

**CALIFORNIA ENERGY COMMISSION**1516 NINTH STREET  
SACRAMENTO, CA 95814-5512

Mr. Jeff Hansen  
CE Obsidian Energy, LLC  
302 South 36<sup>th</sup> Street, Suite 400  
Omaha, Nebraska 68131-3845

January 29, 2003

**RE: SALTON SEA UNIT #6 PROJECT (02-AFC-2) DATA REQUESTS**

Dear Mr. Hansen:

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission (Energy Commission) staff requests that CE Obsidian Energy, LLC supply the information specified in the enclosed data requests. This filing includes reissue of three corrected visual resources data requests (numbers 136, 137, and 139) that were submitted on January 8, 2003, and eight additional data requests resulting from the workshop held on January 8 and 9, 2003.

The subject areas addressed in the additional eight data requests (140 through 147) are air quality, visual plume assessment, and water resources. These data requests are supplemental to those previously submitted and are based upon site visits, discussions with other agency staff, and additional review of information provided by the applicant. The information requested is necessary to understand the project, assess whether the project will result in significant environmental effects and conform with applicable laws, ordinances, regulations and standards, and to assess project alternatives and mitigation measures.

Written responses to the enclosed data requests are due to the Energy Commission by February 28, 2003, or at a later date agreed upon by the Energy Commission staff. If you are unable to provide the information requested, or object to providing it, you must notify Chairman William J. Keese, Presiding Member of the committee assigned to the project, and myself within 10 days of receiving these requests, stating your reason for delay or objection.

If you have any questions regarding the enclosed data requests, please call me at (916) 651-8853.

Sincerely,

Robert Worl  
Siting Project Manager

Enclosure

cc: POS List  
Agency Distribution List

**Salton Sea Unit #6 Geothermal Power Project (02-AFC-2)  
Data Requests**

**Technical Area: Visual Resources**

**Author:** James Adams

**CORRECTED VISUAL RESOURCES DATA REQUESTS 136, 137, AND 139**

There was a factual error and a technical lack of clarity in the previously submitted visual resources data requests number 136, 137, and 139. The following data requests are resubmitted showing the corrections in underline/strikeout.

**BACKGROUND**

Staff has identified the need for the establishment of three new key observation points and additional current and photo-simulations. These will be used to determine if there could be any significant visual impacts on local residents, travelers, or visitors to the Sonny Bono Salton Sea National Wildlife Refuge.

Well over 10,000 people visit the Salton Sea Refuge Complex each year. The project would be visible from the top of Rock Hill and staff needs to consider the amount of the view disruption caused by the project plumes from this public observation area.

**REVISED DATA REQUEST**

136. Please provide a high-quality 11" by 17" color photo-simulation, at life-size scale, from a location 200 yards east of the SR-444-~~86~~ point of intersection with the proposed IID interconnection line proceeding to the L-line interconnection. Also provide a current view without the proposed lines at the same size and scale.
137. Please provide a high-quality 11" by 17" color photo-simulation, ~~180-degree panoramic view with the proposed project at center, during average winter~~ to include the proposed project (at life-size scale), Signal Mountain, and predicted water vapor plumes during reasonable worst case meteorological conditions, from the public viewing area at the top of Rock Hill. Also provide a current view at the same size and scale. Please provide the dimensions of the plumes depicted in the simulation.
139. Please provide high-resolution electronic versions (PDF format acceptable) on a CD of ~~all the figures presented in the visual section of the AFC, and the figures prepared in response to these data requests.~~

**Salton Sea Unit #6 Geothermal Power Project (02-AFC-2)  
Data Requests**

**Technical Area: Air Quality**

**Authors:** William Walters

**BACKGROUND**

Cooling Tower Exhaust Partitioning – Ammonia

The applicant indicates that the H<sub>2</sub>S contained in the condensate stream, which is routed to the oxidizer boxes in cooling tower cells “A” and “K”, is primarily emitted from only two cells of the cooling tower. Staff needs additional information to determine the amount of ammonia emission partitioning in the cooling tower.

**DATA REQUEST**

140. Please indicate the expected emission partitioning of ammonia in all of the cooling tower cells.

**Salton Sea Unit #6 Geothermal Power Project (02-AFC-2)  
Data Requests**

**Technical Area: Visual Plume Assessment**

**Authors:** William Walters

**BACKGROUND**

Existing Cooling Tower Description

Staff's visual observation of the existing cooling towers in the Salton Sea geothermal area has shown that some of these cooling towers have visual plumes, albeit not large plumes, under ambient conditions where staff would not expect see visual plumes (i.e. relatively high temperature and low relative humidity). Staff needs additional description of the existing cooling towers to determine whether the unexpected plume occurrence is a function of the design of the existing cooling towers, or whether the incorporation of the condensate stream in the cooling tower or other design parameter common to the existing and proposed cooling tower, is the cause for this phenomena.

**DATA REQUEST**

141. Please describe the design of the existing cooling towers; in particular describe differences between the design of the existing cooling towers and the cooling tower being designed for SSU6.
142. Please indicate if the phenomena of plume occurrence during high temperature, low relative humidity conditions may also occur at the SSU6 cooling tower, and please indicate if there is a potential cause for this phenomena, if the specific existing cooling tower designs are not the cause.

**Salton Sea Unit #6 Geothermal Power Project (02-AFC-2)  
Data Requests**

**Technical Area: Soil and Water Resources**

**Author:** Mike Krolak

**BACKGROUND**

The Salton Sea Unit 6 (SSU6) Project's average annual water use is expected to total approximately 293 acre-feet per year (AFY). According to Data Adequacy Response WATER-11, the vast majority of this water (290 AFY) will be used for cooling and diluting the brine prior to reinjection. This amount is based on the design geothermal brine salinity of 23.5%. If the salinity of the brine increases, the SSU6 Project will require more water for project operation. Page 5.4-8 of the AFC states that if the brine were to reach a salinity of 25.0%, the project would require approximately 987 AFY, 3.4 times the amount needed at the design salinity. If the salinity of the brine were lower, at 21 percent, then the project would require only 2.3 AFY, less than one percent of the water needed at the design salinity.

Two tables were provided in Data Response 78 that further describe fresh water use for the project. The first table describes the fresh water use for the project at the design salinity of 23.5 percent. At this salinity, the applicant stated that "water consumption for this process would be constant throughout the year," at 180 gallons per minute (gpm). This rate would be constant throughout the year, regardless of ambient temperatures.

The explanation for the second table states "In the unlikely event that the brine salinity is 25 percent, IID water consumption of the plant would vary based on thermal conditions and 987 AFY represents the total annual consumption." The table shows that water use at 25 percent salinity would range anywhere from 180 gpm to 1198 gpm.

These tables indicate that fresh water use will fluctuate according to ambient temperatures when the brine is at 25% salinity, but will not be affected by thermal conditions when the brine is at 23.5% salinity. Staff requires further clarification of this issue to determine how much fresh water will be used by the project and under what circumstances this water will be used.

**DATA REQUESTS**

143. Please discuss why a 1.5% increase in brine salinity necessitates 3.4 times as much fresh water for the process, and why a 2.5% decrease requires less than one percent of the fresh water demand at design salinity. Please include all calculations, assumptions, and appropriate references.
144. Please explain why fresh water consumption fluctuates according to thermal conditions at 25% salinity, but not during other conditions. Please include all calculations, assumptions, and appropriate references.
145. Would the fresh water use vary according to thermal conditions if the brine were at a salinity less than 23.5%, such as 21%? At what level(s) of salinity does the variation based on thermal conditions begin?

**Salton Sea Unit #6 Geothermal Power Project (02-AFC-2)**  
**Data Requests**

**BACKGROUND**

Data response 75 states that “there would be a few days each summer when the daily maximum temperature exceeds 113 F. In this case, augmentation [from the canal water supply] may be required depending on the operating circumstances of the power plant.” This implies that fresh water will be used for cooling under certain operating conditions. However, during the Data Response Workshop on January 8, 2003, the applicant stated that revisions would be made to the water balance diagrams regarding this issue. Staff requires clarification to determine how fresh water will be used by the project.

**DATA REQUEST**

146. Please provide revisions to the water balance diagrams that confirm whether fresh water will be used for cooling the SSU6 Project. Please provide any associated explanations that clarify the source and volume of fresh water that will be used for the project’s needs.

**BACKGROUND**

Data Response 80 discusses the City of Westmorland’s treated wastewater supply. The Response for Section (i), Part 1 states that the discharge from the City of Westmorland averages 0.37 million gallons per day (MGD).

In October of 2002, the City of Westmorland completed upgrades in their water treatment facility that included increasing the capacity from 0.375 MGD to 0.5 MGD, as well as increasing the treatment facilities to improve effluent quality such as eliminating open-air treatment ponds and adding an effluent disinfection system. Staff requires further clarification for an analysis of alternatives.

**DATA REQUEST**

147. Did the alternatives analysis provided in Data Response 80 include these upgrades to the Westmorland facility? If not, please provide an analysis of the Westmorland treated effluent incorporating new upgrades for both capacity and effluent quality.