From: Camille Champion <Camille.Champion@tesserasolar.com>
To: Casey Weaver <CWeaver@energy.state.ca.us>
Date: 2/19/2010 12:25 PM
Subject: Responses to questions
Attachments: Camille Champion.vcf; NM Map with Cadiz Well.PDF; Response to Casey Weaver 02.19.2010.doc

Casey-Attached please find responses to your questions from the emails earlier this week. Please let me know if you are in need of anything else.

Thanks.

[cid:image001.jpg@01CAB166.F9978DC0]

February 19, 2010

Maintenance

Question:

What about waste water generated at the maintenance facility? With 35,000 engines, some will need repairs. It is likely there will be some waste water (at least oily) generated. Typically all runoff from paved surfaces at plants goes through (at a minimum) an oil water separator.

The two waste sources you mention below do not address this. I understand sanitary waste will go through septic tank and leachfield (at high volumes too...), and that the waste product from water treatment (demineralizer) will go to evap ponds. But it is the waste water generated from plant operation (primarily equipment maintenance/repair, spills, vehicle drips) that I was wanting clarification. I doubt you want to say runoff from the maintenance buildings flows directly to the native channels.

Answer:

The maintenance process for SunCatcher™ based projects with associated balance of plant equipment (e.g., electrical collection systems, hydrogen supply systems, controls, meteorological stations, etc.) is based on a component replacement philosophy performed at the time of failure or at specified preventative timing. The majority of repairs on the Stirling engine and associated systems (e.g., cooling system, hydrogen gas management system, generator, etc.), collectively the Power Conversion Unit (PCU) are performed in the onsite maintenance facility. The PCUs are removed from the pedestals in the field, replaced with a spare PCU from inventory, and transported to the maintenance facility for troubleshooting and repair. The process for any repair of the PCU requiring disassembly of the Stirling engine is preceded by draining the glycol based radiative coolant and the lubricating oil from the engine. All fluids removed from the engines are captured for recycling. The lubricating design of the engine is a low volume, low pressure system that poses low risk for leakage during on-sun, on-pedestal normal operations.

Retention Ponds

Question:

I talked with Richard Booth and Lahontan last week and he said there was a suggestion from someone with "Solar 1" that the water from Cadiz is sufficiently pure, that no treatment is necessary and ponds would not be required. While the Cadiz water appears to be of higher quality than onsite groundwater, it will still be necessary to treat it if mirror washing requires 20 ppm TDS or less. Do you know if you are proposing an alternative treatment/disposal option?

Response:

The main service complex will have two evaporation ponds installed to handle the RO system discharges. These ponds are being designed with a PVC liner, a sand layer and then a concrete cover.

There will be three monitoring wells installed one upstream and two downstream to verify water quality. Storm water runoff will not be mixed with the RO discharge water. The size of the basins is dependent upon the TDS of the raw water.

Cadiz Water

Question:

Was the oil speciated to confirm its lubrication oil that leaked from bad seals and not representative of an aquifer problem? Is it a reportable quantity that the Regional Board needs to know about? Is the tank shown in pictures of the well house a lubricating oil supply tank or a diesel fuel tank? Is the pump and electric pump with electricity supplied through lines or from a generator, or is it a diesel pump?

Response:

The well pump is powered by electricity through lines and not a diesel-powered generator. There is lubrication oil (the tank shown in the picture inside the well house) that lubricates the turbine and it is our understanding that there is a leaky seal and some oil has accumulated in the casing. The oil has not been analyzed and speciated. There are no known potential sources of contamination to the aquifer in the vicinity. The volume of oil is thought to be so small as not to be a reportable quantity.

Data Needs - Updated Water Table

According to the applicant, the water demands have been reduced to 20 AFY.

Please adjust the table below to reflect the new water use estimates.

Soil & Water Table XXX

Operations Water Usage Rates

Water Use	Daily Average (gallons per minute)	Daily Maximum (gallons per minute)	Annual Usage (Acre Feet)
Equipment Water Requirements			
SunCatcher Mirror Washing	8.67	14.47	13.98

Water Treatment System Discharge			
Brine to Evaporation Ponds	0.52	0.83	0.84
Potable Water Use			
For drinking and sanitary water requirements	1.61	1.94	2.59
Dust Control			
Groundwater for dust control during operations	1.55	3.10	2.50
Hydrogen Generation			
For hydrogen gas extraction	0.14	0.28	0.23
Totals	**12.49**	**20.64**	**20.14**

Question: Has there been a change to the plans described in the AFC regarding storing, treating and ultimately using groundwater at the site?

Response: There have been no changes.

Question: Please provide a copy of the FEIR/FEIS for the proposed Cadiz Groundwater Storage and Dry-year Supply Program.

Response: A CD will be provided.

Question: The memo discusses the Chambless well from which Mr. Chambless provides water for sale. What limitations of use are imposed on the Chambless well? What is the theoretical maximum use of that well?

Response: Mr. Chambless indicated that some local residents buy water from him for drinking purposes and it is a convenience that he provides for the community. It is not a major business enterprise. We are not aware of any limitations of use imposed on his

well or its theoretical maximum use. However the area is very sparsely populated (less than 100 residents), thereby limiting the number of local customers and water use from his well. Therefore the amount of water used annually from his well appears to be very small. The diameter of the well is only 4 or 6 inches, much smaller than the 16-inch diameter of the proposed project well and this also limits the rate at which water can be extracted using the Chambless well.

Question: If the Chambless well were utilized to its theoretical maximum, how would the proposed project well be affected?

Response: The Chambless well is at least three miles from the proposed project well, and its continuous pumping would not be expected to have a significant effect on the proposed project well.

Question: The memo indicates that Attachment A provides a map that shows the proposed project well's location relative to the Mojave Trails National Monument boundary. Attachment A is a driller's log and no such map was provided. Please provide a map that shows the proposed well's location relative to the Mojave Trails National Monument boundary.

Response: A map showing the approximate location of the proposed project well is attached.

2010 California Desert Protection Act Overview
December 21, 2009

This map prepared at the request of Senator Dianne Feinstein