a peer-reviewed scientific journal. Proof of submittal shall be provided to the CPM within one year of concluding the monitoring study.

COMMON RAVEN MONITORING, MANAGEMENT, AND CONTROL

BIO-18 The project owner shall implement the following measures to manage their construction site and related facilities in a manner to control raven populations and to mitigate cumulative and indirect impacts to desert tortoise associated with regional increases in raven numbers:

1. Common Raven Monitoring, Management, and Control Plan. The project owner shall design and implement a Common Raven Monitoring, Management, and Control Plan that is consistent with the most current USFWS-approved raven management guidelines and that meets the approval of USFWS, CDFG, and Energy Commission staff. The Raven Plan shall:
 - A. Identify conditions associated with the project that might provide raven subsidies or attractants;
 - B. Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities;
 - C. Describe control practices for ravens;
 - D. Address monitoring and nest removal during construction and for the life of the project;
 - E. And discuss reporting requirements.
2. USFWS Regional Raven Management. The project owner shall submit payment to the project sub-account of the REAT Account held by the National Fish and Wildlife Foundation (NFWF) to support the regional raven management plan. The amount shall be a one-time payment of \$105 per acre of land permanently disturbed by the project.

Verification: At least 30 days prior to start of any construction-related ground disturbance activities, the project owner shall provide the CPM, USFWS, and CDFG with the final version of the Raven Management Plan that has been reviewed and approved by USFWS and CDFG. The CPM shall determine the plan's acceptability within 10 days of receipt of the final plan. All modifications to the approved Raven Management Plan must be made only after consultation with the Energy Commission staff, USFWS, and CDFG. The project owner shall notify the CPM no less than five working days before implementing any CPM-approved modifications to the Raven Plan.

Prior to start of any construction-related ground disturbance activities, the project owner shall submit to the CPM verification of payment to the REAT Account to support the regional raven monitoring plan. Payment shall be included in the AMS project's land management enhancement fund, pursuant to Condition of Certification **BIO-15 (5(D))**.

Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval a report identifying which items of the Raven Plan have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which items are still outstanding.

Evaporation Pond Monitoring and Adaptive Management Plan

BIO-19 The project owner shall design and implement an Evaporation Pond Monitoring and Adaptive Management Plan that meets the requirements of the USFWS, CDFG, RWQCB and the CPM. The objective of the Plan is to define the monitoring and reporting procedures as well as triggers for adaptive management strategies that shall be implemented to prevent wildlife mortality at the evaporation ponds. The plan shall include:

- A description of evaporation pond design features such as side slope specifications, freeboard and depth requirements, which will prevent use by wildlife;
- A detailed description of the wildlife monitoring procedures and schedule. For the initial implementation of a new technology, daily monitoring shall be conducted both at the project evaporation ponds and the wetlands within the Harper Lake ACEC. Monitoring may be reduced to weekly and potentially bi-weekly or monthly depending on the results of initial monitoring period.
- A detailed description of the water quality and water level monitoring procedures and schedule. Water quality and water level monitoring shall coincide with wildlife monitoring to provide a basis for comparative analysis.
- A description of wildlife exclusion/deterrent technologies and adaptive management strategies. Technologies shall include, but are not limited to netting, and shall not disturb or harass non-target wildlife adjacent to the project area.
- Triggers for adaptive management (i.e., modifications to existing technology or replacement with new technology). Adaptive management shall be necessary if: 1) more than one dead bird per quarter is discovered at the evaporation ponds; or 2) one special-status animal is discovered at the evaporation ponds; or 3) noise levels attributable to the technology exceed 60dB at the Harper Lake ACEC wetlands. After three failed

attempts at new technology or modification of existing technology, the ponds shall be netted;

- Reporting requirements, to include monthly reporting for the first year if a technology other than netting is used. Reporting may be reduced to monthly or quarterly thereafter if no bird or wildlife deaths are reported during the first year. If wildlife mortality occurs at the ponds or if birds are disturbed at the marsh as described above, the CPM shall be notified within 10 days of the incident and the accompanying adaptive management action to be implemented.

Evaporation pond monitoring and reporting shall continue for the life of the project. The draft Plan submitted by the Applicant (AS 2009d) shall provide the basis for the final plan, subject to review and revisions from the CPM in coordination with USFWS, CDFG, and RWQCB.

Verification: At least 30 days prior to operation of the evaporation ponds, the project owner shall provide the CPM, USFWS, RWQCB, and CDFG with the final version of the Plan that has been reviewed and approved by the CPM in consultation with USFWS, RWQCB, and CDFG. The project owner shall first submit a draft plan to the CPM that incorporates the guidance in this condition. The CPM, in coordination with USFWS, RWQCB, and CDFG, shall provide written comments to the project owner within 30 days of receipt of the draft plan and shall determine the acceptability of the final plan within 15 days of its receipt. All modifications to the approved Plan may be made by the CPM after consultation with USFWS, RWQCB, and CDFG. The project owner shall notify the CPM no less than five working days before implementing any CPM-approved modifications to the Evaporation Pond Plan.

Noise

Modified refinements made to **NOISE-2**, **NOISE-4** and **NOISE-7**:

NOISE-2 Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all legitimate¹ project-related noise complaints. The project owner or authorized agent shall:

¹ A legitimate complaint refers to a complaint about noise that is confirmed by the CPM to be disturbing, and that is caused by the AMS project as opposed to another source (as verified by the CPM). A legitimate complaint constitutes a violation by the project of any noise condition of certification (as confirmed by the CPM), which is documented by an individual or entity affected by such noise.

- Use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;
- Attempt to contact the person(s) making the noise complaint within 24 hours;
- Conduct an investigation to determine the source of noise in the complaint;
- If the noise is legitimate project related, take all feasible measures to reduce the source of the noise; and
- Submit a report documenting the complaint and actions taken. The report shall include: a complaint summary, including the final results of noise reduction efforts and, if obtainable, a signed statement by the complainant stating that the noise problem has been resolved to the complainant's satisfaction.

Verification: Within five days of receiving a noise complaint, the project owner shall file a Noise Complaint Resolution Form, shown below, with both the local jurisdiction and the CPM, that documents the resolution of the complaint. If mitigation is required to resolve the complaint, and the complaint is not resolved within a three-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is performed and complete.

NOISE-4 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the operation of the project will not cause the noise levels due to plant operation alone, during the daylight hours (when the project is capable of producing electricity), to exceed an average of 55 dBA measured at or near monitoring location LT-1 (15563 Edie Road), an average of 43 dBA measured at or near monitoring location LT-2 (41234 Harper Lake Road), an average of 55 dBA measured at or near monitoring location ST-1 (15635 Lockhart Road), and an average of 49 dBA measured at or near monitoring location ST-2 (15654 Roy Road).

Also, the project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the operation of the project will not cause the noise levels due to plant operation alone, during the four quietest consecutive hours of the nighttime, to exceed an average of 24 dBA measured at or near monitoring location LT-1 (15563 Edie Road), an average of 30 dBA measured at or near monitoring location LT-2 (41234 Harper Lake Road), an average of 24 dBA measured at or near monitoring location ST-1 (15635 Lockhart Road), and an average of 24 dBA measured at or near monitoring location ST-2 (15654 Roy Road). All noise limitations contained in this condition of certification are independent of ambient levels. The limitations are placed on

noise created by the project plant operation alone. No new pure-tone components shall be caused by the project. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.

- A. When the project first achieves a sustained output of 90% or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey at monitoring location LT-1, or at a closer location acceptable to the CPM. This survey shall be conducted during a windy day to be representative of the normal daytime environment in the project area. This survey during the power plant's full-load operation shall also include measurement of one-third octave band sound pressure levels to ensure that no new pure-tone noise components have been caused by the project.

During the period of this survey, the project owner shall conduct a short-term survey of noise at each of the monitoring locations LT-2, ST-1, and ST-2, or at closer locations acceptable to the CPM. The short-term noise measurements at these locations shall be conducted during the daylight hours and again during the nighttime hours of 10:00 p.m. to 7:00 a.m.

The measurement of power plant noise for the purposes of demonstrating compliance with this condition of certification may alternatively be made at a location, acceptable to the CPM, closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the affected residence. The character of the plant noise shall be evaluated at the affected receptor locations to determine the presence of pure tones or other dominant sources of plant noise.

- B. If the results from the noise survey indicate that the power plant noise at the affected receptor sites exceeds the above values during the above specified period(s) of time, mitigation measures shall be implemented to reduce noise to a level of compliance with these limits.
- C. If the results from the noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

Verification: The survey shall take place within 90 days of the project first achieving a sustained output of 90% or greater of rated capacity. Within 30 days after completing the survey, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report will be a description of any

additional mitigation measures necessary to achieve compliance with the above listed noise limit, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

Within 30 days of completion of the new survey, the project owner shall submit to the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.

NOISE-7 If a traditional, high-pressure steam blow process is used, the project owner shall monitor steam blow noise at the closest receptors, LT-1, ST-2, and ST-1, to ensure the noise of steam blows does not exceed 60 dBA at these locations. If this noise level is unattainable, the project owner shall either relocate the residents for the duration of steam blows to a location further away from these activities, or equip steam blow piping with a temporary silencer that quiets the noise of steam blows to no greater than 60 dBA, measured at LT-1, and ST-2., and ST-1. The steam blows shall be conducted between 7:00 a.m. and 7:00 p.m. unless arranged with the CPM such that offsite impacts would not cause annoyance to noise receptors. If a low-pressure, continuous steam blow process is used, the project owner shall submit to the CPM a description of the process, with expected noise levels and planned hours of steam blow operation.

Verification: At least 15 days prior to the first steam blow, the project owner shall notify all residents and business owners within two miles of the project site. The notification may be in the form of letters, phone calls, fliers, or other effective means as approved by the CPM. The notification shall include a description of the purpose and nature of the steam blow(s), the planned schedule, expected sound levels, and explanation that it is a one-time activity and not part of normal plant operation. During steam blow activities, noise levels will be monitored at receptor locations LT-1, ST-1, and ST-2 and the results reported to the CPM.

Soil and Water Resources

Staff Modified Conditions of Certification **SOIL&WATER-6, -10, -11, and -12**

SOIL&WATER-6 The project owner shall submit a Groundwater Monitoring and Reporting Plan to the CPM for review and approval. This plan shall consist of two parts as defined by Conditions of Certification **SOIL&WATER-6** and **-7**. **SOIL&WATER-6** describes the requirements for establishing a groundwater

well monitoring network and monitoring groundwater levels in that network. **SOIL&WATER-7** describes the requirements for monitoring groundwater quality in the network. Mitigation for impacts related to project induced groundwater level declines or degradation in groundwater quality are provide in each condition of certification. All work and reporting under these conditions of certification shall be conducted under the supervision of a licensed California professional geologist or engineer.

The Groundwater Level Monitoring and Reporting Plan shall provide detailed methodology for monitoring background and site groundwater levels. Monitoring shall include pre-construction, construction, and project operation conditions. The primary objective for the monitoring is to establish a baseline of pre-construction groundwater level trends that can be quantitatively compared against observed and simulated trends near the project pumping wells and near potentially impacted existing wells during project construction and over the life of project operation. The project owner shall:

A. Prior to Project Construction

1. Well Reconnaissance. Conduct a well reconnaissance to investigate and document condition of existing water supply wells within the monitoring area provided access is granted by the well owner). The monitoring area shall be defined by the 20-foot contour of simulated groundwater drawdown induced by AMS project pumping at the end of the project life (as presented in Appendix B Figure Soil and Water 3). Notices shall be sent by registered mail to each well owner identified within monitoring area that provide the following information:
 - a. A summary of the proposed project with an explanation of how the groundwater levels are expected to be lowered due to the AMS project groundwater pumping;
 - b. An option for the well owner to be provided a copy of the Groundwater Monitoring and Report Plan as approved by the CPM and all reports prepared in compliance with the CPM-approved plan;
 - c. The project owner's contact name, address, and telephone where the well owner can obtain more information; and
 - d. The address and telephone number of the Energy Commission.
2. Monitoring Plan. Submit a Groundwater Level Monitoring and Reporting Plan to the CPM for review and approval at least sixty (60) days prior to construction. This plan shall include at a minimum:
 - a. The monitoring plan and network of monitoring wells shall make use of two of the four project production wells (once installed), all

monitoring wells installed to comply with Waste Discharge Requirements for the evaporation ponds and land treatment unit associated with the project, and the BLM marsh water supply well. In addition, and at least three additional existing wells in the Harper Lake area shall be incorporated into the program. The final well selection shall be based on access being granted by the owners and by BLM and that the wells are deemed by the CPM to be of suitable location and construction to satisfy the requirements for the monitoring program. Some Harper Lake area wells are already monitored, and these wells can be included as part of the network if they meet the objectives of the monitoring program.

- b. A scaled map showing the project site, boundary, location of all wells within the monitoring area, and location of wells selected for the monitoring network. The map shall also include relevant natural (e.g., faults, playa lake, etc.) and man-made features that are existing and proposed as part of the AMS project.
- c. Available well construction information, drilling and well installation methods, and borehole lithology for all wells in the monitoring area.
- d. For monitoring network wells, report the results of a wellhead elevation survey that record: the location and elevation of the well; the location and elevation of the top of the well casing reference point for all water level measurements (the measurement point); and the coordinate system and datum for the survey measurements.
- e. A description of how groundwater measurements will be collected and reported. All groundwater level measurements shall be made to the nearest 1/100 of a foot.
- f. A description of the groundwater level measurements and reporting protocols and quality assurance/quality control plan.
- g. Information about the AMS project wells shall be added to a revised plan submitted to the CPM for review and approval within sixty (60) days after the project wells are installed.
- h. A description of the reporting requirements presented below, including a statistical analyses conducted on the data collected, the thresholds employed to determine impact significance, and a description of the mitigation required for significant water level impacts should they occur.
- i. A schedule for measuring water levels in all wells in the monitoring network.
- j. The plan shall be signed and stamped by a licensed California professional geologist or engineer.

3. Monitoring. Before the start of project construction, collect groundwater levels from all existing wells within the monitoring network, in accordance with the requirements in the Groundwater Level Monitoring and Reporting Plan, to establish pre-construction conditions.
4. Reporting. A report documenting the pre-construction monitoring results shall be submitted to the CPM after measuring groundwater levels in network wells. At a minimum, the report shall contain: a tabular summary of the network wells; the water level measurements; and dates of the water level measurements; diagrams showing water levels in the wells over time (hydrographs); a map of groundwater elevation contours and calculated gradients; and conclusions regarding groundwater level trends and recommendations for future monitoring and the likelihood of potential interferences to existing wells made by a licensed California professional geologist or engineer.

B. During Construction:

5. Collect groundwater levels within the monitoring network on a quarterly basis throughout the construction period. Perform statistical trend analysis for groundwater levels data using linear regression or a non-parametric test such as Kendall-Theil Robust Line, or other appropriate statistical analysis. Assess the significance of apparent trends using appropriate statistical analysis and compare to observed background trends in other monitored wells in the subbasin.
6. After measuring groundwater levels in network wells, submit to the CPM a report of pre-project groundwater levels, present a summary of available climatic information (monthly average temperature and rainfall records from the nearest weather station), and provide a comparison and assessment of water level data relative to the spatial trends simulated by the USGS Mojave River Basin Model (USGS2001). This report shall also contain a tabular summary of the wells, current and historical water level measurements, and dates of water level measurements; a map of the groundwater elevation contours and calculated gradients; and conclusion and recommendations of a licensed California professional geologist or engineer.

C. During Operation:

7. On a quarterly basis for the first year of operation and semi-annually thereafter for the following four years, collect groundwater level measurements from all wells identified in the groundwater monitoring network. Quarterly operational parameters (i.e., pumping rate and days on which pumping occurred) of the groundwater supply wells shall be monitored.
8. On an annual basis, perform statistical trend analysis (using linear regression or a non-parametric test such as Kendall-Theil Robust Line,

or other appropriate statistical analysis) on water levels, compare water levels and trends to pre-project conditions, present a summary of available climatic information (monthly average temperature and rainfall records from the nearest weather station), and provide a comparison and assessment of water level data relative to the assumptions and spatial trends simulated by the USGS Mojave River Basin Model (USGS2001). The magnitude and significance of any trends shall be evaluated. Based on comparisons between pre-project, project, and background water level trends, the project owner shall estimate the groundwater level change attributed to project pumping. These calculations shall be supported using a tabular summary of the wells, current and historical water level measurements, a map of the groundwater elevation contours; calculated gradients; and conclusion and recommendations of a licensed California professional geologist or engineer.

D. Mitigation:

9. If groundwater levels have been lowered more than 20 feet below pre-construction levels in an offsite well and monitoring data indicates the water level decline is attributed to project pumping, then the project owner shall assess the impact to the water column above the pump and well screen and related impact to well yield.
10. Mitigation shall be provided to well owners that experience 20 feet or more of project-induced drawdown if well monitoring data confirms project pumping causes all or a portion of the drawdown and either the previously submerged well screen has been exposed or the well yield or performance has been reduced such that the well fails to meet demand. The type and extent of mitigation shall be determined by the amount of water level decline induced by the project, the type of impact, and site specific well construction and water use characteristics. If an impact is determined to be caused by drawdown from more than one source, the level of mitigation provided shall be proportional to the amount of drawdown induced by the project relative to other sources. In order to be eligible, a well owner must provide documentation of the well location and construction, including pump intake depth, and evidence that the well was constructed in use before project pumping was initiated. The mitigation of impacts shall be determined as follows:
 - a. Increased Electrical Usage. If project pumping has lowered a well's water levels and increased pumping lifts, increased energy costs shall be calculated. Payment or reimbursement for the increased costs shall be provided at the option of the affected well owner. In the absence of specific electrical use data supplied by the well owner, the following formula shall be used to calculate the additional electrical usage:

Increased Cost for Energy= (change in lift/total hydraulic head) x
(total energy consumption times
costs/unit of energy)

Where:

change in lift (ft) = calculated change in water level in the
well

total hydraulic head (ft) = (elevation head) + (discharge
pressure head)

elevation head (ft) = (wellhead discharge pressure gauge
elevation) – (water level elevation in
well during pumping)

discharge pressure head (ft) = (pressure in pounds per square
inch at wellhead discharge gauge) x
(2.31 to convert psi to feet of water)

The project owner shall submit to the CPM for review and approval the documentation showing which well owners must be compensated for increased energy costs and that the proposed amount is sufficient compensation to comply with the provisions of this condition.

- i. Any reimbursements (either lump sum or annual) to impacted well owners shall be only to those well owners whose wells were in service within six months of the Commission decision and within the 20-foot contour interval established in Item A above.
- ii. The project owner shall notify all owners of the impacted wells within one month of the CPM approval of the compensation analysis for increase energy costs.
- iii. Compensation shall be provided on either a one-time lump-sum basis, or on an annual basis, as described below.

Annual Compensation. Compensation provided on an annual basis shall be calculated prospectively for each year by estimating energy costs that will be incurred to provide the additional lift required as a result of the project. With the permission of the impacted well owner, the project owner shall provide energy meters for each well or well field affected by the project. The impacted well owner to receive compensation must provide documentation of energy consumption in the form of meter readings or other verification of fuel consumption. For each year after the first year of operation, the

project owner shall include an adjustment for any deviations between projected and actual energy costs for the previous calendar year.

One-Time Lump-Sum Compensation. Compensation provided on a one-time lump-sum basis shall be based on a well-interference analysis, assuming the maximum project-pumping rate of 2,160 AF/y. Compensation associated with increased pumping lift for the life of the project shall be estimated as a lump sum payment as follows:

- i. The current cost of energy to the affected party considering time of use or tiers of energy cost applicable to the party's billing of electricity from the utility providing electric service, or a reasonable equivalent if the party independently generates their electricity;
 - ii. An annual inflation factor for energy cost of 3 percent; and
 - iii. A net present value determination assuming a term of 30 years and a discount rate of 9 percent;
- b. Well Screen Exposure. If groundwater monitoring data indicate project pumping has lowered water levels below the top of the well screen, and the well yield is shown no longer meet pre-project demand, compensation shall be provided to diagnose and treat ~~and~~ well screen encrustation. Reimbursement shall be provided at an amount equal to the customary local cost of performing the necessary diagnosis and maintenance for well screen fouling. Should well yield reductions reoccur, the project owner shall provide payment or reimbursement for either periodic maintenance throughout the life of the project or replacement of the well.
- c. Well Yield. If project pumping has lowered water levels to significantly impact well yield so that it can no longer meet its intended purpose, causes the well to go dry, or cause casing collapse, payment or reimbursement of an amount equal to the cost of deepening or replacing the well shall be provided to accommodate these effects. Payment or reimbursement shall be at an amount equal to the customary local cost of deepening the existing well or constructing a new well of comparable design and yield (only deeper). The demand for water, which determines the required well yield, shall be determined on a per well basis using well owner interviews and field verification of property conditions and water requirements compiled as part of the pre-project well reconnaissance. Well yield shall be considered significantly impacted if it is incapable of meeting 100 percent of the well owner's maximum daily demand and 5-year average annual demand – assuming the pre-project well yield documented by the

initial well reconnaissance met or exceeded these yield levels. The contribution of project pumping to observed decreases in observed well yield shall be determined by interpretation of the groundwater monitoring data collected and shall take into consideration the effect of other nearby pumping wells, basin-wide trends, and the condition of the well prior to the commencement of project pumping.

- d. The project owner shall notify any owners of the impacted wells within one month of the CPM approval of the compensation analysis.
- e. Pump Lowering. In the event that groundwater is lowered as a result of project pumping to an extent where pumps are exposed but well screens remain submerged, the pumps shall be lowered to maintain production in the well. The project shall reimburse the impacted well owner for the costs associated with lowering pumps in proportion to the project's contribution to the lowering of the groundwater table that resulted in the impact.
- f. Deepening of Wells. If the groundwater is lowered enough as a result of project pumping that well screens and/or pump intakes are exposed, and pump lowering is not an option, such affected wells shall be deepened or replacement wells constructed. The project shall reimburse the impacted well owner for all costs associated with deepening existing wells or constructing replacement wells in proportion to the project's contribution to the lowering of the water table that resulted in the impact.

E. Monitoring Program Evaluation:

- 11. After the first five-year operational and monitoring period, and every subsequent 5-year period, the CPM shall evaluate the data and determine if the monitoring program water level measurement frequencies should be revised or eliminated. Revision or elimination of any monitoring program elements shall be based on the consistency of the data collected.

Verification: The project owner shall do all of the following:

- 1. At least sixty (60) days prior to project construction, the project owner shall submit to the CPM, for review and approval, a comprehensive plan (Groundwater Level Monitoring and Reporting Plan) presenting all the data and information required in Item A above. The project owner shall submit to the both the CPM all calculations and assumptions made in development of the plan.
- 2. During project construction, the project owner shall submit to the CPM quarterly reports presenting all the data and information required in Item B above. The project owner shall submit to the CPM all calculations and assumptions made in development of the report data and interpretations.

3. No later than sixty (60) days after commencing project operation, the project owner shall provide to the CPM, for review and approval, documentation showing that any mitigation to private well owners during project construction was satisfied, based on the requirements of the property owner as determined by the CPM.
4. During project operation, the project owner shall submit to CPM, applicable quarterly, semi-annual, and annual reports presenting all the data and information required in Item C above. The project owner shall submit to the CPM all calculations and assumptions made in development of report data and interpretations, calculations, and assumptions used in development of any reports.
5. The project owner shall provide mitigation as described in Item D above, if the CPM's inspection of the monitoring information confirms project-induced changes to water levels and water level trends relative to measured pre-project water levels, and well yield has been lowered by project pumping. The type and extent of mitigation shall be determined by the amount of water level decline and site-specific well construction and water use characteristics. The mitigation of impacts will be determined as set forth in Item D above.
6. No later than 30 days after CPM approval of the well drawdown analysis, the project owner shall submit to the CPM for review and approval all documentation and calculations describing necessary compensation for energy costs associated with additional lift requirements.
7. The project owner shall submit to the CPM all calculations, along with any letters signed by the well owners indicating agreement with the calculations, and the name and phone numbers of those well owners that do not agree with the calculations.
8. If mitigation includes monetary compensation, the project owner shall provide documentation to the CPM that compensation payments have been made by March 31 of each year of project operation or, if a lump-sum payment is made, payment shall be made by March 31 of the following year. Within 30 days after compensation is paid, the project owner shall submit to the CPM a compliance report describing compensation for increased energy costs necessary to comply with the provisions of this condition.
9. After the first 5-year operational and monitoring period, and every subsequent 5-year period, the project owner shall submit a 5-year monitoring report to the CPM for review and approval. This report shall contain all monitoring data collected and provide a summary of the findings and a recommendation about whether the frequency of water level measurements should be revised or eliminated.
10. During the life of the project, the project owner shall provide to the CPM all monitoring reports, complaints, studies, and other relevant data within 10 days of being received by the project owner.

SOIL&WATER-10: The Project is subject to the requirement of Title 22, Article 3, Sections 64400.80 through 64445 for a non-transient, non-community water system (serving 25 people or more for more than six months). Pursuant to

this requirement, the project owner shall obtain a permit from the County of San Bernardino to operate a non-transient, non-community water system.

Verification: The project owner shall obtain a permit to operate a non-transient, non-community water system with the County of San Bernardino at least sixty (60) days prior to commencement of construction at the site. The project owner shall supply updates annually for all monitoring requirements and submittals to County of San Bernardino related to the permit, and proof of annual renewal of the operating permit.

SOIL&WATER-11 As a conservation method, the project owner shall annually sequester a volume of Free Production Allowance (FPA) equal to the annual volume of groundwater pumped for the AMS project. This sequestration is subject to and defined by the following:

- The project owner shall exercise all option rights identified in the AFC and thereby acquire groundwater Base Annual Production rights totaling 10,478 AF/y.
- Sequester means that the project owner retain and refrain from exercising groundwater FPA use rights which the project owner could exercise under the Mojave Basin Area Adjudication.
- The project owner shall sequester annually a volume of groundwater equal to that year's volume of groundwater used for the AMS project, up to a maximum annual volume of 2,160 acre-feet.
- Sequestration shall continue annually for the life of the project.
- The annual sequestration of FPA is not intended to affect the Watermaster's implementation of the Mojave Basin Area Adjudication.
- Sequestered water would not be considered by the Energy Commission to be produced water subject to any replacement water obligation under the Mojave Basin Area Adjudication.

Verification: The volume of FPA sequestered shall be documented in the Annual Compliance Report submitted to the CPM. This documentation shall include a table showing the annual and cumulative total FPA sequestered.

SOIL&WATER-12 As a conservation method, the project owner shall contribute up to \$50,000 annually, for the life of the AMS project, towards the Mojave Water Agency's (MWA) turf replacement program, high-efficiency toilet program, or other water conservation program as approved by the CPM. This contribution shall be made the same month each year as established by the first year's contribution.

The project owner's contribution to the MWA conservation program shall be an amount necessary to conserve groundwater equal in volume to the difference between the annual AMS project's water use and annual

groundwater sequestered. If the project owner demonstrates that the annual or cumulative water sequestered equals or exceeds project water use, then no contribution to the MWA conservation program is required. Within the \$50,000 limit, the project owner shall ensure that the amount contributed to the water conservation program is adjusted on an annual basis to maintain the required amount of water conservation.

If the project owner proposes to change or add water conservation programs that can be funded for the purposes of this condition, a plan must be provided showing which programs are proposed, how much water savings can be achieved, and how much funding is proposed. The plan shall be provided for CPM review and approval in consultation with the Mojave Water Agency prior to the proposed date of change in water conservation programs.

Verification: The project owner shall do the following:

1. The project owner shall submit to the CPM the following documentation as part of the Annual Compliance Report:
 - a. A copy of the receipt from the MWA for the annual contribution; and
 - b. An accounting of the following:
 - i. The annual and cumulative volume of groundwater used by the project in acre-feet per year;
 - ii. The annual and cumulative volume of FPA sequestered by the project in acre-feet per year;
 - iii. The numerical difference between annual and cumulative totals in Items i and ii above; and
 - iv. The annual and cumulative monetary contribution and estimated annual and cumulative volume of water conserved by the project owner's contribution to MWA's turf replacement program, high-efficiency toilet program, or other water conservation program approved by the CPM.
2. If the project owner proposes to reduce the amount of the annual contribution based on the water conservation achieved through previous contributions, the project owner shall provide a plan demonstrating how the adjusted amount will ensure the water conservation program meets the requirements of this condition. The plan shall be provided for CPM review and approval 60 days prior to the annual contribution anniversary date.

Traffic and Transportation

Modified refinements made to **TRANS-4**.

TRANS-4 During construction, the project owner will stagger the start time of employees for the day-time shift (morning start) in 4 roughly equal groups spaced by at least 30 minutes between groups. Also during construction, the project owner will be restricted from receiving any construction deliveries from the west starting 30 minutes before the day-time shift and continuing until all groups have arrived for the morning shift.

Verification: The project owner shall include these restrictions in the construction traffic control plan required by **TRANS-2**.

Visual Resources

Modified refinements made to **VIS-1**, **VIS-2** and **VIS-4**:

VIS-1 The project owner shall treat the surfaces of all project structures and buildings visible to the public, other than surfaces that are intended to direct or reflect sunlight, so that their colors minimize visual intrusion and contrast by blending with the rural landscape in both color and value and their colors and finishes do not create excessive glare.

The project owner shall submit to the Compliance Project Manager (CPM) for review and approval a specific surface treatment plan that will satisfy these requirements. The treatment plan shall include:

- A. A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes;
- B. A list of each major project structure, building, tank, pipe, wall, and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and number or according to a universal designation system;
- C. One set of color brochures or color chips showing each proposed color and finish;
- D. A specific schedule for completion of the treatment; and
- E. A written procedure to ensure proper treatment maintenance for the life of the project.

The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated in the field, until the project owner receives notification of approval of the treatment plan by the CPM. Subsequent modifications to the treatment plan are prohibited without CPM approval.

Verification: At least 90 days prior to specifying to the vendor the colors and finishes for each set of the first structures or buildings that are surface treated during manufacture, the project owner shall submit the proposed treatment plan to the CPM for review and approval.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a plan with the specified revision(s) for review and approval by the CPM before any treatment is applied. Any modifications to the treatment plan must be submitted to the CPM for review and approval. The review of any subsequent revisions shall be completed by the CPM within fifteen (15) days of receipt of the revisions.

Prior to the start of commercial operation, the project owner shall notify the CPM that surface treatment of all listed structures and buildings has been completed and they are ready for inspection and shall submit one set of electronic color photographs from key observation points (KOPs) 1, 2, 3, 4, 5, 6, 7, and 8 analyzed in the Staff Assessment.

The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify a) the condition of the surfaces of all structures and buildings at the end of the reporting year; b) maintenance activities that occurred during the reporting year; and c) the schedule of maintenance activities for the next year.

VIS-2 The project owner shall develop and implement a plan to reduce permanent views of the project from residential properties located within 0.5 mile of the project boundary by installing off-site landscape planting on the residential properties if the landowner so desires and requests implementation of the off-site landscape screening in writing. The landscape planting shall reduce views of the project and exposure to glare to a reasonable level.

The project owner shall submit to the CPM for review and approval a screening plan providing proper implementation that will satisfy these requirements. The plan shall include:

A. A detailed plan at a reasonable scale such that all information is legible, and elevations and/or section drawings showing the relationship of the screening to the project site. The plan, elevations and/or sections shall clearly demonstrate how the view-reducing requirements stated above shall be met. The plan shall provide a detailed plant list including quantities and sizes of materials to be used and an installation schedule demonstrating installation of as much of the screening as early in the construction process as is feasible in coordination with project construction. Landscaping should include native

species that are drought tolerant and not modify or provide for habitat for predator species such as ravens;

- B. Plant establishment procedures, including a plan for routine care and monitoring of plant materials will be provided by the project owner to each landowner. The project owner will work with landowners to ensure proper and diligent watering, weeding and maintenance. The project owner will replace plants that fail to thrive for a period of five years from installation; and
- C. Documentation that a landowner declines to have landscape screening installed on his property in the event they choose not to participate in the screening program.
- D. The plan shall not be implemented until the project owner receives final approval from the CPM.

Verification: The screening plan shall be submitted to the CPM for review and approval at least 90 days prior to installation.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM. The review of any subsequent revisions shall be completed by the CPM within fifteen (15) days of receipt of the revisions.

The project owner shall notify the CPM within seven days after completing the screening installation that the screening is ready for inspection.

The project owner shall report maintenance activities, including replacement of plants that fail to thrive for the previous year of operation for a period of five years, in each Annual Compliance Report.

VIS-4 The project owner shall develop and implement a screening plan that reduces direct visibility of the SCA mirrors to traffic on Harper Lake Road north of Lockhart Road, to traffic on Lockhart Road from Harper Lake Road to the eastern boundary of the Beta solar field, to residents living within one mile of the west boundary of the Beta solar field, and to visitors of the Harper Dry Lake Watchable Wildlife Area. The plan shall utilize sufficient setbacks of the SCAs from roads and 10-foot high slatted fencing to eliminate public exposure to hazardous levels of reflection, and to minimize public exposure to nuisance glare. The screening shall be designed to minimize glare from the project as seen by motorists and local residents during all times of year and periods of the day. Fence slats shall be of a non-reflective tan or other color designed to blend with the visual background in order to minimize color contrast of the fence.

The project owner shall submit to the CPM for review and approval a screening plan providing proper implementation that will satisfy these requirements. The plan shall include:

- A. A detailed plan at a reasonable scale such that all information is legible, and elevations and/or section drawings showing the relationship of the screening to the road and SCAs from locations on Lockhart Road. The plan, elevations and/or sections shall clearly demonstrate how the glare-reducing requirements stated above shall be met. The plan shall provide a detailed installation schedule demonstrating installation of as much of the screening as early in the construction process as is feasible in coordination with project construction;
- B. Maintenance procedures, including a plan for routine annual or semi-annual debris removal and repair of slatted fencing for the life of the project;
- C. A procedure for monitoring and replacement of damaged screening for the life of the project; and
- D. The plan shall not be implemented until the project owner receives final approval from the CPM.

Verification: The screening plan shall be submitted to the CPM for review and approval at least 90 days prior to installation.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM. The review of any subsequent revisions shall be completed by the CPM within fifteen (15) days of receipt of the revisions.

The project owner shall notify the CPM within seven days after completing the screening installation that the screening is ready for inspection.

The project owner shall report maintenance activities, including replacement of damaged or destroyed screening for the previous year of operation in each Annual Compliance Report.

Waste Management

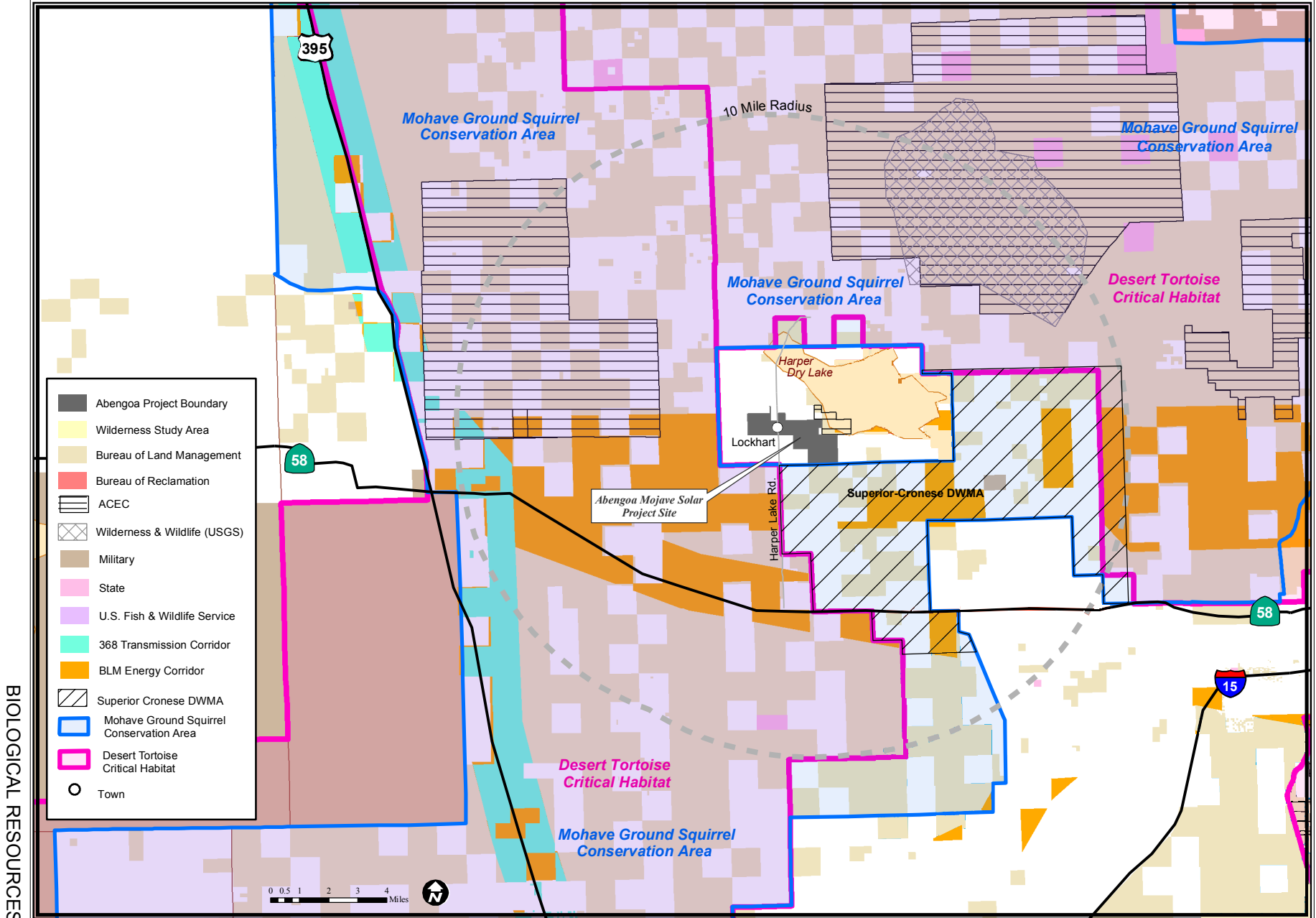
WASTE-1 Prior to the removal of any underground storage tanks (USTs) found on site, the project owner shall submit a copy of the information typically required to obtain a permit to the San Bernardino County Fire Department for review and comment. The CPM and the San Bernardino County Fire Department must acknowledge receipt of the plans for the removal prior to CPM approval. The

project owner shall obtain approval for removal of all located USTs from the CPM.

Verification: No less than sixty (60) days prior to commencement of site mobilization, the project owner shall provide the plans to remove the underground storage tanks to the CPM for review and approval. The project owner shall inform the CPM via the monthly compliance report, of the data when all USTs were removed from the site.

BIOLOGICAL RESOURCES - FIGURE 1

Abengoa Mojave Solar Project - Harper Dry Lake Land Management Areas and Project Vicinity



BIOLOGICAL RESOURCES