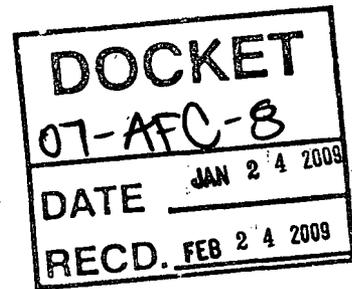


January 24, 2009

Elena Miller
Public Advisor
California Energy Commission
1516 Ninth Street, MS-12
Sacramento, CA 95814-5512



Subject: Carrizo Energy Solar Farm (07-AFC-8)
Response to Public Advisory Regarding Continually Unanswered
Questions & Concerns from CEC & Applicant

Dear Ms. Miller,

First, I would like to thank you for returning my call. You gave me the feeling that finally someone was actually listening to the concerns that we have been trying to bring to light for over a year now.

Following is a breakdown of our questions and concerns for your review. These are questions that have already been asked of the CEC. Also pointing out the many inconsistencies of statements made by the CEC and the Applicant.

I understand about becoming an intervener or just an interested participant in the process. What I do not understand is what difference it makes if I ask a pertinent question, no matter what I am, shouldn't it be answered?

- **Response to John Kessler's letter dated January 16, 2008 about the sitting process from Agena Ruskovich.**

Mr. John Kessler,

Your letter was very eloquent, but again, not answering the actual questions asked of you. I find it very interesting that you should mention the conversation that John had with the public advisor in the beginning of this sitting process, which was months before you came onboard. You can ask Mary Dyas about that conversation, as both John and I complained to her that the man was rude and not at all helpful. You can also ask Robin Bell about this man, because she too was treated poorly by this individual. If he was so good, why is he no longer our contact? I do not appreciate your implication that John does not have the right to be upset and stating he was not left out of the process just because he spoke with this individual.

Page 2

It is amazing that you learned from contacting the public advisors office that John had a 45 minute conversation with them in January of 2008. It is further amazing that out of how many phone conversations you found the person he talked to and was so clear about the entire conversation (according to the public advisor in January 2008). Now, in my opinion, if the CEC would start answering simple questions asked by John and Mike instead of spending so much time and energy to cover their asses, maybe this process could be finalized.

As far as the Corridor Teleconference goes - this too upsets me very much. John did not call in because we cannot afford the 3 hour cell phone bill (as I know that Mike and Robin too really couldn't afford to sit on the phone all that time, but they did.) Following the meeting, both Mike Strobridge and Robin Bell told us that they were very unsatisfied with the phone process, as they did not have a chance to comment until the very end and even then were cut short. Plus they had no idea who was still connected, as supposedly many had already disconnected by this time for various reasons

The next time the state has this type of process they need to set up a site where all locals can meet (for example: County Planning Dept., Fish & Game Dept. etc.) so that we who live in this area and study the wildlife on a daily basis can be actively involved as is our right. We have knowledge that a degree can't give, because we live and breathe the Plains!

For me personally I find your letter like a slap in the face. I do not believe that it is John who doesn't follow the process, but you. As the Applicant has again and again turned in incomplete and inaccurate data that you keep accepting. I find it very interesting that you can make note of John's conversation with the Public Advisor in January 2008, but when I ask you why our Airstrip information was never changed, your comment was that you cannot be responsible for something that was submitted before you came on board.

Agena Ruskovich

I would like to say that again Asura/URS has tired to undermine the process by turning in there PSA response prior to the 12-15-08 meeting. As was stated to John Kessler by Robin Bell, we were not made aware that they had submitted anything and it would have made a major difference in the meeting. Yes, it probably would have made it longer, but still, you can't convince me that this

Page 3

tactic was not planned by them. I am tired and disgusted with their underhanded and unethical practices during the course of this application.

Please docket and forward these questions/concerns regarding the following:

URS Report dated 12-12-08 – Applicants Comments on PSA.

- Page 8 – (quote) “in January the site had been disked in anticipation of planting additional crops in spring. The Landowner had planned to plant carrots.”
 - This statement is not even close to being true. The landowner had no contact with carrot producers. Plus, the landowner only owns a garden tractor. Not only that, this site was last disked the year that the Lewis’s purchased the land when Kunhle’s had a grain crop planted on it. (see attachment 1, 2, & 3)
- Page 70 – Soil & Water Resources
 - First of all, we have had very little rain so far in 2009 and it looks like it is going to be another dry year. What happens if the Applicant build their perimeter swales in April or May, after the end of the spring rains, but they do not capture any of the 117 acre feet of “Run-off” from the two up gradient water shed as projected to collect in the PSA. So, I guess they will pump all of the first 120 acre feet of water out of the untested Well on section 28 for the construction phase of the project. Even though we may be in our third year of drought!!! (see attachment 4). Maybe back to the Acro Well Report that currently does not exist.(see attachment 5).

URS Biological Survey Letter Report dated 10-9-08

- All of the BNLL Survey Site Records make the quote “fallow Ag field”. To which the definition of this is according the Webster’s Dictionary...”cultivated land that is allowed to lie idle during the growing season, to plow, harrow and break up land without seeding to destroy weeds and conserve soil and moisture. **THIS HAS NOT BEEN DONE SINCE THE LEWIS FAMILY PURCHASED THIS LAND!!!!** (please refer again to attachment 1, 2, & 3)
- They continue to state “actively cultivated barley field on Section 28 reports”. Another false statement.

Carrizo Energy Response to California Unions for Reliable Energy's Motion to Compel Production of Information – dated 10-10-08

- Page 4 – discussion, bottom of page reads... "Further, CURE is correct in it's statement that CEQA requires the commission to identify and impose feasible mitigation measures for significant adverse direct, indirect and cumulative impacts"....
 - **We, the people who will be forced to live close to the noise, air-pollution, traffic, also we will be affected by the water use should our wells go dry. This obviously will be significant ADVERSE. We need safeguards for our survival!**
- Groundwater. Please check, there are intact screen on the test well at the 100pls foot mark, so it can take water from both aquifers. The well must be **RECASED** and sealed with concrete 200 ft down to insure it can not pull from the upper aquifer.
- Water is still one of the main problems with this project. Again check with Ruskovich response dated 1-6-09. We found the test well on the Acro site, **most of the water report is based on at Well that does not exist!!**
- Again, they list Ag Wells on Section 3 at 1100gpm, Section 2 at 600gpm, and Section 13 at 500gpm. All of these wells have been over pumped and have collapsed or have been abandoned.
 - **We were told that you made this statement regarding wells collapsing in the plains. "They say the history of well collapses out here is to due the corrosive nature of the water from the lower aquifer."**
 - **These Wells collapsed from over pumping. Pulling water from around the case faster than it can recover, making an air void, collapsing the ground material around the well, causing it to fall into the well, thus collapsing the entire well into itself.**
 - **This is sure to happen during their construction phase. Are they also considering that we are in our 3rd year of drought? We are looking at our survival and the water must be on the forefront of your minds. Without water, the rest won't matter. Without water, are you and the applicant prepared to compensate everyone in the plains to whatever ends is needed.**

In all of Asura reports to well use they even show that it is 10 times the amount of water then if cattle pastured the land or the usage of 10 sections

**of land. Water resources needed minimum using their facts and figures –
(see attachment from URS)**

Land Use Ordinance

- Welding is permitted in very small amount on Ag land. To build their 40,000 square foot Manufacturing Plant it seems they will need to change the Laydown site from Ag to Industrial.

Tax Revenue

- If mitigation on lands around the solar plant happen 5 to 6.5 sections and this land is put into the hands of USDWS, Calif F&G, Nature Conservative, etc. the are all tax exempt state entities.

SLO Planning Department Response – dated 12-31-08

- Compliance Project Manager – There must ne a Local honest member of the Carrisa Plains hired by each project to monitor, water, dust, etc uses to make sure the project is in compliance daily. This will be to safeguard local people from the plains.
- Number 3 – (quote) “Have an onsite Independent monitor”. Yes, a job for myself or someone else who cares about those of us whom are affected adversely, not someone who is selling the land or is for the projects. This will guarantee protection for myself and my neighbors.

SLO Department of Agriculture/Measurement Standards – response dated – 12-30-08

- Size of the Laydown site – Check - The size is extremely too large. (see attachment 6).
 - They even believe it is too extreme. I bet they can do the job on a 50 acre Laydown site and not 380 acres. It could save URS and Asura a lot of problems.

Wildlife Corridor

- This was the worst. When you state public involvement, then expect people to be on the phone for 3 hours. This was a joke. The next Corridor study group meeting needs to be in person not a teleconference. We who live on the Plains who watch and enjoy the many different birds and mammals that live our here could help prepare a study that would benefit both us and them to the fullest.

Page 6

Please look at the other documents of false statements that have been submitted, ie,:

- ratings of roads
- old well reports from pre-1958 that no longer exist
- the numerous wells from the California Valley 2002 report that did not occur on my land
- the alternative sites listed on Antelope Plains that URS and Asura has not even checked into

I implore the California Energy Commission to re-evaluate and rethink all documentation presented by the applicant as we have proven time and again their falsehood and inaccuracies.

I am looking forward to meeting with you in the near future in the hopes that you can request that the CEC answer and respond to our questions and concerns in a timely manner.

Sincerely,



John Ruskovich
13084 Soda Lake Road
Santa Margarita, CA 93453

Big List About

**Carrizo Energy Solar Farm
's Comments on Preliminary Staff Assessment
07-AFC-8**

related annual species. In January 2008, the site had been disked in anticipation of planting additional crops in the spring. The landowner had planned to plant carrots the late spring of 2008; however, because of the ongoing surveys required by CDFG, the landowner agreed to a request from the applicant, CDFG, and Energy Commission staff to discontinue their usual use of the Project site until after the biological surveys were completed. The lands in Section 33 were planted with barley in 2008 and were actively grazed during Summer and Fall of 2008. However, CEC Biology Staff state that the site is a fallow field while, conversely, CEC Land Use Staff characterize it is an agricultural field. Applicant feels CEC Biology staff's characterization is inaccurate since staff only recently precluded the landowner from using the property in its customary land use. While the CESF Site may currently support plant species that are found in annual grasslands, this is only because the landowner has not been allowed to cultivate the crops as they wish. In normal circumstances, the landowner would remove the annual vegetation during disking of the site for cultivation of agricultural crops. Therefore, it is not appropriate to call the vegetation on the Project site typical of annual grassland because the actual land use of the site would not maintain the species composition that defines this community. It is better characterized as cultivated dry land farming and grazed lands, which would also characterize the site more accurately as marginal kit fox foraging and pass-through habitat and merely a disturbed agricultural field.

Furthermore, the Land Use section of the PSA identifies the Project site as **currently and historically used as agricultural lands according to CEC Staff analysis and San Luis Obispo County Department of Agriculture. As stated on Pages 4.5-9 and 4.5-10 of the PSA: "The site and area have a long and continuous history of use for dry-farmed grain production and for cattle grazing, both important components of the County's agricultural economy" (SLOC 2008d). Any habitat that exists on the property is and has been annually disturbed by farming activities and composed of land used for agriculture.' "Therefore, the conversion of any lands from agricultural production to protected biological resources habitat could result in agricultural land conversion impacts similar to those described ...for the 640-acre CESF site."** [emphasis added]

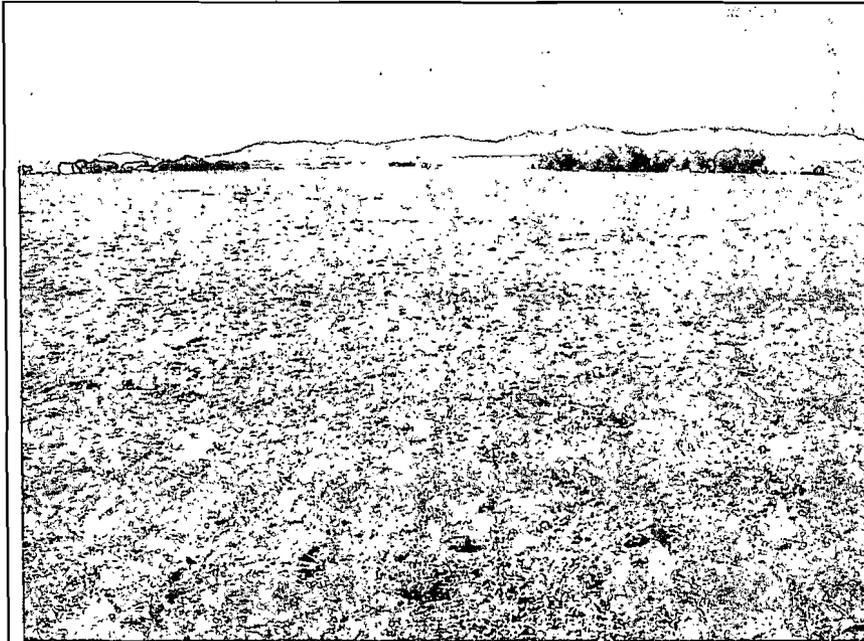
On page 4.5-23, CEC Land Use Staff recommends Condition of Certification LAND-1, which requires Applicant to mitigate at a 1:1 ratio. It is expected that any mitigation for loss of habitat that would occur through the proposed compensation of agricultural lands would not necessitate any further mitigation for loss of additional agricultural lands. Alternatively, non-farmland could be used to mitigate for habitat loss and would not necessitate any further mitigation for loss of agricultural land.

Applicant does not understand the apparent contradiction between CEC Land Use Staff (who claim land is disturbed agricultural land) and CEC Biology Staff (who claim land is important SJKF habitat). Both staff are apparently asking the Applicant to mitigate for their conclusions, which are contradictory.

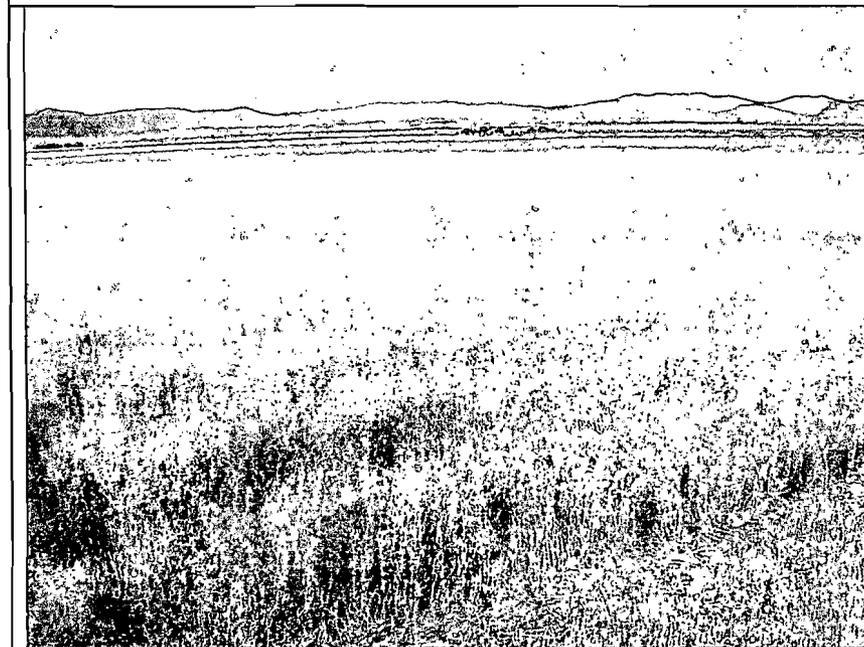
Any requirement to mitigate for loss of agricultural lands caused by mitigation for loss of habitat would amount to a penalty to the Project owner for choosing to site the project on already disturbed land. This appears to contradict the purpose of protecting either or both agricultural and biological resources in future projects.

Attachment 1

**Carrizo Energy Solar Farm
Applicant's Comments on Preliminary Staff Assessment
07-AFC-8**



**Photograph #1:
Section 28
(proposed project
site) in 2007. Note
the recently disked
nature of the field.**



**Photograph #2:
Section 28
(proposed project
site) in 2008. Note
the fiddleneck-
dominated field.**

**Carrizo Energy Solar Farm
Applicant's Comments on Preliminary Staff Assessment
07-AFC-8**

| | |
|---|---|
|  | <p>Photograph #3: Section 33 (proposed construction laydown area) in 2007. Note the recently disked nature of the field. This field was subsequently planted with barley that germinated sparsely due to poor rain conditions in 2007.</p> |
|  | <p>Photograph #4: Section 33 (proposed construction laydown area) in 2007. Note the recent harvesting of the barley and evidence that the site is intensively used as agriculture.</p> |

BIOLOGICAL RESOURCES Page 4.2-1

The applicant has proposed mitigation in their 2008 Biological Surveys Report to address habitat loss impacts for the San Joaquin kit fox, California Species of Special Concern American badger (*Taxidea taxus*), and the rare native game species pronghorn (*Antilocapra americana*) by providing 705 acres of agricultural lands or naturalized habitats. However, staff and the CDFG are concerned that the agricultural uses of this habitat could impair the habitat value of that land, resulting in a deficient compensation proposal. Staff, in consultation with CDFG and USFWS, believe that a significantly

A Hincmout 3

**Carrizo Energy Solar Farm
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07-AFC-8**

east of Carriza Creek could eliminate the need for the two creek crossings and the placement of fill in the creek.

Comment:

The latest site plan, included in the Supplement to the AFC, illustrates the fueling area is located at the northeast corner of the Construction Laydown area. This location is away from the 100-year approximated floodplain, therefore, the fueling area will not be negatively impacted by the 100-year flood.

SOIL AND WATER RESOURCES Page 4.9-1

Water supply for construction appears to be significantly under-estimated. The applicant should provide clear documentation demonstrating that all construction requirements (including dust suppression) can be successfully accomplished with the estimated (20.8 acre-feet per year) water supply.

Comment:

The applicant is currently preparing water use estimates documentation to confirm the water supply for construction.

SOIL AND WATER RESOURCES Page 4.9-1

The applicant indicates that the proposed perimeter swales will capture and detain the first 117 acre-feet of runoff from two up-gradient watersheds. On the Carrizo Plain, with extremely limited water resources, capturing and detaining up-gradient surface water resources including Carriza Creek and Soda Lake and groundwater users. The applicant should include provisions for this runoff to pass through the CESF project site.

Comment:

In the existing condition the runoff, generated upgradient from the site, sheet flowed across the project site area and allowed to be infiltrated into the natural ground. The proposed swales will concentrate flows which will aid the off-site runoff volume to continue pass the project site towards Soda Lake.

SOIL AND WATER RESOURCES Page 4.9-1

Potable water supply estimates are 5.3 gpm for average annual (averaged over 8,760 hours) and maximum daily usage. The applicant should confirm the average annual and maximum daily potable water supply estimates.

Comment:

The applicant is currently preparing water use estimates documentation to confirm the average annual and maximum daily potable water supply estimates.

line and approximately half way between the east and west section lines, was first drilled to a depth of 500 feet. An E-log, which measures the SP (self potential) and apparent electrical resistivity of the materials was run in the hole. A review of the E-log and the drill cuttings indicated that very little sand or gravel was present except in the bottom portion of the hole. It was decided to drill an additional 100 feet (to 600 feet) to determine if additional sand or gravel might be encountered. The hole was drilled to a total depth of 620 feet, and a second E-log was run. The E-log verified the indications of the drill cuttings that little to no permeable material was present at this site. The pilot hole was backfilled and a second exploratory site was selected.

The second pilot hole, W-2, was located about 120 feet south and 120 feet east of the north-west corner of the section. This hole was drilled to 600 feet and E-logged. The hole encountered only clay and silt below about 120 feet. Based on the E-log and the drill cuttings this hole was also backfilled and abandoned.

The third pilot hole, W-3, was located about 120 feet north and 120 feet east of the south-west corner of the section. It was drilled to 620 feet and an E-log was run. The E-log, as well as the drill cuttings, were favorable, indicating lenses of sand and gravel from 460 to 610 feet. Based on these results it was decided to ream the pilot hole and construct the 12-inch diameter test well.

Buehler Civil & Mineral Report
1984 On Arco Solar site. As shown in
Volume 2 October 2007 Application for Ausma.
Appendix J Preliminary ² GEOTECHNICAL
Investigation Report.

Construction of well

The well is a gravel-packed well, consisting of a 19-inch diameter hole in which a 12-inch diameter casing and screen assembly is installed. A filter gravel was placed below a depth of 190 feet in the annular space between the wall of the drilled hole and the casing/screen assembly. A bentonite seal was installed from 185 to 190 feet. The annulus was backfilled with gravel above that seal to 50 feet below the land surface and a cement-grout surface seal was installed from 50 feet to land surface. A concrete pump base, 6 feet by 6 feet and 1-foot thick was installed at the ground surface.

The well casing and screen assembly consists of 60 feet of galvanized low carbon steel screen and 560 feet carbon steel casing. The screen is a continuous wire wrap type, manufactured by U.O.P. Johnson Co. with .020-inch openings. The screen was installed in three sections located at depths of 490-500 feet, 530-555 feet, and 575-600 feet below the land surface.

The well was developed by jetting the screen, and by washing and surging with air. After nine days of cleaning and development by these means it was determined that the well was clean enough for final development with the test pump.

The test pump was installed and final development began on April 10. At 11:20 a.m. April 11, while developing, the pump discharge rate suddenly increased from about 80 gpm to almost 200 gpm and the water

URS

SCALE: 1" = 300' (1:112,000)

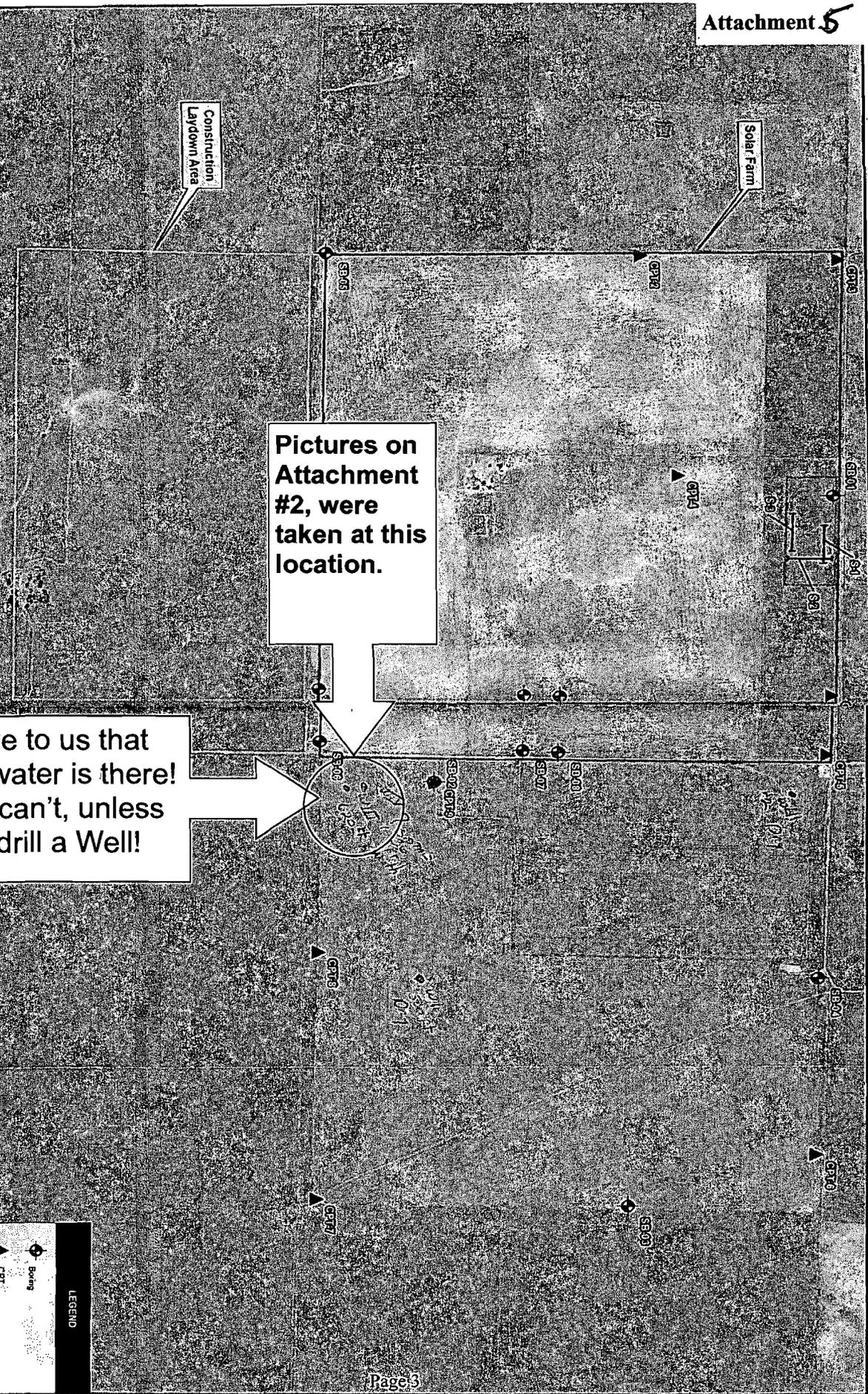
0 300 600 1000 Feet

CREATED BY: JN DATE: 08-12-07 FIG. NO. 2

PKT. AL PROJ. NO. 22239472

SITE PLAN
CARRIZO ENERGY SOLAR FARM (CESF)

SOURCES: California Resources Agency
 Public Lands 2005; USDA FSA Permit
 Photography Field Office; County maps
 made for San Luis Obispo, CA (2005)



Pictures on Attachment #2, were taken at this location.

Prove to us that the water is there! You can't, unless you drill a Well!

LEGEND

- Boring
- ERTS
- Electrical Resistivity Soundings
- Solar Farm
- Construction Laydown Area
- Power Blvd

5.5.2 Environmental Consequences

This section provides details on the proposed water use, availability, supply, water quality, and surface water. In summary, untreated raw water for the CESF will be obtained from groundwater via an existing onsite well. The design of the CESF minimizes use and maximizes the recovery of process water. Blowdown and an oil/water separator (OWS) clear discharge will be routed to an onsite raw water storage tank for reuse. Stormwater will be collected onsite and directed to swales and detention areas for percolation into the ground. The following sections describe in more detail the potential water resources related environmental consequences associated with the CESF.

5.5.2.1 Water Supply and Use

The Carrizo Plain Groundwater Basin will supply raw water to the CESF via an existing onsite groundwater well, which is expected to provide 100 percent of the CESF needs.

Water will be required for the following:

- Make up to the steam turbine system.
- Washing of solar system reflectors and collectors.
- Potable Water: Potable water will be supplied from a potable water skid for use by plant personnel.
- Service Water: Untreated water will be required for general site uses.
- Fire Protection.

Table 5.5-3 provides the CESF water usage rates. The amount of process water used by the CESF is expected to be reasonably uniform. The expected average daily water consumption for the plant is approximately 70 m³ (18,500 gallons), or 21.8 AFY, based on the assumption of two units operating at full load for 13 hours per day. The expected peak water consumption for the facility is approximately 195 liters per minute (51 gallons per minute) based on full plant output for 4,765 hours per year. Total peak daily use is about 282 m³ or 0.7 million gallons per day (MGD), based on a 13 hour operating day. Average annual raw water consumption is estimated to be 17.2 acre-feet per year (AFY). Plant water used for the CESF is shown in Section 3.0, Facility Description and Location (see Figure 3.4-17).

Raw water for CESF use will be obtained from the existing onsite well discussed above. Based upon Table 5.5-3, the average annual (39 gpm), average daily (41 gpm), and maximum daily (101 gpm) CESF water uses are below the original existing well yield of 500 gpm. Additionally, these proposed water demands are in the range of the typical well yields in the area which range from 10 to 500 gpm. Furthermore, the water usage rates and well yield are less than that of designed and operated water well usage at a nearby water well at the now dismantled ARCO Carrisa Plain Solar Project (ARCO Site).

Section 27, located adjacent and east of CESF, contained the now dismantled 177-acre ARCO Site from approximately the mid-1980s to the late 1990s. Research and testing was conducted prior to construction to determine whether the underlying Carrizo Plain Groundwater Basin could support the proposed water requirements for that project. A design long term mean of 115 gpm was proposed (maximum seasonal water requirement of 190 gpm for 4 months from June to September and 24-hour peak demands of 250 gpm). Testing on Section 27 was conducted in 1984 by Bechtel Civil & Minerals, Inc. (Bechtel). A

review of the data and analyses of the pumping test conducted at test well 3A (W-3A) indicated that the well was capable of yielding the design water requirements (115 gpm) and could meet both seasonal and peak demands. W-3A is presumably located 36 feet north of pilot hole W-3 (pilot hole W-3 was located 120 feet north and 120 feet east of the southwest corner of Section 27). Testing commenced on May 2, 1984. The static level of water in the well before pumping was 40 feet below ground surface and the pumping rate was set to 305 gpm initially. There was a drawdown of 333 feet resulting in a water level of 373 feet below ground surface. The pumping rate was reduced to 265 gpm after 90 minutes because of mechanical problems. Pumping rates over the following 3 days varied between 254 to 268 gpm, with an average pumping rate of 265 gpm. The well recovered to 340 feet below surface level and then again began dropping slowly. At the end of 3 days, the water level was 368 feet below ground surface. Based on the well's performance and adjusting the well's performance to a rate of the desired 115 gpm over 20 years (projected operational period of the ARCO Site), Bechtel indicated that "the aquifer is capable of providing the water requirement and the extraction would not interfere with existing users." Similarly, Bechtel noted that preliminary literature reviews followed by discussions with local farmers indicated that the groundwater resources at the proposed site should be sufficient to meet the water requirements. Bechtel concluded that the maximum long-term mean capacity of the well is calculated to be 170 gpm. See Appendix K, Water Resources, for backup information on ARCO Site water demand and supply.

**Table 5.5-3
Carrizo Energy Solar Farm Water Usage Rates¹**

| Water Use | Average Annual (lpm/gpm) ² | Average Daily (lpm/gpm) ³ | Maximum Daily (lpm/gpm) ⁴ |
|--|---------------------------------------|--------------------------------------|--------------------------------------|
| EQUIPMENT MAKEUP WATER REQUIREMENTS | | | |
| Steam Cycle Makeup to DI Tank | 103 / 27 | 103 / 27 | 190 / 50 |
| Reflector Wash Water | 19 / 5 | 28 / 7 | 51 / 13 |
| ACC Wash Water | 0.9 / 0.25 | 0.9 / 0.25 | 121 / 32 |
| Media Filter Back Wash ⁵ | 0.006 / 0.01 | 0.05 / 0.01 | 0.03 / 0.009 |
| Misc. Drains, etc. to OWS | 5.4 / 1.4 | 2 / 0.6 | 4 / 1 |
| Potable Water | 20 / 5.3 | 20 / 5.3 | 20 / 5.3 |
| Total Equipment Makeup Requirements | 149 / 39 | 154 / 41 | 387 / 101 |
| Recovered Water⁶ | | | |
| Steam Drum Flash Steam | 12 / 3 | 12 / 3 | 23 / 6 |
| Blowdown Flash Tank Condensate | 91 / 24 | 91 / 24 | 168 / 44 |
| Recovered from OWS (clear water) | 5.4 / 1.4 | 2 / 0.6 | 4 / 1 |
| NET RAW WATER REQUIREMENT | 40 / 10.6 | 49 / 13 | 193 / 51 |

Notes:

¹Based on two units at rated steam flow.

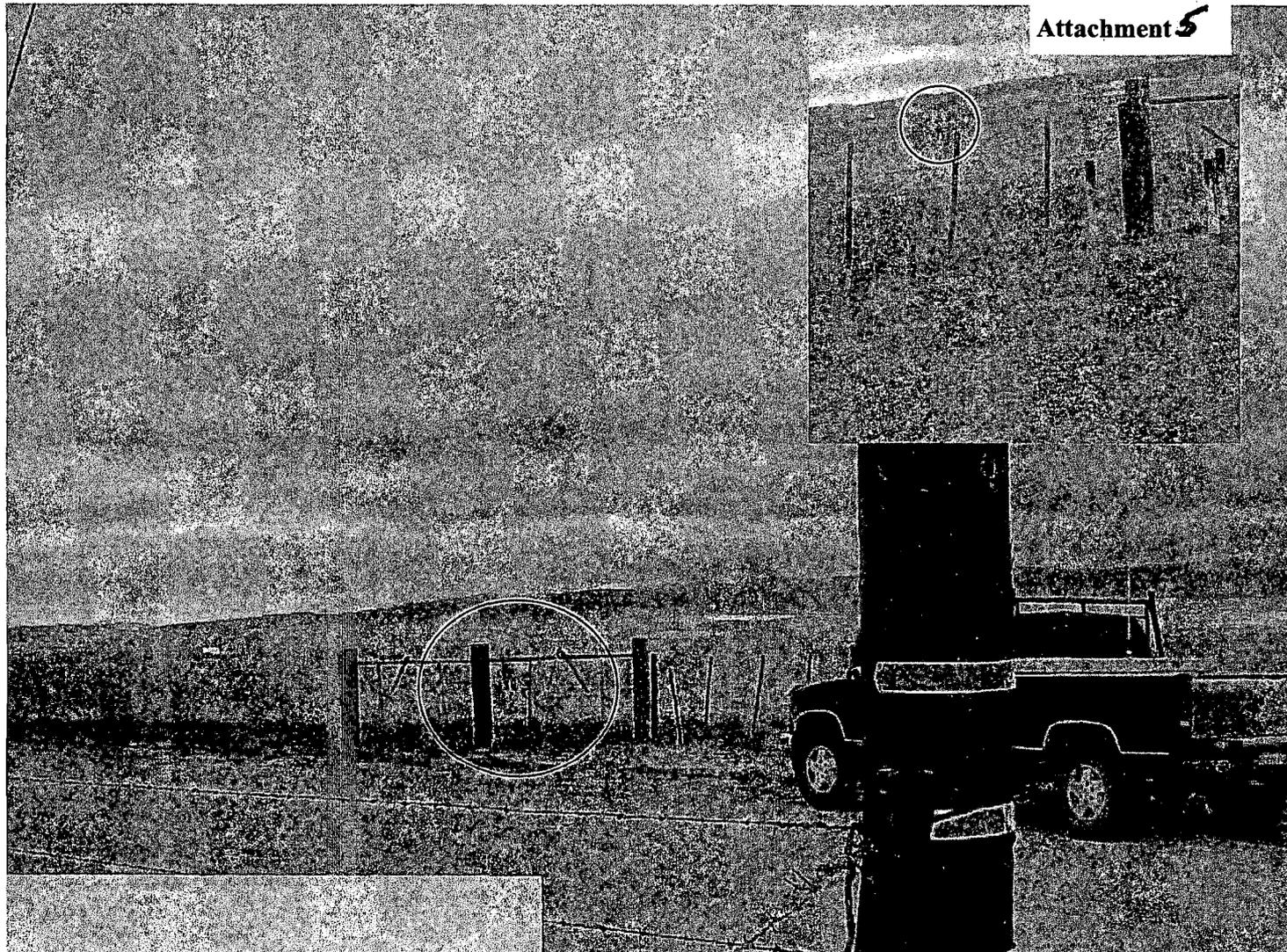
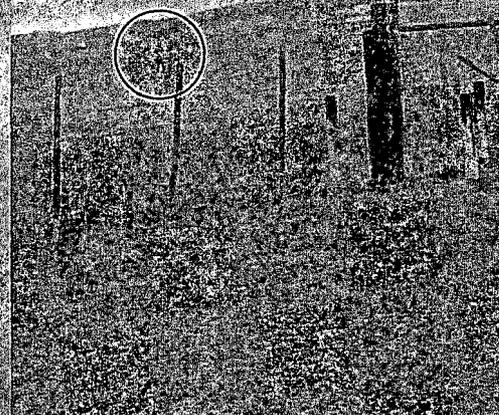
²"Average Annual" is based on 35 °C at 100 percent Load for 4,745 hours per year, reflector washing 250 days per year and ACC washing of all 50 cells, averaged over 8,760 hours.

³"Average Daily" is based on 13 hours per day operation, averaged over 24 hours.

⁴"Maximum Daily" is based on 13 hours per day, averaged over 13 hours, with ACC washing (10 cells over 10 hours).

⁵Based on one 20-second back flush every eight days at 64.35 liters per flush.

⁶Potable water includes water used for drinking, sanitation, and laboratory.



Picture taken 1-3-09 at the Acro Site, at the corner Hwy 58 and Tracey Lane Trail. Where John is standing is the exact measured spot where Asura's Water Report shows that there is a 620 foot deep Well. This is the same Well that CEC is basing it's decisions on.

WHERE'S THE WELL???

Currently, the site sustains a small number of cattle for grazing and consists of a privately-owned, abandoned ranch complex and an inactive gypsum mine. The ranch structures are in disrepair and largely collapsed. Although its permit is still open, the site's gypsum mine has been inactive for decades and rusted strip-mining equipment still sits idle adjacent to the mine area. SunPower plans to reclaim the mine site and close its permit.

The most important factor SunPower considered in selecting this site was the solar resource available. The solar resource is the percentage of available sunlight that can be converted into electricity. The area around California Valley has the highest solar resource in PG&E's service territory and is identified by the San Luis Obispo County General Plan's Energy Element as an area of high solar potential where solar energy development should be encouraged.

California Valley's very nature makes it the ideal location for solar energy production. It is protected from coastal fog by the Coastal and La Panza mountain ranges to the West. The Temblor Range to the East protects it from San Joaquin Valley ground fog. **The weather in California Valley is stable, marked by very low rainfall, moderate temperatures and consistent sunshine.** At an elevation near 2100 feet, this microclimate contains air that is dry and relatively low in particulate matter, boosting the sun's intensity.

GENERAL PLAN / ZONING

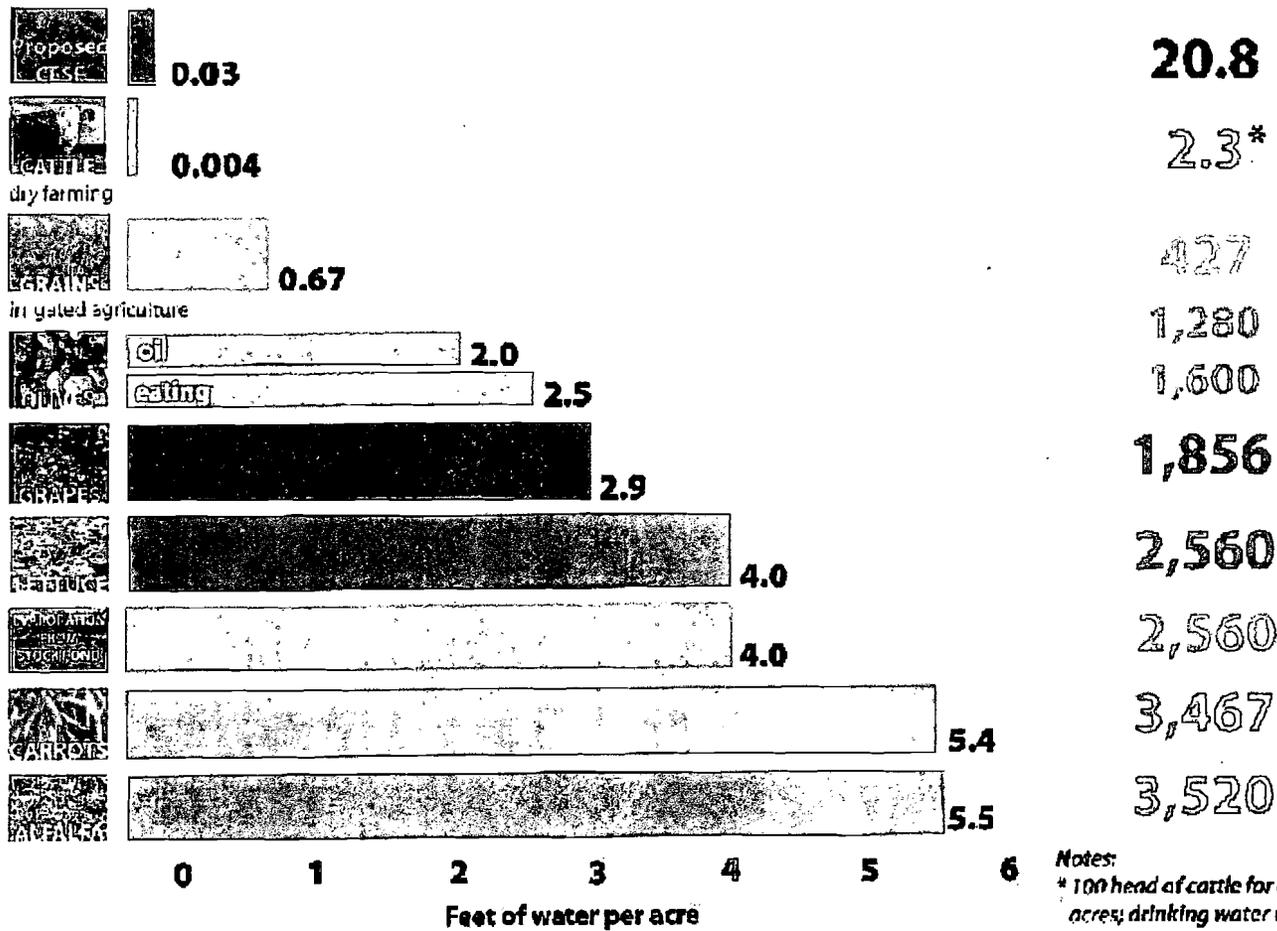
All property parcels within the site, including the proposed transmission line easement, are designated in the County General Plan as Agriculture, and are flanked on the north, east and west by property designated as Agriculture. Parcels outside, and immediately south, of the proposed site have a land use designation of Residential Suburban (RS) within the village of California Valley.

Path: G:\gdp\projects\157722239\20max\suppl\environmental_filling\hydro_fig 1-2.mxd, 06/26/08, camille_1111

10 TIMES AS MUCH AS IRRIGATED USES PER SECTION

HOW MUCH WATER : AGRICULTURAL USES

Acre-ft/year



Notes:
* 100 head of cattle for 640 acres; drinking water only



SOURCES:



NO SCALE

GRAPHIC COMPARISON OF AGRICULTURAL WATER USES TO CEF CARRIZO ENERGY SOLAR FARM (CESF)

| | | |
|----------------|--------------------|----------|
| CREATED BY: CL | DATE: 06-26-08 | FIG. NO: |
| PM: AL | PROJ. NO: 22239472 | 1-2 |

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

TECHNICAL AREA: SOILS AND WATER RESOURCES

Data Request 33:

Please provide:

- a. a comparison of typical water use per acre of the neighboring land uses with the proposed CESF.
- b. a comparison of water use per MW produced relative to other power generating options such as gas-fired combined cycle, gas-fired combustion turbines, and existing solar thermal facilities in California.

Response:

The Applicant's consultant has reviewed available information for estimates of typical water use for other property uses that may be applicable to the vicinity of the proposed CESF site. Water use data for other types of power generating facilities are also provided. The table below provides typical water use per acre for other land uses and water use per megawatt of power generation for other types of generating facilities.

| Activity/Property Use | Water Use |
|--|-------------------|
| Single Family Residential ^a | 0.52 afy |
| Commercial/Institutional ^a | 1.66 afy |
| Industrial ^a | 6.27 afy |
| Urban ^b | 3.2 af/acre |
| <u>Agricultural:</u> | |
| Alfalfa ^{b,d} | 4.7 – 5.5 af/acre |
| Cotton ^{b,e} | 3.2 - 5.0 af/acre |
| Barley ^b | 1.3 af/acre |
| Grapes ^b | 2.9 af/acre |
| Tomatoes ^{b,c} | 3.9 af/acre |
| Corn ^{b,c} | 2.4 af/acre |
| Deciduous Orchard ^b | 3.5 af/acre |
| Pasture (improved) ^b | 4.5 af/acre |
| Carrots ⁱ | 5.8 af/acre |
| Lettuce ⁱ | 4 af/acre |
| Spinach ⁱ | 0.5 – 2.0 af/acre |
| Dry Beans ⁱ | 1.8 af/acre |
| Olives (for oil) ⁱ | 2.0 af/acre |
| Olives (for eating) ⁱ | 2.5 af/acre |
| <u>Power Generation:</u> | |
| CESF (projected; 640 acres) | 0.03 afy/acre |
| Solar, Wet Cooling ^d | 1.3 afy/acre |

**Table 2.11-3
Project Operations Trip Generation**

| | Daily Trips | AM Peak Hour Trips | | PM Peak Hour Trips | |
|--------------------------------------|-------------|--------------------|-----|--------------------|-----|
| | | In | Out | In | Out |
| Operational Workforce ^{1,2} | 150 | 70 | 5 | 5 | 70 |
| Total Trips | 150 | 70 | 5 | 5 | 70 |

Notes:

- 1 Operational workers (75 employees) were conservatively assumed to commute during the 7-9 AM and 4-6 PM adjacent street peak hour traffic.
- 2 Of the 75 employees, approximately 38 from Kern County, 19 from San Luis Obispo, and 18 from Paso Robles.

Year 2010 No Project Roadway Segment Analysis: Table 2.11-4 displays the LOS analysis results for the study area roadway segments under Year 2010 No Project conditions.

**Table 2.11-4
Roadway Segment LOS - Year 2010 No Project Conditions**

| Roadway | Segment | Cross-Section Classification | Peak Hour Traffic Volume | Level of Service (LOS) |
|------------------|-----------------------------|------------------------------|--------------------------|------------------------|
| SR-58 | At Cammati Creek | 2-Lane Collector | 93 | A |
| SR-58 | West of Soda Lake Road | 2-Lane Collector | 58 | A |
| Bitterwater Road | North of Bitterwater Valley | 2-Lane Collector | 10 | A |

As shown in Table 2.11-4, all of the study roadway segments are forecast to operate at acceptable LOS-A under Year 2010 No Project conditions.

Year 2010 Peak Project Construction Roadway Segment Analysis: Table 2.11-5 displays the LOS analysis results for the study area roadway segments under Year 2010 with Peak Project Construction conditions.

**Table 2.11-5
Roadway Segment LOS -
Year 2010 Peak Project Construction Conditions**

| Roadway | Segment | Cross-Section Classification | Peak Hour Traffic Volume AM / PM | Level of Service (LOS) AM/PM |
|------------------|-----------------------------|------------------------------|----------------------------------|------------------------------|
| SR-58 | At Cammati Creek | 2-Lane Collector | 123 / 123 | A / A |
| SR-58 | West of Soda Lake Road | 2-Lane Collector | 190 / 157 | A / A |
| Bitterwater Road | North of Bitterwater Valley | 2-Lane Collector | 40 / 40 | A / A |

Roads are in poor condition
 Caltrans Rating D and C. not A

1.4 SITE HISTORICAL USES OF GROUNDWATER

A review of historical documents by URS revealed that agricultural development on the Carrizo Plain has included primarily dry farming of wheat and barley and raising cattle and sheep. Previous property owners grew wheat on Section 28 and wheat and barley were grown on Section 33. According to the previous property owner, in addition to the two current wells on site, one that served the residences at the ranch and an irrigation well, there were two other irrigation wells on the property that each produced approximately 1,000 to 1,200 gpm. Water from these irrigation wells were used to supply water for growing alfalfa, carrots and potatoes. However, these wells experienced some caving, and required abandonment. It is our understanding in discussions with some long-time local residents that during the period of time when these wells pumped groundwater for the purposes of irrigation, no nearby residents experienced any difficulties associated with their wells (water quality, water level or well yields). We understand that 80 acres at the southeast corner of the section was used historically for growing wheat, and approximately 0.5 feet of water was used annually. This would equal approximately 40 afy, which is approximately twice the volume of water that will be used by CESF. If it were assumed that this water was applied over a 6-month period, the estimated pumping rate would be approximately 50 gpm. This pumping rate is approximately five times the flowrate expected for the CESF facility. According to a long-time resident of the site vicinity, it is our understanding that when the site was used for this purpose, there was no evidence that adjacent wells experienced any difficulties with low water levels, decreased flowrates/yields or water quality.

frsb of report →

80
 0.5
 $0.5 \times 8 = 4$
 WRONG math
 $80 \times 8 = 640$

There were no close residences at the time this stuff was supposedly happens.

TABLE 8.- List of water wells in the Carrizo Plain area, San Luis Obispo County, California, January 1, 1967, by township, range, and section

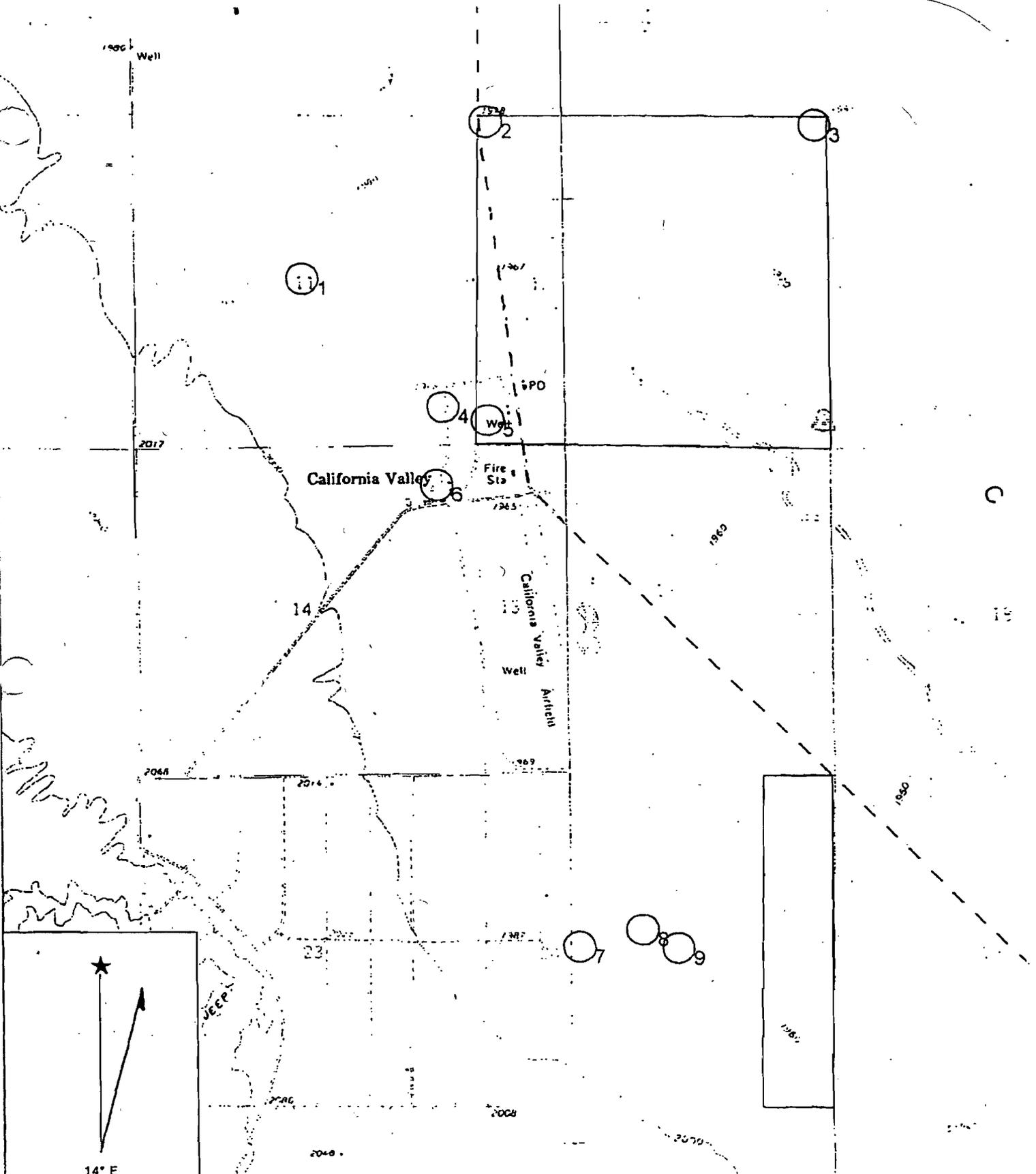
| Township-Range Sec.-well no. | Property or owner | Year completed | Total depth (feet) | Depth to water (feet) | Water level above sea- level (ft) | Rated capacity (gpm) | Remarks |
|---------------------------------|----------------------|-------------------|--------------------------|-----------------------------|---|----------------------------|------------------------|
| T28S-R17E | | | | | | | |
| S17-C1..... | | | | | | | Windmill |
| S18-L1..... | | | | | | | Windmill |
| S22-F1..... | | | | | | | Domestic ^{1/} |
| T28S-R18E | | | | | | | |
| S18-A1..... | | | | | | | Pinole Spring |
| S20-C1..... | W.Wreden | pre-1958 | 105 | 48 | 2,302 | - | Windmill |
| S20-E1..... | W.Wreden | | | | | | Windmill |
| S28-H1..... | | pre-1958 | | | 2,405 | | Windmill; not in |
| S34-A1..... | W.Wreden | | | | | | Windmill |
| T29S-R17E | | | | | | | |
| S2-F1..... | | | | | | | Carnaza Spring |
| S11-H1..... | H.Wreden | pre-1958 | 200 | 40 | 2,030 | | Irrigation |
| S13-R1..... | R.Cooper | pre-1958 | 200 | 35 | 2,006 | 100 | Irrigation |
| S25-J1..... | | pre-1958 | 80 | 59 | 1,994 | | Windmill |
| T29S-R18E | | | | | | | |
| S14-D1..... | G.Wreden | | | | | | Mustang Spring |
| S16-M1..... | Polin | pre-1958 | 100 | 37 | 2,043 | | Domestic |
| S20-E1..... | Polin | pre-1958 | - | 19 | 2,015 | | Windmill; not in |
| S21-P1..... | Lewis | pre-1958 | 70 | 35 | 2,005 | | Windmill |
| S28-G1..... | King | 1964 | | | | | Irrigation |
| S28-K1..... | W.King | pre-1958 | 500 | | | | Irrigation; abd. |
| S28-L1..... | W.King | pre-1958 | 175 | 31 | | | Domestic |
| S28-L2..... | King | pre-1958 | 325 | | | | Irrigation; abd. |
| S28-L3..... | King | 1965 | 600 | | | | Irrigation |
| S29-E1..... | Lewis | pre-1958 | 700 | 36 | 1,995 | 500 | Irrigation |
| S30-N1..... | Garcia | 1918 | 80 | | | | Domestic |
| T29S-R19E | | | | | | | |
| S31-F1..... | Beck | pre-1958 | 16 | 10 | | | Domestic |
| S31-F2..... | Beck | | | | | | Thompson Spring |
| T30S-R18E | | | | | | | |
| S1 -B1..... | | | | | | | |
| S1 -B2..... | | | | | | | |
| S1 -G1..... | | | | | | | |
| S1 -E1..... | | pre-1958 | | | | | Domestic |
| S1 -L1..... | | pre-1958 | | | | | Domestic |
| S2 -D1..... | | pre-1958 | | | | | Irrigation |
| S3 -E1..... | King | pre-1958 | 300 | 41 | 1,944 | 600 | Irrigation |
| S3 -D1..... | F.King | pre-1958 | 600 | 22 | 1,978 | 1,100 | Irrigation |
| S4 -E1..... | | | | | | | |
| S9 -E1..... | | | | | | | |
| S12-N1..... | Ohlcote | 1963 | 550 | | | | Community |
| S13-M1..... | Smith | pre-1958 | 285 | 13 | 1,968 | 500 | Irrigation |
| S14-A1..... | | | | | | | |
| S14-A2..... | | pre-1958 | | | | | |

(Continued...)

^{1/}"Domestic" includes household, livestock, etc.

There is not a
1100 gpm well like U.P. says

MIXED NO longer.
Good as
abd.



Name: CALIFORNIA VALLEY
 Date: 7/2/2002
 Scale: 1 inch equals 2000 feet

Location: 035° 18' 58.3" N 120° 00' 09.6" W
 Caption: FIGURE 2

Most of the fresh groundwater in the Carrizo Plain is found in non-marine formations of post-Pliocene age located southwestward of the SAF. They consist mostly of loosely to well-consolidated sands, gravels, silts and clays, which overlay unconformably older folded and faulted marine and continental deposits. The post-Pliocene formation is wedge-shaped, thinning from approximately 3,000 feet in thickness along the west side of the SAF to zero along the Caliente Range and San Juan Hills that form the westward boundary of the Carrizo Plain.

Groundwater quality generally improves with increasing distance northward and westward from Soda Lake, and is generally poor between Soda Lake and the SAF (Cooper, 1990). Water samples from selected wells have varied in concentration of total dissolved solids (TDS) from 545 parts per million (ppm) in Section 13, T29S, R17E MDBM to 28,740 ppm near Soda Lake in Section 34, T30S, R18E, MDBM (Kemnitzer, 1967).

*Twiss along
Bitterman
Rd*

6.0 WELL DATABASE REVIEW

No local well measurement data were located upon review of the United States Geological Survey's Groundwater Site Information for California. Similarly, no local data were available on the California Department of Water Resources well database website.

A review of Triton's proprietary database yielded a summary of information as discussed below for the wells and test holes located on Figure 2. The summaries provided are Triton's interpretation of data reviewed in Water Well Drillers Reports.

Location 1. Location 1 was drilled to a total depth of 111 feet below ground surface (bgs). Although the water table was measured at a static level of 63.5 feet bgs, the formation encountered was described as yellow clay with very little sand. The well was screened from 63 feet to 111 feet bgs.

Location 2. Location 2 was drilled to a total depth of 50 feet bgs. The formation encountered was described as clay. The water table was measured at a static level of 22.5 feet bgs.

Location 3. Location 3 was drilled to a total depth of 480 feet bgs. The formation was analyzed using geophysical logging techniques. Formation sands encountered were described as poor in porosity and permeability, and the depth interval between 160 and 480 feet bgs is described as clay.

Location 4. Location 4 was drilled to a total depth of 580 feet bgs. The formation was analyzed using geophysical logging techniques. The total formation sand encountered at location 4 was estimated at 205 linear feet.

*this boring did not happen on my
land*

*section
11*

*section
11*

The sand intervals described as the best aquifer material were 103 feet to 140 feet bgs and 185 feet to 237 feet bgs.

Location 5. Location 5 is the current supply well. The well was constructed using a 10.75-inch diameter casing placed inside a 24-inch diameter boring drilled to a total depth of 520 feet bgs. The 10.75-inch diameter casing is screened from 100 feet to 520 feet bgs. A geophysical log was not available for the well. The total formation sand encountered at location 5 was estimated at 52 linear feet. The well's output capacity was estimated at 500 gallons per minute (Kemnitzner, 1967).

Location 6. Location 6 was drilled to a total depth of 275 feet bgs. The cumulative thickness of sand and gravel encountered at location 6 was estimated at 123 feet and the well was screened from 95 feet to 275 feet bgs. The water table was measured at a static level of 18 feet bgs. The well reportedly yielded 100 gallons per minute (gpm) during preliminary testing.

Location 7. Location 7 was drilled to a total depth of 160 feet bgs. The cumulative thickness of sand and gravel encountered at location 7 was estimated at 48 feet and the well was screened from 80 feet to 145 feet bgs. The depth interval between 145 feet and 160 feet bgs was described as clay. The water table was measured at a static level of 35 feet bgs.

Location 8. Location 8 was drilled to a total depth of 160 feet bgs. The cumulative thickness of sand and gravel encountered at location 8 was estimated at 105 feet and the well was screened from 60 feet to 160 feet bgs. The depth interval between 140 feet and 160 feet bgs was described as the best aquifer material. The water table was measured at a static level of 30 feet bgs.

Location 9. Location 9 was drilled to a total depth of 100 feet bgs. The cumulative thickness of sand, gravel and clay encountered at location 9 was estimated at 45 feet and the well was screened from 50 feet to 100 feet bgs. The water table was measured at a static level of 35 feet bgs.

7.0 FINDINGS

Based on Triton's document review, our findings and the relevance of the findings to the value of groundwater resources at the Site are summarized below.

7.1 Groundwater Well Yields

Well yields vary widely, depending on the details of well construction and design, pump specifications, and aquifer characteristics. Additionally, well

| Temporary Construction Laydown Area | | |
|-------------------------------------|-----------------|---|
| Use Area | Acres (approx.) | Notes |
| Restrooms | 1 | |
| Meal Room | 3 | Appears to be unnecessarily large. |
| Permanent Road | 6 | 30 foot wide by 8,000+ linear feet |
| Manufacturing Building | 7 | As shown in Detail 1, Project Layout, page 1.4-1 in July 2008 submittal. The structure is described as 40,000 sq.ft. structure on page 4.5-4 of PSA. Includes <i>foundation</i> |
| Offices | 8 | Appears to be unnecessarily large. Unclear how much office facilities are proposed |
| Vehicle Parking | 9 | Appears to be unnecessarily large. Size is sufficient for 800 vehicles. Applicant proposes to transport employees (max. of 396) using up to 21 buses (PSA page 4.10-7) |
| Vehicle Marshalling | 9 | Unclear purpose. Appears to be unnecessarily large. |
| Fueling Station | 32 | Appears to be unnecessarily large. Includes <i>foundation</i> |
| Storage (various) | 40 | Not clear from project description how much land is needed for each of these uses |
| Assembly Area | 64 | |
| Staging Area | 76 | |
| TOTAL | 255 | |

County Agriculture Policy 11 states that groundwater supplies are to be protected for production agriculture, both in quality and quantity. The State Department of Water Resources assessment of the groundwater basin determined an annual safe yield to be 600 AFY (DWR Bulletin 18, 1958). The County's Master Water Plan identifies that the groundwater basin demand currently exceeds the safe yield. Approval of the proposed facility may exacerbate long term groundwater availability.

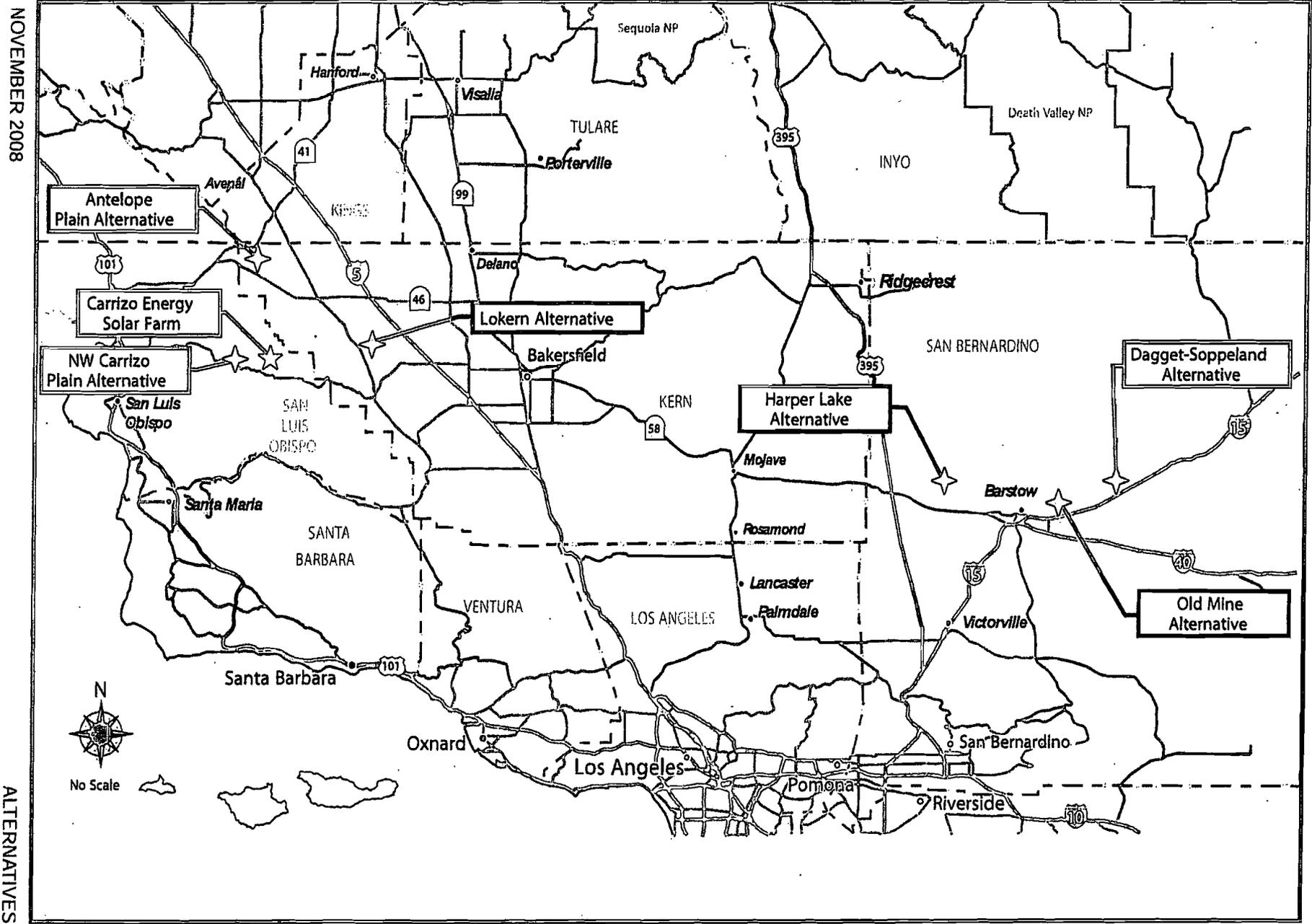
The project proposes to utilize approximately 21 AFY of groundwater on an ongoing basis. Therefore, the project proposes to utilize 3.5 percent of the total safe yield in the basin. While the PSA includes information showing the facility will utilize relatively little water compared to other power generating facilities, county policy is clear that groundwater resources in agricultural areas should be protected for agricultural uses rather than for industrial use.

The PSA also reaches the conclusion that increased runoff and reduced evapotranspiration will occur on the project site, resulting in increased groundwater recharge. The site's soil, *Yeguas-Pinspring complex*, has a water holding capacity of 9.2 inches in the top 80 inches of soil (see attached map unit description from the NRCS). This means the site's average annual rainfall (8 inches, according to PSA page 4.9-29) may be entirely "captured" by the site's topsoil, and little or no recharge of the groundwater basin occurs. The project, with its proposed retention/detention basins, may provide some recharge. Without site-specific study of the soil, any recharge associated with the project appears speculative.

An appropriate mitigation measure to avoid utilization of groundwater resources would uphold county policy and would ensure the protection of groundwater for agricultural use. A mitigation measure could be to require the applicant to capture, retain, and utilize on-site precipitation.

Attachment 6.

ALTERNATIVES - FIGURE 1
Carrizo Energy Solar Farm Project - Carrizo Alternatives



NOVEMBER 2008

ALTERNATIVES

