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DATE	AUG 25 2008
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August 25, 2008

Ms. Melissa Jones
Executive Director
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Carrizo Energy Solar Farm (07-AFC-8)
Applicant's Responses to CEC Data Requests 101-112
URS Project No. 27658060.01800

Dear Ms. Jones:

On behalf of Ausra CA II, LLC (dba Carrizo Energy, LLC), URS Corporation Americas (URS) hereby submits the Applicant's Responses to CEC Data Requests 101-112 (Carrizo Energy Solar Farm 07-AFC-8).

I certify under penalty of perjury that the foregoing is true, correct, and complete to the best of my knowledge. I also certify that I am authorized to submit the Applicant's Responses to CEC Data Requests 101-112 on behalf of Carrizo Energy, LLC.

Sincerely,

Angela Leiba
Project Manager

AL:ml



RESPONSES TO CEC DATA REQUESTS (#101-112)

**APPLICATION FOR CERTIFICATION (07-AFC-8)
Carrizo Energy Solar Farm
Carrizo Energy, LLC**



**Submitted to:
California Energy Commission**



**Submitted by:
Carrizo Energy, LLC**

With Support from:

URS

1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108

August 2008

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TECHNICAL AREA: CULTURAL RESOURCES

Data Request 101:

Please have a qualified architectural historian provide DPR 523 forms, equivalent in detail to those provided for the King and Cavanaugh farms, for the Northern Carrizo farms and farming-associated features in the list below. Note that the names of the farms were compiled from a 1941 agricultural survey map, but the locations should be sufficient to identify the farms for which information is requested.

- a. Werdon Property T29S R17E Section 11 SE 1/4;
- b. Cooper Property T29S R18E Section 24 NE 1/4 (near section line) on Bitterwater Rd.;
- c. Van Metre Property T29S R18E Section 24 SE 1/4 on Bitterwater Rd.;
- d. Lewis Property T29S R18E Section 30 SE 1/4 and Section 29 NW 1/4;
- e. Travers Property T30S R18E Section 4 SE 1/4;
- f. Cavanaugh Property (different from Cavanaugh ranch on the proposed laydown area) T30S R18E Section 1 SW 1/4;
- g. No name property T29SR18E Section 22 SW 1/4;
- h. "Red Tank" T30S R18E Section 3 NW 1/4 (shows on 1941 map as a well with an associated building; not clear if it is a farm);
- i. Major rural roads dating before 1950; and
- j. Earthworks associated with farming or ranching before 1950.

Response:

Data Request 101 was modified on July 29 and 30, 2008 as the result of a conversation between Beverly E. Bastian (CEC) and Jeremy Hollins (URS Architectural Historian) (see Attachment 1).

On August 6 and 7, 2008, Hollins completed a reconnaissance level historic architecture survey of eight properties identified by Bastian in the modified Data Request 101 (Attachment 1). CEC Staff requested investigators survey and evaluate the eight properties as potential contributors to a cultural landscape that is potentially significant under CRHR Criterion A for its association with wheat-farming in the northern Carrizo Plain and a period of significance from 1900 to 1967. Because the reconnaissance survey occurred from public vantage points and public roads or areas where views of properties were obstructed (e.g., tree overgrowth or buildings were setback too far from the road), Hollins utilized available information to survey the property. In addition to the reconnaissance survey, supplemental research was conducted at the County of San Luis Obispo Planning and Building Departments, Assessor Office, California Polytechnic State University-San Luis Obispo Kennedy Library, and the City-County of San Luis Obispo Library Local History Room on August 6 and 7, 2008. Hollins recorded and evaluated the properties on the appropriate DPR 523 series forms, which will be submitted as the forthcoming Attachment 2 to modified Data Request 101.

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Based on the reconnaissance survey and supplemental historic research, seven of the surveyed properties do not appear to be potential contributors to a cultural landscape associated with wheat-farming in the northern Carrizo Plain with a period of significance from 1900 to 1967. Due to restricted access to the Lewis Property and that property's distance from a public vantage point along a public road, the Lewis Property could not be properly evaluated and, therefore, it is unknown if it is a potential contributor to a cultural landscape. Overall, the surveyed properties have generally been impacted by recently completed infill development, changes in use and continuity, alterations and replacements of key elements and components, neglect and environmental effects, and loss of historic and structural integrity. These impacts have affected the properties' abilities to convey a specific historic period, theme, or feeling.

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REPORT OF CONVERSATION Page 1 of 2



<i>Energy Facilities Siting and Environmental Protection Division</i>		FILE: 07-AFC-8
		Project Title: Carrizo Energy Solar Farm
<input checked="" type="checkbox"/> Telephone: received calls	<input type="checkbox"/> Meeting Location:	
NAME: Beverly E. Bastian	Date 7/29 and 7/30/08	Time 8:45 AM and 3:00 PM
WITH: Jeremy Hollins, Architectural Historian, URS (applicant's environmental consultant)		
SUBJECT: Modification of the Scope of the Information Requested in Staff's Cultural Resources Round 3 Data Request #101		
<p>On 7/29/08, Mr. Hollins called staff to clarify the details of the additional research staff requested in Data Request # 101. He first asked about the 1941 agricultural survey map referenced by the Data Request. Staff agreed to provide the source of the map and also to try to send him a copy so he could compare the list of properties he had already recorded with the list that staff compiled from the 1941 map. Additionally, Mr. Hollins explained the following about the eight previous recordations he completed for the CESF project:</p> <ul style="list-style-type: none"> • They represent all the built environment resources located within 0.5 miles of the CESF project's location, so he would not have recorded any of the farms on staff's list that are farther away. • The King and Cavanaugh properties received more detailed recordation in the field because he had on-site access to them. The six other previously recorded resources were recorded from the vantage point of public roads and so have less detail. • The field work to record the additional properties about which staff requested information could be accomplished fairly soon, but the archival research on those properties would take longer due to the need to work within the office hours of the holders of the relevant records. <p>On 7/30/08, via e-mail, staff sent Mr. Hollins an electronic copy of the 1941 agricultural survey map. After reviewing that map, Mr. Hollins called staff to report that only two resources were on both staff's list of ten resources and the list of eight resources he had previously recorded, so staff's Data Request would entail new recordation of eight resources.</p> <p>In light of this, and considering the access limitations Mr. Hollins had explained in his previous telephone call, staff agreed to modify the scope of the information requested in Data Request # 101.</p> <p>Modification 1: The list of farms for which staff requests information is reduced to the following:</p> <ol style="list-style-type: none"> Werdon Property T29S R17E Section 11 SE Coopers Property T29S R18E Section 24 NE (near section line) on Bitterwater Rd. Van Metre Property T29S R18E Section 24 SE on Bitterwater Rd. Lewis Property T29S R18E Section 30 SE and Section 29 NW Travers Property T30S R18E Section 4 SE Cavanaugh Property (different from Cavanaugh ranch on the proposed laydown area) T30S R18E Section 1 SW 		



- g. Farm (no name or building indicated) in T29S R18E, middle of Section 22 at the jog in the road (This farm is shown on 1966 USGS quadrangle map, and staff's field observation of it suggests it dates to the Period of Significance despite not being shown on the 1941 map.)
- h. "Red Tank" T30S R18E Section 3 NW (shows on 1941 map as a well with an associated building; not clear if it is a farm)

Modification 2:

The field recordation of these resources is limited to reconnaissance-level observation only, from public roads, but staff requests the following, if possible:

- List of buildings and structures, particularly those, if any, related to wheat farming, such as conveyor equipment, storage tank-silos, and raised-platform barns.(For guidance, see Marijean Eichel's M.A. 1971 M.A. thesis, p. 37, for a description of the characteristic buildings and structures of a wheat-farming farmstead in the northern Carrizo Plain.);
- Representative photography of as many buildings and structures at each farm as possible
- Observations regarding added buildings and structures unrelated to wheat farming, and removals, if discernible, of buildings and structures related to wheat farming;
- Evaluation of these resources that considers their potential as contributors to a cultural landscape (historic district), potentially significant under California Register of Historical Resources Criterion A, with a Period of Significance of 1900-1967, and a primary theme of dryland wheat farming;
- Staff suggests some guidelines for the evaluation of the integrity of these resources with respect to the Period of Significance and their ability to exemplify the primary theme of wheat farming under Criterion A. The requirements for integrity of materials, workmanship, and design under Criterion A are not as stringent as they would be under Criterion C. For properties contributing to a northern Carrizo Plain cultural landscape potentially significant under Criterion A, disuse and dilapidation are not disqualifying impairments, even to the point of being structurally unsound, but not to the point of total collapse. If the preponderance of buildings and structures at each of these farms is able to convey the theme of wheat farming, the farm has sufficient integrity to be a contributor to the potential cultural landscape under Criterion A. Either the addition of a number of other buildings and structures unrelated to wheat farming at any of these farms, however, or the absence/removal of wheat-farming-related buildings and structures, would constitute a lack of integrity under Criterion A.

Modification 3:

Mr. Hollins should submit to staff as complete as possible DPR 523 "Primary" and "Building, Structure, and Object" forms for these resources, with attached representative photographs. But detailed recordations equivalent to that for the King and Cavanaugh properties are not expected.

Modification 4:

Staff only needs historical information about the listed farms that predates 1967.

<p>cc: John Kessler, Jeremy Hollins, Michael McGuirt, Dorothy Torres, Amanda Blosser, Rick York</p>	<p>Date: 7/31/08</p>	<p>Signed: Name: Beverly E. Bastian</p>
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TECHNICAL AREA: LAND USE

Data Request 102: Please state whether the applicant has obtained San Luis Obispo County's position on the consistency of the proposed manufacturing building with its General Plan and Land Use Ordinance. If so, please provide the specifics of the County's position on this temporary use.

Response: In the Supplement to the CESF AFC, Section 1.4.3 Manufacturing Process, it states that the manufacturing building will be used for assembly only activities related to construction of the CESF. Although the building in question is referred to as a "manufacturing building" in the Supplement, there is actually no manufacturing that will take place in this building. Manufacturing will take place at the Applicant's manufacturing facility in Nevada and project components will be transported to the CESF onsite manufacturing facility for final assembly.

Per telephone communication between John McKenzie (San Luis Obispo County) and Seth Hopkins (URS) on August 4, 2008, Mr. McKenzie has confirmed that the County would consider the onsite manufacturing to be an activity related to the construction of CESF apparatus. According to section 22.06.030 of the Land Use Ordinance (LUO), electrical generation is an allowable use in the Agriculture district subject to a Conditional Use Permit (CUP) required by the specific use standards stated in section 22.32.020 of the LUO. According to the County, all construction related activities would be subject to the same CUP for the CESF Project, and therefore consistent with the General Plan and LUO.

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TECHNICAL AREA: LAND USE

Data Request 103: If the proposed manufacturing use would normally require the issuance of a Conditional Use Permit or any other permit, please provide documentation of the specific findings the County would make, and the conditions (similar to what was included as part of discussions with staff) that San Luis Obispo County would require for this use.

Response: Per telephone communication between John McKenzie (San Luis Obispo County) and Seth Hopklins (URS) on August 4, 2008, Mr. McKenzie has confirmed that the County would not require an additional CUP or MUP for the onsite manufacturing building (see also Applicant's response to Data Request 102, above). Assembly activities would be allowed as a construction related activity as part of the project CUP. Conditions that would apply relate to the use of hazardous materials and removal of waste materials from the site to ensure compliance with all applicable regulations. Additionally, a bond would be required to be posted with the County ensuring full demolition of the manufacturing building and restoration of the temporary manufacturing building site.

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TECHNICAL AREA: NOISE AND VIBRATION

Data Request 104: Please evaluate the noise impacts of the proposed nighttime activities at noise monitoring locations ML01, ML02, ML03, ML07, SR10, APN 072-051-026 (Strobridge), APN 072-3011-001 (Bell Future Residence), and APN 072-311-004 (Bell Existing Residence) and provide the resultant predicted increases in the ambient noise levels at these locations in terms of L_{eq} , L_{10} , L_{50} , and L_{90} .

Response: The following paragraphs describe the analysis of potential noise impacts for the proposed nighttime Project operation and maintenance activities at noise monitoring locations ML01, ML02, ML03, ML07, SR10, APN072-051-026 (Strobridge, taken from the edge of the property), APN072-301-001 (Bell Future Residence), and APN072-311-004 (Bell Existing Residence). The analysis results are discussed with respect to ambient noise levels, predicted nighttime Project noise levels, and cumulative (i.e., existing ambient plus Project) noise levels at these locations in terms of L_{eq} , L_{10} , L_{50} , and L_{90} .

In summary, among the eight locations listed above, predicted nighttime L_{eq} from Project operation would exceed 45 dBA (and exceed the 5dB increase over existing ambient as allowed by the CEC) only at ML02. However, as described in Section 5.12.1.2 of the Project AFC, ML02 was meant to represent the existing PG&E Carrizo Plain Substation and is thus not associated with a noise-sensitive receiver. Thus, the noise impact at ML02 and the seven other locations is considered less than significant.

ANALYSIS – EXISTING AMBIENT SOUND

Nighttime ambient sound was measured during the June 13-14, 2007 and June 3-4, 2008 site vicinity sound surveys, with results appearing in either Table 5.12-2 of the Project AFC or in the response prepared for CEC Data Requests 82-83. For example, at the Strobridge property, ambient noise was measured from 12:30am to 1:30am on the morning of June 4th, 2008. This nighttime measurement was attended by an operator the entire hour, so that environmental observations regarding audible events or perceptible sound sources could be made. At this location, and while there was an observed lack of construction and agricultural equipment operation, the measured ambient sound level consisted of noted sources such as insects and rustling leaves.

ANALYSIS – SOURCE DESCRIPTION

The anticipated nighttime Project sound generating sources involve routine solar reflector cleaning activity, occupied building HVAC, and limited system operation at the Power Block.

Cleaning Reflectors on the Solar Farm

The proposed cleaning process involves a manually operated brush or wiper, which by itself is not anticipated to generate much noise. However, getting

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maintenance personnel to the reflector requires a vehicle (e.g., a pick-up truck) and a portable lighting plant would be deployed at the site where cleaning work would occur. It was assumed that such a pick-up truck would be idling, or undergo frequent starts and stops having equivalent continuous sound, at a location near a line of reflectors approximately 120' distant from a position along the Project property line which is, in turn, perpendicularly distant from the closest noise-sensitive receiver. A sample scenario is illustrated in the figure below. It was assumed that the lighting plant has a generator and both are mounted inside the cargo bed of the pick-up truck. According to the Applicant, the cleaning activity at this line of reflectors could last approximately 2-3 hours. The sound pressure level of the pick up truck idling at 15 feet would be 81 dBA. The sound pressure level of the portable lighting would be 100 dBA at 1 meter.

Operating HVAC and Mechanical Equipment at the Power Block

It was assumed that an air-conditioning system will be part of the design of the occupied Administration building and Control Tower. While design details and equipment selections are as yet to be determined, the size of these air-conditioning systems would, based on reasonably expected refrigeration load to maintain interior comfort, be about 5 tons and 1 ton, respectively. For the analysis it was also assumed there would be two air-conditioning systems (one for redundancy) at each building. The following table shows sample condenser sound power levels (PWL) of each air-conditioning system, based on Carrier engineering data (considered representative of similar offerings by other vendors).

Air-conditioning Condenser	PWL per Octave-Band Center Frequency (Hz) in dBA							dBA
	<u>125</u>	<u>250</u>	<u>500</u>	<u>1000</u>	<u>2000</u>	<u>4000</u>	<u>8000</u>	
1-ton (Carrier Model 38QRC018)	51.0	57.0	62.0	62.5	62.0	56.5	47.5	67.2
5-ton (Carrier Model 38QRC060)	62.5	67.5	71.0	68.0	67.0	63.5	54.5	73.6

Ventilation fans were assumed for the Shop/Warehouse building, Maintenance building, and Steam Turbine Generator (STG) structures. The predictive analysis assumed four (4) ventilation fans on the Shop/Warehouse and Maintenance buildings, and eight (8) for the STG structures. The following table is the PWL of each ventilation fan, based on engineering data from Cook (considered representative of similar offerings by other suppliers).

Ventilation Fan	PWL per Octave-Band Center Frequency (Hz) in dB								dBA
	<u>63</u>	<u>125</u>	<u>250</u>	<u>500</u>	<u>1000</u>	<u>2000</u>	<u>4000</u>	<u>8000</u>	
Axial Exhaust Fan (Cook Model 16A11DA)	96	101	91	85	78	72	66	62	89

The feedwater pump is also assumed to be in operation during the nighttime to keep a minimal defrosting flow in the solar field. The following values are the octave band center frequency (OBCF) PWL of the feedwater pump.

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Feedwater Pump	PWL per Octave-Band Center Frequency (Hz) in dB									dBA
	<u>31.5</u>	<u>63</u>	<u>125</u>	<u>250</u>	<u>500</u>	<u>1000</u>	<u>2000</u>	<u>4000</u>	<u>8000</u>	
(URS estimate)	96	98	100	100	100	100	100	97	90	105.6

ANALYSIS – METHODOLOGY

As described in Section 5.12.2.2.1 of AFC, the same Cadna/A software and its ISO-9613 based prediction method was used to help estimate the nighttime potential noise impacts. In order to predict L_{eq} , L_{10} , L_{50} , and L_{90} , which are statistical sound metrics that indicate a certain sound level L_x would be exceeded X% of the time during a measurement period, at each of the aforesaid noise monitoring locations, the operational duration of each previously described source was considered. It was assumed that the HVAC systems and feedwater pump at the Power Block would be in operation throughout the nighttime period. Therefore, the sound levels from these mechanical systems would be contributing to the L_{eq} , L_{10} , and L_{90} acoustical descriptors. Since the reflector cleaning activity would be limited to up to 3 hours (approximately 25% of nighttime period) at a location near the Project property line and a corresponding nearest noise-sensitive receiver, the sound levels from this activity might reasonably be described by the L_{10} descriptor if no louder noises occurred more than 10% of the total nighttime duration of twelve hours (i.e., 7pm to 7am). It should be noted that no activities—aside from those at the Power Block—are expected to occur approximately 50% of this nighttime period; therefore, the statistical sound level descriptor L_{50} was not predicted for the analysis.

ANALYSIS – RESULTS

The following table details the calculation results for predicting potential noise impacts from Project nighttime activities. Note that L_{10} represents the hourly L_{eq} with both the reflector cleaning activity and mechanical equipment in operation. L_{90} represents the hourly L_{eq} with no reflector cleaning activity (or, the cleaning activity is taking place at a location within the Project boundary but far from the property line nearest to the studied location) and only the continuously-running Power Block building HVAC and feedwater pump in operation. L_{eq} or “equivalent” represents the averaged sound level throughout the 12-hour nighttime period.

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Location	Existing Sound Level				Predicted Nighttime Sound Level				Cumulative Sound Level				Difference (Cumulative – Existing)			
	L _{eq}	L ₁₀	L ₅₀	L ₉₀	L _{eq}	L ₁₀	L ₅₀	L ₉₀	L _{eq}	L ₁₀	L ₅₀	L ₉₀	L _{eq}	L ₁₀	L ₅₀	L ₉₀
ML01	43	45	41	37	26.9	31.9	-	21.4	43.1	45.2	-	37.1	0.1	0.2	-	0.1
ML02	43	43	42	42	54.4	60.4	-	30.0	54.7	60.5	-	42.3	11.7	17.5	-	0.3
ML03	54	58	50	32	27.7	32.2	-	23.6	54.0	58.0	-	32.6	-	-	-	0.6
ML07	43	45	42	39	11.6	14.8	-	9.1	43.0	45.0	-	39.0	-	-	-	-
SR10	43	45	41	37	35.6	41.4	-	24.1	43.7	46.6	-	37.2	0.7	1.6	-	0.2
Strobridge	46	50	43	35	32.6	35.9	-	30.6	46.2	50.2	-	36.3	0.7	1.6	-	0.2
Bell Existing Residence	32	35	31	25	17.2	20.6	-	14.9	32.1	35.2	-	25.4	0.1	0.2	-	0.4
Bell Future Residence	30	32	30	28	20.0	23.7	-	17.4	30.4	32.6	-	28.4	0.4	0.6	-	0.4

Note that the “Cumulative” sound level the above table is a *logarithmic* sum of the Existing and Predicted sound levels, which one might also describe as the “future ambient” or “Existing plus Project”. The “Difference” value, however, is an *algebraic* difference between the Existing and the Cumulative levels, in order to evaluate potential increase of ambient sound as compared to Existing measured levels.

Based on State of California and San Luis Obispo County guidelines, environmental consequences of the Project would be considered significant if:

1. Noise from Project operations exceeds 50 dBA L_{eq} hourly sound levels at a noise sensitive land use between 7:00 a.m. and 10:00 p.m.
2. Noise from Project operations exceeds 45 dBA L_{eq} hourly sound levels at a noise sensitive land use between 10:00 p.m. and 7:00 a.m.
3. Based on CEC guidelines, if noise from the Project increases the existing background noise level by 5 dBA or more an impact may result.

With respect to the limits defined by these three impact criteria, and as shown in the above results table (distinguished by bold italics), the predicted nighttime L_{eq} from Project operation would exceed 45 dBA only at one of the eight studied positions: ML02. Also, ML02 would experience a Difference in L_{eq} and L₁₀ greater than 5 dBA over the existing measured ambient sound level.

However, as described in Section 5.12.1.2 of the AFC, ML02 was a measurement location meant to represent the existing PG&E Carrizo Plain Substation and is thus not associated with a noise-sensitive receiver. Therefore, the noise impact at ML02 is considered less than significant. And while the other seven locations studied in this analysis are associated with noise-sensitive receivers, the noise impacts comply with the three thresholds above and are hence considered less than significant.

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TECHNICAL AREA: SOIL AND WATER RESOURCES

Data Request 105: Please revise Table 2-4. The Post-Project Annual Runoff Volume entering Soda Lake appears to have been transposed with the Pre-Project Annual Runoff Volume entering Soda Lake.

Response: Table 2-4, page 2-8 of the Hydrology and Hydrogeology Report, has been updated to reflect the correct information from the analysis, as illustrated below. However, the annual runoff volumes are currently being recalculated to reflect comments from the CEC at the August 5, 2008 Workshop. This information will be included in the forthcoming revised Hydrology and Hydrogeology Report

**Table 2-4
Annual Off-site Runoff Volumes**

Location	8 Inches Annual Rainfall		10 Inches Annual Rainfall	
	Pre-Project Annual Runoff Volume (afy)	Post-Project Annual Runoff Volume (afy)	Pre-Project Annual Runoff Volume (afy)	Post-Project Annual Runoff Volume (afy)
Project Site	6,696	6,534	8,375	8,167
Entering Soda Lake	24,644 24,482	30,805 30,602	24,482 24,644	30,602 30,805

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TECHNICAL AREA: SOIL AND WATER RESOURCES

Data Request 106: Please estimate the following regarding runoff from the upgradient watersheds which could be captured in the perimeter swale before the swale overtops and discharges towards the existing ephemeral drainage channel that flows through the laydown area:

- a. the total storage capacity of the perimeter swales; and
- b. the portion of the estimated average annual runoff that would be captured in the perimeter swales.

Response:

- a. The swale design is still being addressed. However, the capacity of the swales would be a function of width, length, and depth of flow.
- b. The average annual rainfall in the area is approximately 8 to 10 inches. The estimated average annual runoff that will be captured in the perimeter swales will be calculated when the swale design is completed. This information will be included in the forthcoming revised Hydrology and Hydrogeology Report as discussed during the August 5, 2008 Workshop.

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TECHNICAL AREA: SOIL AND WATER RESOURCES

Data Request 107: Please estimate the following regarding runoff captured onsite in the depressions and the perimeter swales:

- a. the portion of the total project site runoff that is expected to percolate to the subsurface increasing groundwater recharge of the Upper Zone aquifer; and
- b. the increase in average annual groundwater recharge attributable to infiltration of stormwater runoff for the proposed project.

Response: At the August 5, 2008 Workshop, the CEC requested that the Applicant revise the calculations for runoff and infiltration using updated runoff coefficients reflective of average annual conditions. The calculations and estimate of the runoff captured in the onsite depressions and perimeter swales will be included in the forthcoming revised Hydrology and Hydrogeology Report, as discussed during the August 5, 2008 Workshop.

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TECHNICAL AREA: SOIL AND WATER RESOURCES

Data Request 108: Please revise the estimates of runoff delivered to Soda Lake for the post-project scenario to account for runoff from the up-gradient sub-watersheds that will be captured in the perimeter swales.

Response: The perimeter swales have the potential to infiltrate a portion of the runoff from the up-gradient sub-watersheds; however, the primary function of the swales will be to convey upstream runoff around the site. A secondary benefit is to provide infiltration opportunities for groundwater recharge. During storm events that produce runoff in the up-gradient sub-watersheds and subsequently flow in the perimeter swales, much of the runoff volume is conveyed downstream on the surface. There will be some infiltration, however, during and after the runoff event. Because the Project site is more than 10 miles away from Soda Lake, it is anticipated that the infiltration effects of the swales will be minor in comparison with overall surface water flows to Soda Lake. Further analysis will be taken as soon as the swale design is completed and the results will be included in the forthcoming revised Hydrology and Hydrogeology Report as discussed during the August 5, 2008 Workshop.

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TECHNICAL AREA: SOIL AND WATER RESOURCES

Data Request 109:

Please provide the following:

- a. a basis for assuming a 12 gpm constant pumping rate for wells with an unknown pumping rate and the 35% duty cycle for wells with a known maximum yield; and
- b. An explanation of how these assumptions compare to the known withdrawal from users on the Carrizo Plain based on the surveys.

Response:

a & b. Kemnitzer's estimation of groundwater use in the Carrizo Basin was based on an assumption that domestic wells had average withdrawals of 6 gpm (9.7 afy). The Applicant's review of well information indicated that the Upper Aquifer Zone wells have reported yields ranging from approximately 8 to 50 gpm. Since Kemnitzer's study in 1967, it appears that some large parcels in the site vicinity have been subdivided into smaller parcels for residential use. Therefore, as a conservative water use estimate for the model, a withdrawal of 12 gpm (19.4 afy) was used for these domestic wells where there was no reported yield or withdrawal. The duty cycle for the domestic wells was assumed to be 100 percent and it was assumed that they would be pumped continuously, which is unlikely and a very conservative assumption that would have the affect of increasing anticipated drawdown in the aquifers in the vicinity of the site. The duty cycle of 35% was assumed for the Deep Aquifer Zone wells only based on duty cycles reported for other agricultural areas throughout the state. Based on the August 5, 2008 Workshop these assumptions are being reevaluated and addressed in the forthcoming revised Hydrology and Hydrogeology Report.

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TECHNICAL AREA: SOIL AND WATER RESOURCES

Data Request 110: Please revise the estimated recharge rate of the model for the Project scenario to reflect the increase in groundwater recharge estimated in the surface water analysis (Data Request 108) above, rerun the model, and report the results.

Response: The model simulations appearing in the Hydrology and Hydrogeology Report are steady state and do not include possible recharge resulting from post-project groundwater recharge from the perimeter swales. By not including this possible recharge, the drawdown estimated by the model is conservative, that is, it is greater than would be expected if the features resulted in additional groundwater recharge. The model results indicate that drawdown resulting from onsite pumping is not significant. As discussed during the August 5, 2008 Workshop, the groundwater model will be rerun including the potential recharge to the Upper Aquifer resulting from the perimeter swales and the results will be included in the forthcoming revised Hydrology and Hydrogeology Report.

Carrizo Energy Solar Farm
Responses to CEC Data Requests 101-112
07-AFC-8

TECHNICAL AREA: SOIL AND WATER RESOURCES

Data Request 111: Please provide additional detail figures for the revised groundwater drawdown model results. Specifically, please zoom in on the drawdown results presented in Figures 3-9 and 3-10 to highlight anticipated drawdown within 2 to 5 miles of the project site and to improve the illustration of effects.

Response: Figures showing additional detail with respect to estimated drawdown will be included in the forthcoming revised Hydrology and Hydrogeology Report.

Carrizo Energy Solar Farm
Responses to CEC Data Requests 101-112
07-AFC-8

TECHNICAL AREA: PROJECT DESCRIPTION / CUMULATIVE IMPACTS

Data Request 112:

Please provide the following:

- a. an analysis addressing the expected cumulative impacts due to the construction, operation and maintenance of both the CESF and Topaz Solar Farm Projects; The analysis should be prepared to a level of detail that is reasonable based on the amount of information currently available and address the following technical areas: air quality, biology, cultural resources, geology, hazardous materials, land use, noise and vibration, paleontology, public health, socioeconomics, soil and water, transmission line safety and nuisance, traffic and transportation, visual resources, waste, and worker safety and fire protection;
- b. measures proposed to mitigate adverse environmental impacts of the project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation; and
- c. an additional photo simulation using the KOP #4 viewshed showing both the CESF and ,Topaz Solar Farm Projects in the view

Response: Applicant's response to Data Request 112 will be provided in the forthcoming Attachment A.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE
STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION
For the CARRIZO ENERGY
SOLAR FARM PROJECT

Docket No. 07-AFC-8

PROOF OF SERVICE
(Revised 7/24/2008)

INSTRUCTIONS: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

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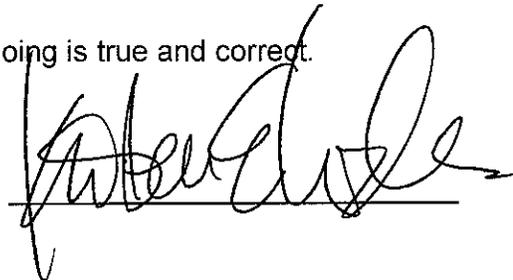
DECLARATION OF SERVICE

I, Kristen E. Walker, declare that on August 25, 2008, I deposited copies of the attached Responses to CEC Data Requests (#101-112) in the United States mail at with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.



A handwritten signature in black ink, appearing to read 'Kristen E. Walker', is written over a horizontal line.