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DOCKET
08-AFC-1
DATE MAR 04 2009
RECD. MAR 05 2009

March 4, 2009

Mr. Ivor Benci-Woodward
Project Manager
c/o Dockets Unit, 4th Floor
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Ref: Final Comments to Avenal Energy (08-AFC-1) Preliminary Staff Assessment

Dear Mr. Benci-Woodward:

Attached, on behalf of Avenal Power Center, LLC (Avenal Power Center), are one original, twelve paper copies and two electronic copies of Avenal Power Center's comments to the California Energy Commission (CEC) Preliminary Staff Assessment (PSA) for Avenal Energy (08-AFC-1). One set of paper and electronic copies is being provided for the Dockets unit. These comments incorporate relevant discussions from the February 18, 2009 workshop, and supersede the draft comments transmitted to you on February 13, 2009.

The attached comments include:

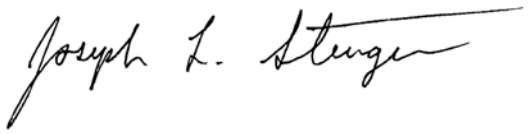
- **Attachment 1 – General and Specific Comments to the PSA**: This Attachment includes comments to the PSA, most of which are intended to implement conclusions of the workshop, or to make minor technical corrections or suggested clarifications.
- **Attachment 2 – Revised Exhibit 83-3**: This exhibit provides a site drawing with the modified storm water basin location and 300-foot setback that was agreed upon during the February 18, 2009 workshop.
- **Attachment 3 – Revised Exhibit 83-2**: This exhibit provides the confirmed temporary and permanent disturbed acreage onsite and offsite.
- **Attachment 4 – Kettleman Hills Facility Cumulative Impact Considerations**: The Kettleman Hills Facility (KHF) is an existing hazardous waste treatment and disposal facility and municipal solid waste landfill facility located in the Kettleman Hills approximately 10 miles south of the Avenal Energy site. The KHF is in the process of permitting an

expansion of landfill capacity within the boundaries of their existing facility. In response to comments at the February 18 workshop, we evaluated the potential for cumulative impacts due to the planned KHF expansion. Attachment 4 describes why the planned KHF expansion does not have the potential for significant cumulative impacts with Avenal Energy.

In addition to these attachments, pursuant to discussions at the workshop, the San Joaquin Valley Air Pollution Control District is preparing a letter to address the unanswered questions from CEC's air quality staff.

With the issues identified in the PSA resolved through the workshop discussions, we look forward to staff's receipt of these comments and development of a Final Staff Assement. If you have questions regarding the attached, please call me at the phone number in the letterhead, or Jim Rexroad at 713-275-6147.

Sincerely,



Joseph L. Stenger, PG, REA
Project Director
TRC Companies, Inc.

Attachments:
Proof of Service
Attachment 1 – General and Specific Comments to the PSA
Attachment 2 – Revised Exhibit 83-3
Attachment 3 – Revised Exhibit 83-2
Attachment 4 – Kettleman Hills Facility Cumulative Impact Considerations

cc. Mr. Jim Rexroad, Avenal Power Center, LLC
Ms. Jane Luckhardt, Downey Brand
Proof of Service List

PROOF OF SERVICE

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION
OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION
For the AVENAL ENERGY PROJECT

Docket No. 08-AFC-1
PROOF OF SERVICE
(Revised 2/3/2009)

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Declaration of Service

I, Joshua Taylor, Declare that on March 4, 2009, I served and filed copies of the attached Final Comments to the California Energy Commission's Preliminary Staff Assessment for Avenal Energy (08-AFC-1) dated March 4, 2009. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:

http://www.energy.ca.gov/sitingcases/avenal/index.html

The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

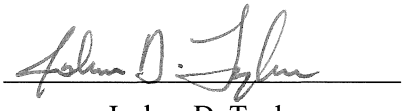
By depositing at the Federal Express Hub in Irvine, California with postage fully prepaid and addressed to those parties identified on the Proof of Service list above.

AND

Sending one original, 12 hard copies and two electronic copies (compact disc), via Federal Express located in Irvine, California, to the address below:

Mr. Ivor Benci-Woodward
California Energy Commission
C/O Docket Unit (08-AFC-1)
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

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



Joshua D. Taylor

ATTACHMENT 1

GENERAL AND SPECIFIC COMMENTS TO THE PSA

FINAL COMMENTS TO THE AVENAL ENERGY PSA

AIR QUALITY

General Comments

1. The Applicant believes that the San Joaquin Air Pollution Control District (the District) has correctly assessed the Emission Reduction Credit (ERC) package submitted as mitigation for this project. The SOx ERCs that were evaluated by the District cover the wider area requested by California Energy Commission (CEC) staff to be the basis of the ratio analysis. It is the Applicant's understanding that the District's opinion is that the relevant emissions inventory and ambient air quality data for purposes of evaluating interpollutant trading ratios should come from the general vicinity of the new source of emissions, and not from the vicinity of the locations from whence the ERCs are derived. Subject to satisfactory resolution of the interpollutant trading ratio, the Applicant has no comments to the proposed Conditions of Certification set forth in the Air Quality Section of the Preliminary Staff Assessment (PSA).

2. Based on questions raised by members of the public at the February 18, 2009 PSA workshop in Avenal, the Applicant has prepared a summary table (PSA Comment Table 1) that provides information on the maximum potential ambient criteria pollutant air quality impacts from the Project in the City of Avenal, which is located 6 miles southwest of the Project and in Kettleman City, which is located 8 miles southeast of the Project. The maximum potential ambient criteria pollutant air quality impacts in these nearest communities are much lower than the maximum concentrations reported in the PSA, and are also well below all established significance levels for air quality impacts. In short, the data confirm that the project will not result in unhealthy air quality levels under any operating conditions, under any weather conditions, at any location.

PSA COMMENT TABLE 1
MODELED MAXIMUM PROJECT IMPACTS

Pollutant	Averaging Time	Impact at City of Avenal [(a)] ($\mu g/m^3$)	Impact at Kettleman City [a] ($\mu g/m^3$)	Maximum Facility Impact [(b)] ($\mu g/m^3$)	Background Air Quality [(b)] ($\mu g/m^3$)	Most Stringent Ambient Air Quality Standard ($\mu g/m^3$)
NO_2	1-hour	33	5.0	190	137.2	339
	Annual	0.016	0.061	0.57	22.6	100
SO_2	1-hour	2.4	0.24	9.7	47.2	650
	3-hour	0.85	0.15	4.3	43.2	1,300
	24-hour	0.18	0.071	1.5	7.9	109
	Annual	0.0017	0.0060	0.09	2.6	80
CO	1-hour	286	42	2,175	4,111	23,000
	8-hour	47	14	337	2,489	10,000
PM_{10}	24-hour	0.21	0.12	2.9	254[(c)]	50
	Annual[(d)]	0.0082	0.035	0.8	46.3	20
$PM_{2.5}$	24-hour	0.21	0.12	2.9	58	35
	Annual[(d)]	0.0082	0.035	0.8	18	12

[a] Concentrations determined from modeling run with same input information in modeling files submitted to CEC on February 13, 2008, but with a single discrete receptor placed in the center of each city.

[b] Values from AFC Table 6.2-31.

[c] Value from PSA Air Quality Table 5.

[d] Annual Arithmetic Mean

A similar conclusion can be drawn with respect to the project's public health impacts. The public health impacts are estimated for various types of exposures at various locations. The maximum potential cancer risk is calculated based on exposure outdoors 24 hours per day and 365 days per year for 70 years. The acute health hazard index is the maximum potential short-term (1 hour) impact computed as the sum of the acute health hazard quotient[1] for each emitted toxic air contaminant with acute health effects. Similarly, the chronic health hazard index is the maximum potential long-term 70 years) impact computed as the sum of the chronic health hazard quotient[2] for each emitted toxic air contaminant with chronic health effects. The maximum potential health impacts in the communities of Avenal and Kettleman City are shown in PSA Comment Table 2; these values are much lower than the values at the worst-case location, and, once again are less than significant.

[1] The acute health hazard quotient for each toxic air contaminant having acute health effects is equal to the maximum 1-hour ground-level concentration of the toxic air contaminant divided by the acute Reference Exposure Level (REL) established by the California Office of Environmental Health Hazard Assessment.

[2] The chronic health hazard quotient for each toxic air contaminant having chronic health effects is equal to the maximum annual ground-level concentration of the toxic air contaminant divided by the chronic Reference Exposure Level (REL) established by the California Office of Environmental Health Hazard Assessment.

PSA COMMENT TABLE 2
SUMMARY OF POTENTIAL HEALTH RISKS

Receptor	Cancer Risk (Per Million)	Cancer Burden	Acute Health Hazard Index	Chronic Health Hazard Index
Maximum Individual Cancer Risk at worst-case location	0.46	0	0.19	0.023
Maximum Individual Cancer Risk at the Nearest Residence	0.017	0	0.082	0.0008
Maximum Individual Cancer Risk within the City of Avenal	0.0079	0	0.041	0.00045
Maximum Individual Cancer Risk within Kettleman City	0.028	0	0.0043	0.0014
Significance Level	10	1.0	1.0	1.0
Less than Significant?	Yes, all	Yes, all	Yes, all	Yes, all

Specific Comments

1. PM_{10} should be deleted from the Prevention of Significant Deterioration (PSD) applicability description on the third row in Air Quality Table 1 on page 4.1-2 because annual PM_{10} emissions would be less than 100 tpy.

2. The 92.5 $\mu g/m^3$ background concentration of $PM_{2.5}$ in Air Quality Tables 7, 13, and 14 should be replaced with 58 $\mu g/m^3$. The 92.5 $\mu g/m^3$ value was measured as a 24-hour maximum concentration during 2005 at the Corcoran monitoring station, but the National Ambient Air Quality Standard of 35 $\mu g/m^3$ is based on the 3-year average of the 98^{th} percentile values of monitored 24-hour concentrations. Hence, the $PM_{2.5}$ concentration that should be used as background in the three PSA tables for comparison with the standard is 58 $\mu g/m^3$, as shown in Application for Certification (AFC) Table 6.2-30. It is the averaging period definitions in national and California ambient air quality standards, along with the concentration values, that have been established to protect public health, not the maximum 24-hour values.

3. The discussions in the third paragraph on page 4.1-1, first two paragraphs on page 4.1-28, first paragraph at the top of page 4.1-29, the bottom paragraph on page 4.1-31, and the fourth bullet on page 4.1-34, related to the SOx: PM_{10} interpollutant offset ratio should be revised to conclude that a value of 1:1 is appropriate for this project at this time, based on the District's analysis in Appendix H of the October 30, 2008 Final Determination of Compliance, which is specific to new sources of PM_{10} emissions in Kings County. Different SOx:PM_{10} interpollutant offset ratios may be appropriate to projects in other locations or from analyses performed at other times.

   Relating to the consistency of the project SOx for PM_{10} offsets with the 2007 PM_{10} Maintenance Plan and the 2008 $PM_{2.5}$ Plan, as discussed in the bottom paragraph on page 4.1-31, the fourth paragraph on page 4.1-33, and the fourth bullet on page

4.1-34, we believe it would be appropriate to add the observation that the most recent analysis of an SOx:PM_{10} interpollutant offset ratio for the Project, presented in Appendix H of the District's October 30, 2008 Final Determination of Compliance, concludes that for a PM_{10} source in Kings County the ratio can actually be as low as 0.73:1 (i.e., reducing SOx is more effective at reducing total PM_{10} than reducing directly-emitted PM_{10} itself).

4. Because the Air Quality Table 11 should be consistent with the District's Final Determination of Consistency (FDOC) referenced in the footnote, the SOx emission rate in the second line should be refined from 160 to 159.6, and the third line values, which are intended to be double the values on the first and second lines, should be 1,579.2 lbs/day of NOx, 404.0 lbs/day of VOC, 565.4 lbs/day of PM10/PM2.5, and 319.2 lbs/day of SOx (the third line value of 11,182 lbs/day of CO is correct).

BIOLOGICAL RESOURCES

General Comments

1. The Summary of Conclusions (p 4.2-1and 4.2-2) and Conclusions (p. 4.2-25) state that staff is currently unable to identify the habitat compensation bank to be used for the project. The Applicant submits that the project will utilize either the Kern Water Bank (KWB) or the Kreyenhagen Hills Conservation Bank (KHCB) for habitat mitigation. California Department of Fish and Game (CDFG) and U.S. Fish and Wildlife Service (USFWS) have indicated that either of these banks will be acceptable for mitigation of impacts to the Swainson's hawk and kit fox. The Applicant has informed staff that they will pursue an agreement with KHCB. If an agreement cannot be reached with KHCB, then KWB will be used. Either bank will mitigate impacts to a level that is less than significant. Therefore, there does not appear to be any need to limit the project to one or the other prior to final negotiations to secure the credits.

2. Various locations in the PSA Biological Resources section refer to disturbance acreages, the applicant's ability to operate within defined linear facility corridors, and uncertainties and assumptions in disturbed acreage calculations (p. 4.2-6, 4.2-7, 4.2-10 through 4.2-16, 4.2-25 and 4.2-32). The Applicant has reconfirmed estimates of temporary construction and permanent disturbance acreages with the design engineers. The Applicant has confirmed with the design engineers that pipeline installations will be completed within a 25-foot wide disturbance corridor, and that the transmission tower installations will be completed within an approximately 3,600 square foot disturbance area per tower (2,400 sq ft. temporary disturbance plus 1,200 sq. ft permanent disturbance. These limited disturbance areas are expected to be achievable due to the relatively flat terrain and considering the design of these project features and anticipated geotechnical conditions. A revised Exhibit 83-2 with the revised calculation results for temporary and permanent disturbed acreage onsite and offsite is provided with these PSA comments. Furthermore, as stated by the Applicant during the February 18, 2009 workshop, temporary construction disturbances will be less than 24 months in duration at each disturbance location.

3. The Pipeline Impacts section (p 4.2-13) and the Conclusions section (p. 4.2-25) state that staff is currently unable to determine if the potable water pipeline route will be located in wildlife habitat. The potable water line route outside offsite is shown in Exhibit 92-1 provided with the response to Staff's Data Request No. 92. As stated in the response to Data Request No. 92, the potable water line will be located within the Avenal Cutoff Road right-of-way (ROW) where it is outside of the project site. The Avenal Cutoff Road ROW where the pipeline would be located does not provide wildlife habitat. The portion of the potable water pipeline that is on site will be located in existing farmland that provides habitat of limited value for some species. The farmland (limited habitat) disturbances are accounted for in the revised calculation results for temporary and permanent disturbed acreage provided with these PSA comments.

4. Various locations in the PSA Biological Resources section refer to the now resolved issue of setback distance from the canal and U.S. Bureau of Reclamation (USBR) ROW (p. 4.2-1, 4.2-6, 4.2-17, 4.2-18, 4.2-19, 4.2-22 and 4.2-25). As stated during the February 18, 2009 workshop, the Applicant has been unable to identify, nor has USFWS provided any scientific, regulatory or policy basis for the setback, but the Applicant agrees to provide the 300 foot setback measured from the USBR ROW, as requested by the USFWS as a settlement of this issue.

5. The last sentence of the second paragraph on page 4.2-5 states that, "[t]o the southwest of the project site, the USBR right-of-way is used by San Joaquin kit fox as a safe crossing for Interstate 5 between the agricultural areas and the natural habitat areas of the Kettleman Hills, Guijarral Hills, and Kreyenhagen Hills. The applicant suggests that the source of this statement should be cited, or the statement deleted.

6. At the end of proposed Condition of Certification BIO-4, there is a partial sentence that appears to be either extra text, or additional text is missing.

7. Suggested specific changes are provided below that reflect the above general comments and additional suggested changes for consistency and accuracy.

Specific Comments

Page 4.2-1 and 4.2-2

Avenal Power, LLC proposes to construct and operate the Avenal Energy project, a 600-MW natural gas-fired power plant proposed to be located approximately 2 miles east of Interstate 5 on Avenal Cutoff Road in the city of Avenal, Kings County, California. The project site is a 148-acre agricultural parcel in the city of Avenal's industrial zone. The site provides limited habitat for protected wildlife species such as the state threatened and federal endangered San Joaquin kit fox (*Vulpes macrotis mutica*) and state threatened Swainson's hawk (*Buteo swainsoni*) and there are movement corridors and foraging opportunities immediately adjacent to the site. California Energy Commission staff analyzed the potential impacts to biological resources that are expected to occur during construction and operation of the proposed project and has proposed Conditions for Certification BIO-1 through BIO-13 to limit these impacts.

Although the applicant does not agree with the scientific basis for a 300-foot setback from the United States Bureau of Reclamation right-of-way, the applicant has agreed to provide the 300-foot setback requested by CEC Staff and United States Fish and Wildlife Service as a settlement of this issue. In addition, ~~Currently the applicant, United States Fish and Wildlife Service, California Department of Fish and Game, and Energy Commission staff disagree on the setback that the project facilities should have from the adjacent United States Bureau of Reclamation right-of-way and the California Aqueduct San Luis Canal. The setback is important to preserve a larger area for foraging and movement for San Joaquin kit fox and other species such as the Tulare grasshopper~~

~~mouse (*Onychomys torridus tularensis*) and the San Joaquin pocket mouse (*Perognathus inornatus inornatus*) (Avenal Power 2008a, CNDDB 2008). The applicant proposes to establish a 300-foot setback from the top outside levee slope and includes the existing United States Bureau of Reclamation right-of-way in the calculation. The adjacent United States Bureau of Reclamation right-of-way is approximately 180 feet wide in the project area, but United States Fish and Wildlife Service would require and California Department of Fish and Game and staff would recommend a 300-foot setback that does not include the United States Bureau of Reclamation right-of-way and would result in a setback that would be located within the land owned by the Avenal Energy project and require a project site redesign for the storm water holding basin. Energy Commission staff has proposed Condition of Certification BIO-7 to address this setback issue, and Biological Resources Figure 1, at the end of this analysis, depicts the United States Bureau of Reclamation right-of-way, the applicant's proposed setback, and the United States Fish and Wildlife Service required setback.~~

~~The habitat compensation for permanent and temporary impacts is also an unresolved issue. T~~t~~he~~ applicant, United States Fish and Wildlife Service, and California Department of Fish and Game have agreed upon habitat compensation ratios of 1.1 acres for every acre permanently impacted by the Avenal Energy project and 0.3 acre for every acre temporarily impacted to mitigate impacts to the San Joaquin kit fox and Swainson's hawk. The United States Fish and Wildlife Service and the California Department of Fish and Game have explained to the applicant that providing land acquisition or other funds to either the Kern Water Bank (KWB) or Kreyenhagen Hills Conservation Bank (KHCB) would be appropriate for habitat compensation. The applicant has ~~not~~ informed ~~either agency or~~ staff that they will pursue an agreement for compensation at the KHCB. If an agreement cannot be reached with the KHCB, then KWB will be used. Either of these banks would mitigate habitat impacts to a level that is less than significant.~~staff as to which conservation bank they would use for compensation.~~ Staff has proposed Condition of Certification **BIO-9** to address the habitat compensation issue.

~~Due to the unresolved issues between the applicant, agencies, and staff, conclusions regarding significant direct, indirect, or cumulative impacts to biological resources cannot be drawn for the proposed Avenal Energy project in this Preliminary Staff Assessment (PSA). However, s~~Staff has included proposed conditions of certification that will implement the habitat compensation as well as other mitigation measures that will limit impacts to biological resources to a level that is less than significant.~~ address these issues and with their adoption, impacts would be mitigated~~.

Page 4.2-4 and 4.2-5

The city of Avenal is located in the southwest portion of the San Joaquin Valley, California in western Kings County, just south of the Fresno County line. Avenal Energy has proposed a project ~~on the Kettleman Plain~~ approximately two miles east of Interstate 5 and adjacent the California Aqueduct San Luis Canal (San Luis Canal) to the east. The project site is located on the floor of the San Joaquin Valley on an alluvial fan between the Kettleman Hills and the historic Tulare Lake basin. ~~Historically, the~~

~~Kettleman Plain consisted of native grasslands, scrublands, marshlands, and sloughs associated with Tulare Lake which has since been drained for agricultural use.~~ West of Interstate 5 are the Kettleman Hills, Guijarral Hills, and Kreyenhagen Hills where natural habitat still exists. Further to the west, on the opposite side of the Kettleman Hills from the project area, is the Kettleman Plain. The region consists of agricultural production ~~in the Kettleman Plain~~on the San Joaquin Valley floor, open spaces and petroleum production in the Guijarral Hills and Kettleman Hills, and open space and a habitat conservation bank in the Kreyenhagen Hills. The Kettleman Hills and Kreyenhagen Hills, in addition to areas farther north and west, support large expanses of grasslands consisting of mostly non-native annual grasses, which are successful at colonizing disturbed soils.

Page 4.2-5

By connecting large areas of isolated natural land, there should be a reduction in the harmful effects of habitat loss and fragmentation. The Plan lists three core San Joaquin kit fox populations, and the Kettleman Hills provide linkages between these core populations, and also most likely the smaller, more isolated populations in adjacent valleys (USFWS 1998, p. 132). It is important to maintain and enhance connecting corridors so San Joaquin kit fox and other species can move between the Kettleman Hills and the San Joaquin Valley's edge through the farmed gap between the Kettleman Hills and Guijarral Hills, and the Guijarral Hills and the Anticline Ridge, approximately 23 miles northwest of the project site (USFWS 1998, p. 135). All of these areas referenced as important in The Plan are west of Interstate 5 and would not be affected by the project. The San Luis Canal right-of-way has been identified by the USFWS as a kit fox migration route through the agricultural region on the San Joaquin Valley floor.

Page 4.2-6

The city of Avenal contains a mixture of agriculture, light industrial, light commercial, residential areas, and Avenal State Prison. The proposed project site is located eight miles south of Huron, 10 miles northwest of Kettleman City, and 16 miles east of Coalinga. The City of Avenal population center is six miles southwest of the project site. The proposed project site is located two miles east of Interstate 5 off Avenal Cutoff Road near the existing Avenal Water Plant (AWP) which treats the city's ~~–~~ drinking ~~waste~~water. The San Luis Canal of the California Aqueduct is located to the east and the remaining bordering properties are agricultural fields. The city of Avenal designated the project area as an industrial area in 1992 due to the proximity of the natural gas supply pipeline, transmission line, Pacific Gas and Electric's (PG&E) Gates Substation, and Interstate 5. Special plant or animal species once associated with the natural habitats historically found in the project area are currently only found in the few remaining natural areas in the hills to the west that have not been disturbed by agriculture or development.

Page 4.2-6 and 4.2-7

~~According to staff calculations, t~~The proposed Avenal Energy ~~site~~ facilities would be permanently located on a ~~29.4~~34.8-acre portion of a 148-acre parcel of agricultural land ~~(Avenal Power 2008a, Figure 2.3-12). Staff is somewhat unclear on the exact acreages to be impacted by the proposed project, so the acreages are likely to be refined in staff's Final Staff Assessment.~~ The project site and land surrounding has been in agricultural production as croplands, orchards, and vineyards for more than 50 years. The proposed project site as of the April 11, 2008 staff site visit was an irrigated grain field.

The applicant proposes as a settlement measure a 300-foot setback from the ~~top~~ edge of the ~~San Luis Canal, including the~~ USBR right-of-way ~~land in this setback,~~ to any project features onsite. The USBR right-of-way width in the area adjacent to Avenal Energy is approximately 180feet measured from the top edge of the canal according to the applicant (DRIRW 2008). The~~is setback is a concern for CDFG, USFWS, and staff which would prefer a~~ 300-foot setback~~.~~ proposed by the applicant will ~~from the property line that would not include any of the USBR right-of-way land and~~ result in a wider open space setback from the canal compared to existing conditions to be used as a wildlife corridor and habitat for state and federally listed species. The applicant ~~does not want~~has agreed to redesign the project's storm water holding basin ~~that could be impacted by using the agencies' calculation of~~to accommodate the setback~~., and therefore prefers the setback to include the USBR right-of-way land. On October 6, 2008, Avenal Power filed supplemental information regarding the setback which concluded "there is no scientific, legal, or policy evidence that a corridor beyond what Avenal proposes is necessary" (Avenal Power 2008h). The issue of the setback width remains unresolved between the applicant and the agencies. Biological Resources Figure 1, found at the end of this analysis, depicts the USBR right-of-way, proposed project features, the applicant's proposed setback, and the USFWS required setback.~~

Avenal Energy's linear facilities would consist of including new transmission lines, water supply pipelines, and natural gas supply pipeline. The transmission line would be 6.4 miles long, and the new poles would permanently occupy a total of 1.2 acres ~~according to the applicant and staff's calculations~~. The new transmission line would parallel an existing transmission line for a portion of the route to the Pacific Gas and Electric (PG&E) Gates Substation. The main water supply pipelines would come from the AWP, located directly adjacent to Avenal Energy to the northeast. A backup water supply would come from three existing agricultural wells to the northeast and southwest of the project site. The natural gas supply pipeline would travel 2.5~~6~~ miles southeast and south on Avenal Cutoff Road and to Plymouth Road to the existing PG&E Kettleman Compressor Station where the new natural gas pipeline will tap into an existing PG&E natural gas pipeline.

Page 4.2-10 and 4.2-11

The applicant states ~~in the AFC~~ that the power plant site facilities would permanently occupy approximately ~~25~~ 34.8 acres of the 148-acre parcel (See Applicants general comments to the PSA). ~~However, staff has concluded from Figure 2.3-12 (Avenal Power~~

~~2008a) that the power plant site will permanently occupy more than the applicant stated in the AFC. Subsequently, Exhibit 83-3 was filed as part of the Data Responses Round 2, and the permanent and temporary acreage impact according to Exhibit 83-3 would total 76.4 acres for the power plant site (Avenal Power 2008f). Exhibit 83-2 was a table of estimated acreage of construction and operations areas for the entire project, but the temporary and permanent acreage impacts do not match Exhibit 83-3. Biological Resources Table 2, below, shows the acreage breakdown for the project site based on Exhibit 83-3 and personal communication with the applicant (Avenal Power 2008f, Gilliland 2008).~~ The site would include a power plant island and switchyard, and storm water holding basin inside security fencing for a permanent impact of 31.9 acres (Avenal Power 2008g). In addition to the facilities inside the security fencing, primary and secondary site access roads will permanently occupy approximately 2.9 acres. ~~t~~Temporary impacts would be incurred from the heavy equipment staging area, two parking areas, an emergency staging area, and ~~permanent and~~ temporary construction disturbance for access roads and pipelines. These temporary disturbances total 39.3 acres of the 148-acre property. ~~as depicted on Exhibit 83-3 and AFC Figure 2.3-12.~~ Biological Resources Table 3, later in this analysis, lists the total permanent and temporary impacts associated with the linear facilities.

Staff has been informed of the potential for additional impacts through discussions with USFWS. If the temporary construction facilities~~-~~, such as the proposed laydown area on site would have roadbed gravel laid down on the soil and if it is not removed following construction activities, these impacts would be considered permanent impacts because the land would no longer be suitable for wildlife (USFWS 2008e). The applicant has responded to a USFWS letter for more information and stated that the roadbed gravel will be removed from temporary disturbance areas (Avenal Power 2008g). USFWS has stated that if the gravel or security fencing remains on the land 24 months or longer, the impact would be considered permanent and not temporary even if the gravel or security fence is eventually removed. The applicant has confirmed that the duration of temporary construction disturbance will be less than 24 months (See Applicants general comments to the PSA Biological Resources section).~~construction period for this project according to Figure 2.3-13 would be 27 months, therefore staff concludes those impacts would be permanent.~~

BIOLOGICAL RESOURCES Table 2 [1]
Avenal Energy Permanent and Temporary Acreage Impacts on the 148-Acre Parcel

Facility Structure	Permanent Acres	Temporary Acres	Total Acres
Area Inside Security Fencing	31.9 acres	0 acre	31.9 acres
Heavy Equipment Staging Area	~~3.1~~ ~~0~~ acres	~~0~~ 3.1acre	3.1 acres
Staff Parking	~~1.5~~ 0 acre	1.5 ~~0~~ acre	1.5 acres
Craft Parking	~~4.5~~ 0 acre	4.5 ~~0~~acre	4.5 acres
Construction Laydown	~~23.5~~ 0 acres[2]	23.5 ~~0~~ acre	23.5 acres
Emergency Staging Area	~~0.9~~ 0 acre	0.9 ~~0~~ acre	0.9 acre
Access Roads	~~6.5~~ 2.9 acres	2.4 ~~0~~ acre	5.3 ~~6.5~~ acres
Water pipelines onsite	0 acre	2.03 ~~2.7~~ acres	2.03 ~~2.7~~ acres
Natural gas pipelines onsite	0 acre	1.3 ~~1.8~~ acres	1.3 ~~1.8~~ acres
Total acres	34.8 ~~71.9~~ acres	39.3 ~~4.5~~ acres	74.1 ~~76.4~~ acres

Source: ~~Exhibit 83-3 from Avenal Power 2008f; Avenal Power 2008g; Gilliland 2008.~~ Applicant comments to PSA.

[1] ~~Staff is somewhat uncertain about the project's acreage impacts, and this uncertainty will need to be resolved in staff's Final Staff Assessment.~~

[2] ~~Considered a permanent impact by USFWS due to length of construction period, i.e. more than 24 months.~~

Page 4.2-12 and 4.2-13

The project proposes to build an onsite 230 kilovolt (kV) switchyard to connect new transmission lines traveling 6.4 miles offsite to the PG&E Gates Substation. The planned transmission lines would include 43 steel tubular towers at a height of 120 feet each and set 800 feet apart. The new transmission line would travel south for approximately ~~1~~ 0.4 mile from the southeast corner of the project site, then travel west for approximately ~~1.5~~0.7 mile~~s~~ until meeting with an existing transmission line traveling northwest which it would parallel for approximately ~~4~~ 5.0 miles and then turn west for approximately 0.3 mile until ending at the Gates Substation. ~~Both t~~The new transmission line ~~and the existing transmission line it would parallel,~~will have transmission line poles within established orchards and row crops. The applicant stated in ~~the AFC~~comments to the Staff;s PSA that the temporary disturbance for the transmission line installation would be ~~10,000~~2,400 square feet per pole installation site. In addition to this temporary disturbance, an average of 1,200 square feet would be permanently impacted ~~-~~for each pole. For the estimated 43 poles, there would be a total of 1.2 acres of permanent surface disturbance and 2.4 acres of temporary disturbance.~~,~~ ~~but changed this amount to 3,600 square feet in Data Response Round 2 (Avenal Power 2008a, Avenal Power 2008f). The total permanent land disturbance for the transmission line towers is 1.2 acres and the total temporary impact for installation of~~

~~the transmission lines is 3.6 acres based on the applicant's change in Data Response Round 2. Should the temporary area of disturbance change, the applicant would need to inform staff of the change and the habitat compensation would be recalculated to reflect this change.~~

Page 4.2-13 and 4.2-14

Avenal Energy would require the installation of natural gas, ~~sewer,~~ and water supply pipelines on and off site. The natural gas pipeline would be ~~2.6~~2.5 miles long and consist of a 20-inch diameter pipe connecting with the PG&E Kettleman Compressor Station east of the site. The natural gas pipeline would cross an established orchard to the west until reaching Avenal Cutoff Road, ~~and~~ then travel southwest on Avenal Cutoff Road, ~~south on an unpaved road, east on~~to Plymouth Avenue, and then ~~travel~~ south on an unpaved road near the east side of~~to~~ the Kettleman Compressor Station (See Exhibit 84-1). The natural gas pipeline would be buried beneath dirt roads at the edge of agricultural fields located along Avenal Cutoff Road and Plymouth Avenue after leaving the orchard. The total temporary offsite impact from the natural gas pipeline would be ~~9.6~~ 1.2 acres.

The sewer and water supply pipelines would be relatively short and located underground at the edge of agricultural fields. The sewer pipeline would be part of the sanitary system connected to an onsite septic tank and leach field.

The water supply pipelines would come from the Avenal Water Plant (AWP) on the northeast corner of the site, a potable water pipeline from the north side of Avenal Cutoff Road, and the agricultural wells northeast and southwest of the project site. The water supply pipeline to the AWP would be approximately 0.3 miles long and entirely onsite. The potable water pipeline would travel the same path as agricultural well 24-5 until offsite where it would travel approximately 0.75 mile offsite to tap into a suitable location. ~~The potable water pipeline is a late project change and staff has yet to determine if this area is of suitable habitat, therefore, the impact of the potable water pipeline will be considered temporary until further investigation by staff and the wildlife agencies.~~ Agricultural wells #18-1 and #18-4 are located at the edge of the USBR right-of-way within a 60-foot right-of-way (DRIRW 2008). The applicant stated during the Data Response and Issues Resolution Workshop (DRIRW) on July 1, 2008 that during installation of the 1.1 mile water pipeline from agricultural wells #18-1 and #18-4 to the project site, the pipeline would be at least 30 feet from the USBR right-of-way within the middle of the agricultural well right-of-way. Agricultural well #24-5 is located within an area of agricultural fields and the pipeline connection would be 1.3 miles long. The total temporary impact of the water pipelines would be ~~10.5~~5.4 acres.

All of the pipeline area of disturbance is calculated based on an installation width of 25 feet according to Data Response Round 2 (Avenal Power 2008f). Originally, the applicant stated in the AFC that the area of disturbance would be 50 feet wide. Typically, pipelines are installed with a width of 50 to 75 feet area of disturbance. ~~If the~~The applicant has confirmed their intent to maintain pipeline construction within a 25-foot wide area of disturbance ~~could not be met, staff would need to be informed to~~

~~recalculate the habitat compensation~~. The installation of pipelines will not result in permanent surface disturbance since the pipelines will be underground. The temporary construction impact of 5.4 acres ~~result in a significant~~is included in the disturbance acreage impact that will require habitat compensation at a ratio of 0.3 acres of compensation for every acre impacted. ~~to be less than significant because the temporary disturbance will occur on lands that provide some limited habitat value for sensitive species. Provided~~ Considering that habitat is compensated for, staff concludes that the pipelines would have a less than significant effect on biological resources.

BIOLOGICAL RESOURCES Table 3
Avenal Energy Off-site Linear Facility Permanent and Temporary Acreage Impacts

Facility Structure	Permanent Acres	Temporary Acres	Total Acres
Transmission Line	1.2 acres	~~3.6~~2.4 acre	~~4.8~~3.6 acres
Water Pipelines	0 acre	~~7.8~~5.4 acres	~~7.8~~5.4 acres
Natural Gas Pipeline	0 acre	~~7.8~~1.2 acre	~~7.8~~1.2 acres
Total acres	1.2 acres	~~19.2~~9.0 acres	~~20.4~~10.2 acres

Source: Exhibit 83-2 from Avenal Power 2008f, Gilliland 2008

Page 4.2-14

The applicant stated in the AFC that no sensitive species were found on the project site that would be impacted by additional noise during construction of Avenal Energy, however, sensitive species such as San Joaquin kit fox and burrowing owl were found within 0.5 mile of the project site in the USBR right-of-way. The proposed Avenal Energy site would be in an existing agricultural area where sensitive species could use adjacent areas. The applicant stated that overall there would be a 2 dBA increase in the noise during construction, at the nearest sensitive receptor, in this case a residence, which is ~~2.5~~1.3 miles away (Avenal Power 2008a).

Page 4.2-15

Projects constructed on "greenfield" sites, or undeveloped sites, can result in significant impacts to biological resources and require that habitat compensation be provided. Avenal Energy would be constructed on an agricultural site that provides limited habitat and foraging opportunities for two sensitive species, the Swainson's hawk (state listed threatened) and San Joaquin kit fox (state listed threatened and federally listed endangered). These impacts to sensitive species would require habitat compensation and other mitigation. Avenal Energy would permanently impact ~~73.1~~34.8 acres onsite and 1.2 acres off site, and temporarily impact ~~23.7~~39.3 acres onsite and 9 acres offsite. ~~as shown in Biological Resources Table 4 below (Avenal Power 2008f, Gilliland 2008).~~

Page 4.2-16 and 4.2-17

The preconstruction survey results would determine if any additional mitigation would be required by CDFG for impacts to active burrowing owl burrows as outlined in CDFG's *Staff Report on Burrowing Owl Mitigation* (CDFG 1995). Staff has proposed Condition of Certification **BIO-12** (Burrowing Owl Impact Avoidance and Minimization Measures) in

the event that burrowing owls are found within 500 feet of the project site or linears. Biological Resources Table 4~~, which is currently incomplete awaiting the informal data request information from the applicant,~~ lists the habitat compensation for permanent and temporary impacts.

BIOLOGICAL RESOURCES Table 4
Habitat Compensation Acreage Required for Avenal Energy

	Total Impacts (acres)	**Compensation Ratio**	**Compensation Acres Required**
Permanent • Power plant • Transmission line towers Total:	 ~~71.9~~34.8 1.2 ~~73.1~~36.0	1.1 to 1	~~80.4~~39.6
Temporary ~~• Natural gas pipeline • Water pipelines • Transmission line installation • Construction laydown and parking~~ Onsite Offsite Total:	 39.3 9.0 ~~23.7~~ 48.3	0.3 to 1	~~7.1~~14.5
TOTAL	~~96.8 acres~~ 84.3		~~87.5~~54.1 acres[3]

Source: Exhibit 83-2 from Avenal Power 2008f, Gilliland 2008

The applicant, CDFG, and USFWS have agreed upon habitat compensation ratios.~~, however, the applicant has not decided on which compensation bank they intend to utilize.~~ The ~~mitigation banks being considered for habitat compensation are the~~ Kern Water Bank (KWB) and~~or~~ the Kreyenhagen Hills Conservation Bank (KHCB) have both been deemed acceptable to CDFG and USFWS. The applicant has informed staff that they will pursue an agreement for compensation at the KHCB. If an agreement cannot be reached with the KHCB, then KWB will be used. Either of these banks would mitigate habitat impacts to a level that is less than significant.

~~The KWB is a unique compensation bank because it is the only one in the country which has the ability "to bestow incidental take coverage under the Federal Endangered Species Act (ESA)" for a project (USFWS 2008c). Avenal Energy could be covered in the KWB Master Permit for the federally listed species if they use the KWB as the compensation bank for the project (USFWS 2008c). However, the KHCB is possibly a better fit for biological resources for the project as it is located closer to the project site than the KWB. These issues will require further discussions between the applicant and the agencies to determine the best habitat compensation bank to mitigate impacts to the San Joaquin kit fox and Swainson's hawk.~~ To address the habitat compensation, staff proposes Condition of Certification **BIO-9**.

Setback from San Luis Canal to Maintain Wildlife Movement Corridor

Providing open space, a wildlife corridor or setback, to allow for wildlife movement even after the project is constructed is ~~essential~~ is considered important by USFWS to the region's protected species which currently use the area for a wildlife corridor. The ~~issue of the width of the proposed setback from the San Luis Canal and the proposed wildlife corridor has yet to be resolved as of this Preliminary Staff Assessment. The~~ applicant ~~proposes~~ has come to an agreement with CEC and USFWS staff as a settlement that that project facilities will be set back ~~-~~300 feet ~~the~~ to expand the existing wildlife corridor along the canal. The setback will be calculated from the ~~top of the outside levee slope to 300 feet west toward their property and includes the 180-foot wide~~ USBR right-of-way as requested by USFWS. ~~in the 300foot setback (DRIRW 2008). In consultation with USFWS and CDFG, the agencies have informed staff and the applicant that the setback should be 300 feet from the Avenal Energy property line, or where the USBR right-of-way ends. The 300-foot recommendation by the USFWS is consistent with what other projects in the region have had to provide for a similar wildlife corridor setback. In the agencies calculations, all of the 300-foot setback should occur within the land owned and controlled by Avenal Energy, and should not include any of the USBR right-of-way. The reason for this is that the USBR owns this land and reserves the right to cause a disruption to the land at any point and any time. Therefore, the USBR right-of-way cannot be identified as part of the mitigation land or included in the wildlife corridor setback width because it would not be held in perpetuity as is required for mitigation for this and other projects. The applicant has been informed of this USBR policy on more than one occasion by USBR and USFWS. The applicant has stated that they do not want to adopt the agency-proposed setback width because it would require rearrangement of the storm water holding basin. Biological Resources Figure 1, at the end of this analysis, depicts the USBR right-ofway, the applicant's proposed setback, proposed project features, and the recommended setback of USFWS, CDFG, and staff.~~

~~The reason the agencies would require the wider 300-foot setback is to allow for a wider area for habitat and wildlife corridor rather than narrower section that could limit wildlife movement. The USBR right-of way is used by San Joaquin kit fox for movement and safe passage while crossing Interstate 5 between the agricultural areas and the natural habitat areas still available to the west. The agencies were not involved in the permitting of the adjacent Avenal Water Plant (AWP) which has created a narrow section or 'pinch point' which currently may limit wildlife movement near the proposed Avenal Energy site.~~

Page 4.2-18 and 4.2-19

~~On October 6, 2008, Avenal Power filed supplemental information regarding the setback which concluded "there is no scientific, legal, or policy evidence that a corridor beyond what Avenal proposes is necessary" (Avenal Power 2008h). The applicant's supplemental information consisted of a letter by TRC, the applicant's consultant; and a report by Bumgardner Biological Consulting (BBC) (Avenal Power 2008h). USFWS reviewed the supplemental information and provided staff with their opinion on October 30, 2008 (USFWS 2008f).~~

~~The USFWS believes that the information provided in the BBC report actually supports the USFWS opinion that the "San Luis Canal is important to the San Joaquin kit fox and the lands adjacent to the canal are used more often than the lands farther away from the canal" (USFWS 2008f). BBC contacted Dr. Brian Cypher, with California State University, Stanislaus Endangered Species Recovery Program (ESRP), who is a leading researcher on San Joaquin kit fox. Dr. Cypher was quoted in the BBC report stating that researchers "don't know what constitutes a suitable corridor for the species (San Joaquin kit fox)" (Avenal Power 2008h, USFWS 2008f). The USFWS also contacted Dr. Cypher for further clarification of his statements made to Mr. Bumgardner. Dr. Cypher replied stating that he told Mr. Bumgardner that no one really knows what constitutes an optimal corridor for the species, but that larger is better and a 300-foot setback would be better than a 125-foot setback (USFWS 2008f).~~

~~The USFWS also discussed the setback on the 2004 Section 7 Consultation for the proposed Monte Dorado Project in Santa Nella, Merced County that the BBC report discussed. The corridor designation for this project was in an area where the local geography is very complicated compared to the geography of the proposed Avenal Energy (USFWS 2008f). For the Monte Dorado Project the USBR right-of-way was included as part of the San Joaquin kit fox corridor setback without the authorization of the USBR (USFWS 2008f). As a result of the actions in Santa Nella, the USBR declared they no longer will allow their lands and right-of-ways to be used as mitigation for other applicant's biological opinions and USFWS is currently in negotiations to correct the corridor situation at Santa Nella (USFWS 2008f).~~

~~The letter from TRC in the supplement filing provides two arguments for the inclusion of the USBR right-of-way as part of the setback. First, they cite a letter sent to the EPA from USFWS in 2002 regarding the Avenal Cogeneration and Power Plant Project filed with the Energy Commission in 2001 (Avenal Power 2008h, USFWS 2002, USFWS 2008f). USFWS states that the 2002 letter "was for a different energy project which had a softball field and other unfenced San Joaquin kit fox compatible facilities that would be located next to the San Joaquin kit fox corridor" (USFWS 2008f). This previous project was also withdrawn from consideration before the applicant and USFWS could come to an agreement on the setback width and before any biological opinion was issued (USFWS 2008f). Second, TRC is of the opinion that the project "will not have any material impact on the potential movements of the San Joaquin kit fox along the canal as long as there is no disturbance in the canal right-of-way" (Avenal Power 2008h, USFWS 2008f). This argument is refuted by the USBR declaring that none of their lands or right-of-ways will be used as mitigation (USFWS 2008f). The USBR also has stated that there will likely be disturbance in the right-of-way, which would mean that all of the 300-foot setback should be on Avenal Power property because that is the only way that the mitigation for the wildlife corridor can be achieved. The applicant has been informed of this USBR policy on more than one occasion by USBR and USFWS.~~

~~The USFWS has concluded that the information provided by TRC and BBC supports rather than refutes the USFWS requirement that the San Luis Canal is an important corridor for the San Joaquin kit fox. Furthermore, it has concluded that the setback distance should be measured from the edge of the applicant's property boundary, and~~

~~that the appropriate setback distance should be at least 300 feet measured on the applicant's property rather than the 125 feet that would occur with the applicant proposed measurement (USFWS 2008f). The USFWS is still requiring a 300-foot setback consisting entirely of land owned by the applicant and not any of the USBR right-of-way.~~

With the recommendations for the setback (applicant's "buffer zone") management, ~~if~~ and the applicant's agreement~~s~~ to establish the agency required 300-foot width, and if USFWS approves the fencing type to be used for the applicant proposed wildlife compatible fence, staff concludes that there would not be a significant impact to any sensitive biological resources on site. Staff has proposed Condition of Certification **BIO-7** to implement the establishment and maintenance of the setback.

Page 4.2-21 and 4.2-22

The proposed Avenal Energy site occurs in the city of Avenal industrial zone on a parcel of land currently farmed in field crops. The applicant states that the foraging opportunities for wildlife species are limited on row crop land and that the removal of this land from agriculture would not significantly affect the local common and special status species in the vicinity (Avenal Power 2008a). The applicant has agreed with USFWS and CDFG on habitat compensation ratios of 1.1 acres for every 1 acre permanently disturbed and 0.3 acre for every 1 acre of temporarily disturbed land. ~~However, the conservation bank to be used has not yet been agreed upon between the applicant and agencies.~~ Due to the distances PCE, Midway, and GVE are from the Avenal Energy site, the lack of other new development in the City of Avenal industrial zone, the low urbanization pressures in the area, and the habitat compensation Avenal Power would obtain, the proposed Avenal Energy site would not significantly affect biological resources and therefore would not contribute to any cumulative impact concerns for habitat loss.

Wildlife Movement

The Avenal Water Plant (AWP) is located adjacent to Avenal Energy on the northeast corner of the site and supplies the City of Avenal with water taken from the San Luis Canal. The AWP has no setback from the USBR right-of-way, which is approximately 50 to 180 feet wide at the AWP. The project will increase development and human presence adjacent to the water treatment plant, which already results in a ~~This presents a cumulative impact concern for Avenal Energy setback if the applicant does not agree to the USFWS and CDFG setback width because the AWP has created a narrow point in the USBR right-of-way which could restrict wildlife movement. If Avenal Power does not agree with the agencies setback, the project would contribute to further~~ narrowing of the USBR right-of-way and restriction to wildlife movement. ~~Larger areas are needed to allow the wildlife corridors to remain useful to animals such as the San Joaquin kit fox which is known to use the USBR right-of-way through the agricultural areas to cross Interstate 5 safely to the natural areas remaining to the west. If Avenal Power would establish a~~ Considering that the 300-foot setback that the applicant has agreed to with CDFG, ~~and~~ USFWS and CEC staff will increase the available corridor width adjacent to

the power plant, staff believes that the cumulative impact will be less than significant~~has recommended, staff would conclude that Avenal Energy would not cause significant cumulative impacts to the biological resources that currently use the USBR right-of-way habitat for foraging and as a wildlife movement corridor.~~

Page 4.2-28

BIO-4

Verification: Biological Monitor notifies the CPM immediately (and no later than the ~~following~~ morning ~~of~~ following the incident, or Monday morning in the case of a Friday or weekend incident) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities. The project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem.

Page 4.2-30

BIO-6

Verification: The project owner shall provide the specified document at least 60 days prior to start of any site (or related facilities) mobilization.

The CPM, ~~in consultation with~~considering comments received from the USFWS, if any, and any other appropriate agencies, will determine the BRMIMP's acceptability within 45 days of receipt. If there are any permits that have not yet been received when the BRMIMP is first submitted, these permits shall be submitted to the CPM ~~and the USFWS~~ within five (5) days of their receipt and the BRMIMP shall be revised or supplemented to reflect the permit condition within 10 days of their receipt by the project owner. Ten days prior to site and related facilities mobilization the revised BRMIMP shall be resubmitted to the CPM.

Page 4.2-31 and 4.2-32

BIO-7 Any time the project owner modifies or finalizes the project design they shall incorporate all feasible measures that avoid or minimize impacts to the local biological resources, including:

1. Design, install, and maintain transmission line poles, access roads, pulling sites, and storage and parking areas to avoid identified sensitive resources;

2. Eliminate any California Exotic Pest Plants of Concern (CalEPPC) List A species from landscaping plans;

3. Establish a plan to return the site to agricultural production after construction;

4. Prescribe a road sealant that is non-toxic to wildlife and plants that will limit dust on dirt roads;

5. Design, install, and maintain facility lighting to prevent side casting of light towards wildlife habitat;

6. Implement a 300 -foot setback from the western edge of the USBR ROW ~~east~~ southwest ~~in~~to the closest developed Avenal Energy site facilities and implement the "Recommended Buffer Zone Management Guidelines":

7. Install a wildlife compatible perimeter fence to allow for unobstructed and unhampered wildlife movement through the fence; and

8. Implement measures to ensure that construction disturbances do not exceed the acreage compensated for pursuant to BIO-9. ~~Do not exceed a 25 foot wide disturbance corridor for water and natural gas pipeline installation and 3,600 square foot area of temporary disturbance for transmission tower installation as stated in Exhibit 83-2 (Avenal Power 2008f).~~

Page 4.2-32

BIO-8 The project owner shall implement the following measures to manage their construction site, and related facilities, in a manner to avoid or minimize impacts to the local biological resources.

1. Install temporary fencing and provide wildlife escape ramps for construction areas that contain steep walled holes or trenches if outside of an approved, permanent exclusionary fence. The temporary fence shall be hardware cloth or similar materials that are approved by USFWS. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals by the Designated Biologist or Biological Monitor;

2. Make certain all food-related trash is disposed of in closed containers and removed at least once a week from the project site;

3. Prohibit feeding of wildlife by staff and subcontractors;

4. Prohibit non-security related firearms or weapons from being brought to the site;

5. Prohibit pets from being brought to the site;

6. Report all inadvertent deaths of special-status species to the appropriate project representative. Injured animals shall be reported to CDFG and the project owner shall follow instructions that are provided by CDFG. The Sacramento USFWS Office shall be notified in writing within three working days of the accidental death or injury to a SJKF during project related activities. Contact USFWS and CDFG for specific notification procedures;

7. Minimize use of rodenticides and herbicides in the project area and prohibit the use of ~~chemicals~~ rodenticides and pesticides known to cause harm to amphibians. If rodent control must be conducted, zinc phosphate or a~~n equivalent~~ similar product shall be used;

8. Project-related vehicles shall observe a 20-mph speed limit in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Off-road traffic outside of designated project areas is prohibited.

9. Fence areas with sensitive species and habitat such as the USBR right-of-way, the soil berms to the south of the site, and areas of nesting tricolored and yellow-headed blackbirds to 250 feet from nearest active nest between mid-March through August;

10. Design transmission line poles, access roads, pulling sites, and storage and parking areas to avoid identified sensitive resources;

11. Establish a 300-foot minimum buffer/avoidance zone measured from the edge of the USBR right-of-way to any project related buildings, other structures, impervious surfaces, outdoor activity areas and ornamental landscaped areas to minimize potential disturbance to the San Joaquin kit fox and other sensitive species;

12. Design and construct transmission lines and all electrical components to reduce the likelihood of electrocutions of large birds; and

13. Use hooded lights on the project facilities and face lights downward and away from the San Luis Canal.

Page 4.2-33

BIO-9 The project owner shall provide habitat compensation for temporary and permanent impacts to San Joaquin kit fox and Swainson's hawk at a 1.1:1 ratio for permanent impacts and 0.3:1 ratio for temporary impacts approved by USFWS and CDFG. The same mitigation lands may be used for both species provided that it is suitable habitat for both species.

Page 4.2-34 and 4.2-35

BIO-12 If burrowing owls are found during preconstruction surveys within 500 feet of the project site or linear facilities, then the CDFG burrowing owl guidelines (1995) shall be implemented as follows:

1. Monitor burrowing owl pairs within 500 feet of any activities that exceed ambient noise and/or vibration levels;

2. ~~Establish a 500-foot setback from any active burrow and c~~Construct ~~additional~~ noise/visual barriers (e.g., haystacks or plywood fencing) to shield ~~the~~ any active burrow that is within 500 feet from construction activities, unless CDFG deems such measures to not be necessary based on site-specific conditions. Post signs (in both English and Spanish) designating presence of sensitive area;

3. Passively relocate all owls occupying burrows within ~~that will be temporarily or permanently impacted by~~ the project construction footprint, if any, and implement the following CDFG take avoidance measures:

   A. Occupied burrows shall not be disturbed during the nesting season (February 1 – August 31) unless a qualified biologist can verify through non-invasive methods that egg laying/incubation has not begun or juveniles are foraging independently and able to fly;

   B. A qualified biologist must relocate owls, confirm that owls have left burrows prior to ground-disturbing activities, and monitor the burrows. Once evacuation is confirmed, the biologist should hand excavate burrows and then fill burrows to prevent reoccupation; and

   C. Relocation of owls shall be approved by and conducted in consultation with CDFG.

4. Submit a Burrowing Owl Mitigation and Monitoring Plan to CDFG for review and approval prior to relocation of owls (and incorporate it into the project's BRMIMP) to CDFG and CPM for approval no less than 10 days prior to completing owl relocation and monitoring.

Verification: The project owner shall submit a report to CDFG and the CPM at least ~~30~~ 20 days prior to the start of site mobilization that describes when surveys were completed, observations, mitigation measures, and the results of the measures. If owls are to be relocated, the project owner shall coordinate with CDFG on the number of new burrows, their locations, and how any created burrows and compensation land will be protected for the life of the project in a Burrowing Owl Mitigation and Monitoring Plan. Within 30 days after completion of owl relocation and monitoring, and the start of ground disturbance, the project owner shall provide written verification to the CDFG and CPM that burrowing owl mitigation measures have been completed.

CULTURAL RESOURCES

General Comments

1. A revised Exhibit 83-2 with the revised calculation results for temporary and permanent disturbed acreage onsite and offsite is provided with these PSA comments.

2. Various locations in the PSA Biological Resources section refer to (the need for more information related to the project's potential to impact the Tesla–Midway 230-kV transmission line, and uncertainty in whether or not the line may be eligible for the CRHR. Staff requested more information on possible modes of avoidance of the impact which the applicant may propose. In response to these questions in the PSA, the following paragraphs provide clarifying information.

   Changes to the Tesla-Midway 230-kV transmission line, if any, are expected to be minor in the context of the transmission line as a potential build-environment cultural resource. The specifics of the project's interconnection and changes to the existing transmission line, if any, will be wholly decided by PG&E, as previously submitted in the applicant's response to Staff's Data Request No. 81. Until the CAISO/PG&E prepares a Facilities Study, or other equivalent study as provided for in the CAISO's Open Access Transmission Tariff, for this specific project, it is uncertain whether there would be any need to modify the existing 230 kV line. The worst-case scenario anticipated by the Applicant would be the need to replace one or two towers to change the height of the conductors for a short segment of the line adjacent to the Gates substation to facilitate the crossing of the new Avenal Energy transmission line. The Applicant will be responsible for costs associated with the interconnection. In the response to Data Request No. 81, the Applicant adopted Staff's recommendation from Data Request No. 82 and committed to suggesting to PG&E that the new Avenal Energy transmission line towers be made taller or shorter, if needed, in preference to modifying the existing 230 kV line towers.

   CEC staff concludes that the Tesla–Midway 230-kV transmission line, "could be potentially significant under CRHR Criterion 1—associated with events that have made a significant contribution to the broad patterns of our history—because, along with Gates Substation, it appears to be an early and essential component of the California post-WWII infant electrical grid, with two of the most important 1950s steam turbine power-generating plants, Moss Landing and Morro Bay, distributing their output through this early infrastructure"(PSA, page 4.3-25). CEC staff is uncertain of a period of significance for the Tesla–Midway 230-kV transmission line but make a tentative assignment to the 1950s (PSA, page, 4.3-25), presumably relating to the period when the two power plants came on line. Regarding the historical integrity of the transmission line, staff suggests that "[F]or Criterion 1, sufficient integrity to convey historical significance can be as minimal as just not appearing superficially anachronistic."

The Applicant has not obtained any more information regarding the history of the Tesla–Midway 230-kV transmission line than what has been provided to CEC to-date. Additional information from the owner of the transmission line (PG&E) is unlikely to be forthcoming. The Applicant believes that the assessment of California Register of Historic Resources (CRHR) eligibility by architectural historian Wendy Tinsley supports a conclusion that the transmission line does not appear to be historically significant and that significant changes in the infrastructure of the transmission line impair the integrity of the line under any CRHR eligibility criteria used to evaluate it historical significance.

Regardless of whether or not the transmission line is potentially CRHR eligible, the degree of impact that could potentially result from the removal of up to two existing towers would not appear to rise to the level of a significant impact. The Tesla–Midway 230-kV transmission line extends approximately 200 miles from near Buttonwillow in Kern County to the Tesla Substation in Alameda County with steel lattice towers spaced on the order of 1,100 feet apart, for a total on the order of 1,000 towers installed along the length of the transmission line. Replacing one or two steel lattice towers would have no significant impact on the historical integrity of the transmission line, particularly considering that tower replacement, if needed, would be in proximity to the Gates Substation where the original transmission line was segmented when the Gates substation was constructed.

In an effort to further alleviate Staff's concern over the potential for impact to the Tesla–Midway 230-kV transmission line, in the event that PG&E does ultimately determine that modifications to the existing line cannot be practically avoided, then the Applicant agrees to have a qualified architectural historian document any affected towers according to a modified Level III Historic American Engineering Record standard (Federal Register Vol. 68, No. 139, pages 43159-43162). CEC has made such documentation a Condition of Certification in other cases where a CRHR-eligible built-environment resource is planned for removal in conjunction with a siting case (e.g., see the Morro Bay Power Plant Project 3rd Revised Presiding Members Proposed Decision, Condition of Certification CUL-16, pages 444-445). A modified documentation process is proposed due to the transmission line not appearing to be eligible for inclusion on the National Register of Historic Places. The proposed modified Level III documentation will include representative photography of the line and individual tower types to be submitted in 5 x 7 or 8 x 10 size on archival quality paper; preparation of a site plan or linear location map of the affected segment and location of individual transmission towers within the alignment; and descriptions of the Tesla–Midway 230-kV transmission line (as can be obtained from public and non-confidential sources) as well as descriptions of each tower type installed. This modified Level III documentation will be submitted to the Avenal library and the Southern San Joaquin Valley Information Center for inclusion in their respective archives.

3. Suggested specific changes are provided below that reflect the above general comments and additional suggested changes for consistency and accuracy.

Specific Comments

Page 4.3-1

Staff's cultural resources analysis has determined that the proposed AE would have no impact on known significant archaeological resources, ethnographic resources, historic districts, or cultural landscapes.~~, but could have a significant adverse impact on a potentially CRHR-eligible built-environment resource, t~~The Tesla–Midway 230-kV transmission line~~, possibly a constituent of the early California electrical grid, dating to the 1950s~~ may be impacted by the project, and staff believes that this resource is potentially significant. Staff has proposed condition of certification CUL-8 to assure that impact to the Tesla-Midway 230-kV transmission line, if any, will be less than significant.~~. Before staff can recommend mitigation for this potentially significant impact, staff needs more information on possible modes of avoidance of the impact which the applicant may propose.~~

Page 4.3-4

The vicinity of the proposed AE site is relatively flat. The land use historically has been almost exclusively for agriculture—mostly orchards—but the proposed AE site has been annexed by the City of Avenal and zoned for industrial use. The 148-acre proposed AE site, with an elevation range of 320–360 feet above mean sea level, is on the west side of the San Joaquin Valley, about two miles east of the Kettleman Hills and Interstate 5 and about six miles northeast of the City of Avenal. The California Aqueduct's San Luis Canal is located approximately 200 feet northeast of the proposed AE site, but there are no natural perennial streams in the project vicinity. While the proposed AE site will be owned by APC, the routes of the linear facilities pass across privately owned farmland by means of easements acquired by APC. Within the 148-acre AE parcel, the area permanently required for the proposed plant is about 34.8 acres. An additional 1.2 acres of permanent disturbance would occur offsite for transmission line tower footings between the site and the Gates substation. In addition to these permanent disturbances, ~~T~~the area that would be used temporarily during construction is about an additional ~~34~~ 39.3 acres onsite and 9 acres offsite. The unused part of APC's parcel would be returned to agricultural use after the plant is constructed (Avenal Power 2008a, pp. 2-3; 2-11; 6.3-2; 6.4-1; 6.5-2; Avenal Power 2008f, exh. 83-3 (revised fig. 2.3-12)).

The proposed AE project consists of the construction and continuous operation of a 600-MW, combined-cycle, electrical power-generating facility. The primary installed equipment would include two natural-gas-fired combustion turbine generators, each with a heat recovery steam generator, which would use waste heat from the combustion turbine generators to drive a steam turbine generator and thus produce more power. Additional support structures would include an air-cooled condenser, water treatment facilities, an on-site switchyard, a ~~4.15-acre~~ storm-water holding pond; administrative and control buildings, site access roads, water and natural gas pipelines, and a 230-kV transmission line (Avenal Power 2008a, pp. 2-9–2-10).

Page 4.3-32

Footing holes for 43 new tubular steel monopoles for the 6.4 miles of new 230-kV transmission line would be excavated (Avenal 2008a, pp. 1-7; 2-49; table 2.3-7). This activity could potentially impact buried archaeological resources, unidentified at this time, to the extent ~~of the approximately 100-x-100-foot construction area (APC cites 10,000 square feet of disturbance) for each monopole and the depth of~~ that the footing excavations for the monopoles ~~if~~ is greater than five feet. With the exception of footing excavations, typically less than several feet in diameter, other construction and operations disturbances for the transmission line towers will not have the potential to disturb cultural resources, because disturbances will be surficial.

Page 4.3-32

A trench would be excavated for the installation of the proposed new, approximately 2.5~~2.4~~-mile-long, 20~~16~~-inch-diameter natural gas pipeline connecting the proposed power plant to a PG&E natural gas trunk line at the Kettleman Compressor Station to the west of the proposed AE site (Avenal Power 2008xx). Most of this trench would be excavated in the road beds of Avenal Cut-Off Road, 34 ½ Avenue, and Plymouth Avenue, except for some 2,000 linear feet off site and 2,300 feet onsite running between the proposed project's on-site equipment and Avenal Cut-Off Road (Avenal 2008a, pp. 2-33, 2-48; Avenal 2008f, exh. 83-2, See updated acreage table). The trench excavation not confined to the existing road beds could potentially impact buried archaeological resources, unidentified at this time, to the extent of an area ~~2,000~~4,300 feet long and 25 feet wide (Avenal 2008f, exh. 83-2), and to the depth of any ground disturbance in the native soils greater than five feet. The trench excavation confined to existing road beds could potentially impact buried archaeological resources, unidentified at this time, to the extent of the length of the pipeline in the road beds, to the width of the rights-of-way of the roads (80-foot-wide right-of-way for Avenal Cutoff Road and 60-foot-wide right-of-way for Plymouth Avenue) and to the depth of ground disturbance in native soils. (Avenal Cut-Off Road has not been cultivated since at least 1936, so the presumption of five feet of agricultural disturbance cannot be made for the ground beneath the road. Staff assumes the same for 34 ½ Avenue and Plymouth Road.)

Page 4.3-33

A new site access road and secondary access road would entail a construction impact area ~~2,600 feet long and 50 feet wide~~totalling 2.4 acres (~~Avenal 2008f,~~ exh. 83-2 ~~Reference new acreage table~~). The ground disturbance involved in constructing this road could directly impact buried archaeological resources, unidentified at this time, to the extent of the area and depth of the excavations, if in excess of five feet.

Page 4.3-34

APC identified three built-environment resources old enough to be potentially eligible for the CRHR and also possibly subject to impacts from the proposed project: the Kochergen Farms Agricultural Complex residence and outbuildings; PG&E's Gates

Substation; and PG&E's Tesla–Midway 230-kV transmission line (Avenal Power 2008b, att. C.3, pp. 12–13). APC recommended none of these resources as eligible for the CRHR. ~~, assessed the proposed project's potential impacts on them as consequently not significant, and provided no mitigation measures (Avenal 2008a, p. 6.7-14).~~ While agreeing with APC's recommendation that the Kochergen Farms Agricultural Complex is not eligible for the CRHR, staff concluded that both the Gates Substation and the Tesla–Midway 230-kV transmission line could be eligible for the CRHR under Criterion 1 (associated with events making an important contribution to the broad patterns of our history).

Page 4.3-34

- The raising (or lowering) of up to two steel lattice towers of the Tesla–Midway 230-kV transmission line near the substation (Pacific Legacy 2006, p. 5; Avenal Power 2008f, Data Response 81) could impact the integrity of materials and integrity of design of two of the original towers of the old transmission line if altering the towers entails the insertion of lattice segments of a geometric design different from the original or the removal of lattice segments.

Page 4.3-35

~~Altering the steel lattice towers of the Tesla–Midway 230-kV transmission line would be a significant impact on the integrity of materials and integrity of design of the old line, unless done in a manner compatible with the existing design and materials (see discussion, above, in the "Built Environment Resources Identified and Evaluated for Historical Significance" subsection). Staff asked that APC project engineers consider the feasibility of altering the height of the equivalent towers of the proposed new line instead.~~ APC stated that the~~is~~ design ~~aspect~~ of their proposed new transmission line would be determined by PG&E, and that little, if any, physical alteration to the Tesla-Midway 230 kV line is expected to be needed. ~~but~~ The Applicant has agreed to request that PG&E allow the new transmission line's poles at the crossing of the two lines to be either taller or shorter, if feasible, so the Tesla–Midway towers would not have to be modified (Avenal Power 2008f, Data Response 81). If ~~this project design change is not feasible, before recommending appropriate mitigation, staff needs more information on possible modes of avoidance of this impact which the applicant can propose~~PG&E cannot avoid changes to the Tesla-Midway 230 kV-line, then the worst anticipated case would be the replacement of one or two towers near the substation. Changing up to two towers would not significantly affect the resource integrity considering that there are on the order of 1,000 towers along the 200 mile line.. Staff has proposed condition of certification CUL-8 to assure that impacts to this potential resource are avoided or, if avoidance is not feasible, that the one or two existing towers required to be modified be documented.

Page 4.3-35

Staff identified only one potentially significant cultural resource that the proposed project ~~would significantly~~could impact, the Tesla–Midway 230-kV transmission line. ~~Before~~

~~recommending appropriate mitigation, staff needs from~~Staff has proposed condition of certification CUL-8 to assure that the applicant requests that PG&E design the interconnection to the Gates Substation ~~more information on possible ways~~ to avoid ~~this significant project-related~~ impact to this potential resource or, if avoidance is not practical, that the impacted towers be documented.. Due to the limited potential impact to two towers to this potentially significant cultural resource, the potential impact of raising or replacing two existing towers is not a significant adverse impact. Staff's proposed additional mitigation measures for identifying, evaluating, and possibly mitigating impacts to previously unknown archaeological resources discovered during construction (**CUL-1** through **CUL-7**) would ensure that impacts to significant archaeological discoveries would be mitigated to a less-than-significant level.

Page 4.3-37

Staff's cultural resources analysis has determined that the proposed AE would have no impact on known significant archaeological resources, ethnographic resources, historic districts, or cultural landscapes.~~, but could have a significant adverse impact on a potentially CRHR-eligible built-environment resource, t~~The Tesla–Midway 230-kV transmission line~~, possibly a constituent of the early California electrical grid, dating to the 1950s~~ may be impacted by the project, and staff believes that this resource is potentially significant. Staff has proposed condition of certification CUL-8 to assure that impact to the Tesla-Midway 230-kV transmission line, if any, will be less than significant.~~. Before staff can recommend mitigation for this potentially significant impact, staff needs more information on possible modes of avoidance of the impact which the applicant may propose.~~

Page 4.3-48

Considering the general comments above and recognizing Staff's concerns regarding the Tesla–Midway 230-kV transmission line, the Applicant proposes a new Condition of Certification, CUL-8, as follows:

CUL-8

The project owner shall suggest to PG&E in writing that, if feasible, the Avenal Energy transmission line interconnection to the Gates substation be designed to avoid changes to the existing Tesla–Midway 230-kV transmission line towers. If the Facilities Study, or other equivalent study as provided for in the CAISO's Open Access Transmission Tariff, completed by CAISO/PG&E for the project indicates the need for modifications to the existing Tesla–Midway 230-kV transmission line towers in order for the project's new transmission line to cross the Tesla–Midway 230-kV transmission line towers, then the project owner shall document any affected towers according to a modified Level III Historic American Engineering Record standard (Federal Register Vol. 68, No. 139, pages 43159-43162). Documentation shall include: (1) representative photography of the line and individual affected towers to be submitted in 5 x 7 or 8 x 10 size on archival quality paper; (2) preparation of a site plan or linear location map of the affected segment and location of individual transmission towers within the alignment; (3) descriptions of the Tesla–Midway 230-kV transmission line as can be obtained from public and non-confidential sources; (4) descriptions of each tower type installed. This

modified Level III documentation shall be submitted to the CPM, and to the Avenal library and the Southern San Joaquin Valley Information Center for inclusion in their respective archives. Documentation shall be prepared by a qualified architectural historian with training and background conforming to the U.S. Secretary of the Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, Part 61. The resume of the architectural historian shall be provided to the CPM and shall demonstrate to the satisfaction of the CPM the appropriate training and experience to effectively implement this condition.

Verification:

If the project transmission line interconnection will require modifications to the existing Tesla–Midway 230-kV transmission line towers, then:

1. No less than 90 days prior to any work on the Tesla-Midway 230-kV transmission line, the project owner shall provide to the CPM:

- A copy of the Facilities Study, or other equivalent study as provided for in the CAISO's Open Access Transmission Tariff.
- Copies of written correspondence between the project owner and PG&E documenting the project owner's attempt to encourage PG&E to design the project interconnection to avoid impacts to the Tesla–Midway 230-kV transmission line towers.
- The name and resume of a qualified architectural historian proposed to complete the transmission line documentation work. The CPM shall approve or reject the selected architectural historian within 15 days of receiving the resume.

2. No less than 30 days prior to any work on the Tesla-Midway 230-kV transmission line, the project owner shall provide a copy of the documentation report to the CPM, along with documentation that copies of the report have been submitted to the Avenal library and the Southern San Joaquin Valley Information Center.

LAND USE

General Comments

1. The Applicant disagrees with the conclusion reached by Staff regarding the impact to prime farmland (p. 4.5-8, 4.5-10, 4.5-16). The city of Avenal definitively addressed the conversion of prime farmland when it adopted its general plan. The Applicant does not disagree with the request by Staff to provide mitigation at a one to one ratio pursuant to proposed Condition of Certification LAND-2, but suggests minor clarifications as shown below.

2. Proposed Condition of Certification LAND-2 makes reference to the acreage of long-term project disturbance. A revised Exhibit 83-2 with the revised calculation results for temporary and permanent disturbed acreage onsite and offsite is provided with these PSA comments.

3. Comments were made by the public at the February 18, 2009 workshop regarding the potential impact of the project on area residents. From a land use perspective, the City of Avenal has effectively zoned the industrial area where the project will be located to minimize impacts on residents. The City's designated Industrial Zone is located in the unpopulated northeast corner of the City, several miles from City's population center and separated from it by the intervening topography of the Kettleman Hills. Surrounding lands outside the City limits are unincorporated farmland with the closest population centers in addition to Avenal being Huron approximately eight miles to the north and Kettleman City approximately 10 miles to the south. Land zoning and current land uses effectively isolate the site from any population centers.

4. Suggested specific changes are provided below that reflect the above general comments and additional suggested changes for consistency and accuracy.

Specific Comments

Page 4.5-3 and 4.5-4

The applicant negotiated a purchase of 148 acres of a 608-acre parcel with the landowner. The recordation of a parcel split, pursuant to the Subdivision Map Act was completed on October 2, 2007. The Avenal Energy project would be built on ~~25~~ approximately 34.8 acres ~~located near the center~~ of a 148 acre parcel. The power plant will be located near the center of the 148-acre parcel. An additional ~~26~~ approximately 39.3 acres onsite would be temporarily used for construction laydown.

Once construction is completed, the ~~remainder~~ portions of the parcel outside the permanent disturbance footprint would be ~~improved pursuant~~returned to row crops in accordance with ~~to~~ the conceptual landscape plan (see the **Visual Resources** section of this PSA). ~~An orange o~~Orchard ~~is planned for the northwest portion of the site. The retention basin to the northeast of the power plant would be used as a soccer field during the dry season. To the south of that, a softball field is planned. Ornamental~~ trees

would be planted along the ~~east property line, and along the~~ site access road to the northwest ~~boundary~~ of the power plant. ~~Additional o~~Ornamental trees are planned ~~along the south and west property lines~~north of the power block and at the site entrance gate.

Page 4.5-4

Land Use Table 2
General Plan Land Use Designations within the
One-Mile Radius Project Study Area

Direction	Jurisdiction	Designation
North	Kings County	General Agricultural
South	City of Avenal	Industrial
East	Kings County	General Agricultural
West	City of Avenal	Industrial

Land Use Table 3
Zoning Designations within the One-Mile Radius Project Study Area

Direction	Jurisdiction	Designation
North	Kings County	General Agriculture~~Industrial~~
South	City of Avenal	Heavy Industrial
East	Kings County	General ~~Industrial~~ Agriculture
West	City of Avenal	Heavy Industrial

Page 4.5-7 and 4.5-8

~~Based on staff's review of the City of Avenal's environmental documentation pertinent to the 1992 and 2005 General Plan updates, the~~The project would permanently ~~remove 29.4 designated~~ occupy approximately 34.8 acres of land onsite that is designated as prime farmland by CDC and is currently used for ~~from~~ agricultural production; however the project is consistent with current industrial land use and zoning designations. Conversion of 766 acres of prime and non-prime farmland to industrial uses as a result of planned growth, including the proposed site for the project, had been considered by the city as a result of adoption of its 1992 General Plan Update. The City identified in the EIR the loss of prime agricultural land as significant and unavoidable, and as a result, a Statement of Overriding Considerations was adopted by the Avenal City Council in conjunction with certification of the EIR.

The Avenal City Council actions with respect to the General Plan Update, Final EIR, and Statement of Overriding Considerations, were supported by substantial evidence in the record, including relevant public testimony received at public meetings and workshops. However, because the City Council's action findings ~~mitigation infeasible over 15 years ago, and~~ involved substantially more land then is being analyzed here,

staff believes it is appropriate to determine whether physical conversion of farmland proposed by this development ~~would result in a significant impact, and if so, whether such impact is~~should be mitigated. ~~mitigable~~ Pursuant to Staff's request the Applicant has agreed to offset this impact by preserving prime farmland at a 1:1 ratio for the project's permanent disturbed acreage. This mitigation would be implemented via the adoption of Staff;s proposed condition of certification Land-2..

Page 4.5-8

CEQA guidelines allow a lead agency the option of using the Important Farmland Maps prepared by California Department of Conservation (CDC) or the LESA (California Agricultural Land Evaluation and Site Assessment Model) to determine the level of significance for agricultural environmental impact when a CEQA analysis for farmland conversation is required. Energy Commission staff consulted CDC Important Farmland Maps as a means to identify whether the proposed project would impact important farmlands. The power plant and related facilities would be located on lands designated as Prime Farmland by CDC.

Since the proposed project site is designated as Prime Farmland by CDC maps, Energy Commission staff used the LESA Model to help determine ~~significant environmental effects to~~the agricultur~~al~~e value of resources potentially caused by the proposed project. The LESA Model was developed to provide lead agencies with an optional evaluation method to ensure that potentially significant effects of agricultural land conversions are quantitatively and consistently considered in the environmental review process (Public Resources Code, section 21095).

Page 4.5-9

Staff completed a LESA Model worksheet for the 34.8 acres which constitutes the project site permanent facilities~~, transmission tower supports, switch yard, access road and the storm water evaporation/percolation basin~~ (see **APPENDIX LU-1**) to ~~determine~~ evaluate the agricultural value of resources ~~level of significant~~ impacted ~~if the subject parcel and appurtenants are taken out of agricultural land use~~ by project facilities. To conduct analysis of impacts, the following governmental resources were consulted or used to complete the LESA Model Worksheet:

Page 4.5-9

The LESA Model score generated for the project's potential conversion of 34.8 acres was over 85.25 points. A score of over 80 points is considered significant as shown on Table 9 California Agricultural LESA Model, Instruction Manual, Section IV Scoring Thresholds ~~– Making Determinations of Significance under CEQA~~. The following criteria from the LESA model was used to determine the final model score of 85.25 points:

Page 4.5-10

As indicated in this analysis, the Avenal Energy Project does comply with the applicable zoning designation, but would result in the physical conversion of approximately 34.8 acres of land that is` designated as "Prime Farmland" by the California Department of Conservation. The project site, switch yard and storm water evaporative/percolation basin are currently being used for agricultural crops. These areas of land for the project site, evaporative ponds meet the Department of Conservation's criteria for prime farmland, in that it have been farmed and currently is being farmed and irrigated within the last five years, and have the required productive soil characteristics. ~~Staff therefore concludes that the project will have a significant adverse impact on agricultural resources and recommends that mitigation be required, as specified in~~ The Applicant has agreed to offset this impact to agriculture by preserving prime farmland at a 1:1 ratio for the projects permanent disturbed acreage. Proposed **Condition of Certification LAND-2** will implement this mitigation. ~~Specifically, staff believes that the project owner should be required to ensure that an identical amount of prime farmland is preserved in perpetuity. This can be done through purchase of land or of easements, or through contribution to an agricultural land trust that will use the funds to preserve a minimum of 34 acres of prime farmland in perpetuity.~~

Page 4.5-11

Except for a portion of the transmission line and a short segment of water pipeline, ~~A~~all properties that ~~would make up the proposed~~ Avenal Energy ~~project site~~facilities would occupy, ~~including transmission corridors, utility (except for portions of water pipeline installation in Kings and Fresno Counties) and access easements, and construction parking and laydown areas,~~ would be within the City of Avenal jurisdictional boundaries and would, therefore, be subject to the current City of Avenal LORS, including the City of Avenal General Plan (2005), Municipal (Zoning) Code, and permitting requirements, except for the Energy Commission's exclusive jurisdiction.

Page 4.5-16

- ~~In order to reduce the potentially significant impact associated with the loss of productive prime agricultural land to a level of insignificance under CEQA, t~~The applicant has agreed to ~~must comply with **Condition of Certification LAND-2** by~~ providing a mitigation that will result in permanent conversion of an equal amount of prime farmland. This agreement would be implemented under **Condition of Certification LAND-2.**

Page 4.5-18

LAND-2 The project owner shall mitigate at a one to one ratio for the conversion of 34.8 acres of prime farmland as classified by the California Department of Conservation, to a non-agricultural use, for the construction of the power generation facility, switchyard, and the storm water evaporative/percolation basin. The mitigation shall consist of one of the following:

1) a mitigation fee payment to a City of Avenal or Kings County agricultural land trust or the American Farmland Trust consistent with a prepared Farmlands Mitigation Agreement. The payment amount shall be determined by contacting the local assessor's office to determine the assessed value for 34 acres of prime agricultural land; or by a real estate appraiser selected by the project owner and approved by the CPM.

2) securing the acquisition of an agricultural easement or otherwise causing the creation of an agricultural easement for other farmland in the vicinity. Easements for prime farmland would be acquired based on the California Department of Conservation's Important Farmland Classification Map, but in no case shall be less than a 1:1 ratio.

Verification: Sixty (60)~~Thirty (30)~~ days prior to start of ~~construction~~commercial operations, the project owner shall provide documentation to the CPM demonstrating compliance with one of these options. For option 1, documentation shall consist or proof of mitigation fee payment and ~~in its monthly compliance reports~~ a discussion of any land and/or easements purchased ~~in the preceding month~~ to date by the trust with the mitigation fee money provided, and the provisions to guarantee that the land managed by the trust will be ~~farmed~~ preserved for farming in perpetuity. If the total required acreage has not been purchased by this time, then ~~T~~this discussion shall include the schedule for purchasing ~~34~~ any additional required acres of prime farmland and/or easements within one year of ~~start of construction as compensation for the 34 acres of prime farmland to be converted by the Avenal Energy project~~the start of commercial operations. For option 2, the project owner shall provide to the CPM sixty (60) days prior to the start of commercial operations a copy of the deed restriction or other documentation demonstrating to the satisfaction of the CPM that the project owner has caused the creation of an in-perpetuity agricultural easement for the total required acreage.

NOISE AND VIBRATION

Specific Comments

APC suggests that modification be considered to proposed Conditions of Certification as shown below:

Page 4.6-15

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

- use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;
- attempt to contact the person(s) making the noise complaint within 24 hours, or by 5 p.m. Monday if the complaint is received Friday through Sunday;
- conduct an investigation to determine the source of noise in the complaint;
- if the noise is project related, take all feasible measures to reduce the source of the noise; and
- submit a report documenting the complaint and actions taken. The report shall include: a complaint summary, including the final results of noise reduction efforts and, if obtainable, a signed statement by the complainant stating that the noise problem has been resolved to the complainant's satisfaction.

Page 4.6-16

NOISE-4

Verification: The survey shall take place within ~~30~~ sixty (60) days of the project first achieving a sustained output of 85 percent or greater of rated capacity. Within ~~15~~ thirty (30) days after completing the survey, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report shall be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limit, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

Within ~~15~~ thirty (30) days of completion of the new survey, the project owner shall submit to the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.

Page 4.6-17

NOISE-6 Heavy equipment operation and noisy construction work relating to any project features shall be restricted to the times delineated below:

Mondays through Fridays: 7:00 a.m. to 7:00 p.m.
Saturdays: 9:00 a.m. to 6:00 p.m.
Sundays: No Noisy Construction Allowed

PUBLIC HEALTH

Specific Comments

We believe the cancer risk value of 0.046×10^{-6} in the third row in Public Health Table 2 on page 4.7-12 should be replaced with 0.46×10^{-6}, to be consistent with the cancer risk reported in AFC Table 6.16-7.

SOIL AND WATER RESOURCES

General Comments

Staff comments in the PSA that the applicant has not demonstrated the availability of the backup water supply wells (p. 4.9-14.9-20 and 4.9-24). The Applicant notes that the question about the right to use the ground water wells was raised by Westlands Water District in a letter dated May 29, 2008, and the January 12, 2009 letter from Westlands Water District retracts this question.

On Page 4.9-9 staff states that "According to the Guaranteed Organic Certification Agency, Kochergen Farms was certified organic on March 15, 2003. The Applicant is not aware of Kochergen Farms being certified organic on this date. Based on Exhibit C 6 submitted by the Applicant in response to CURE Data Requests, Kochergen Farms was certified organic on August 7, 2008.

Revised estimates of disturbed acres are provided with these comments to the PSA.

Specific Comments

Page 4.9-1

Third Bullet

~~•The applicant has not demonstrated that the necessary backup water supply for project operation is available. Additional documentation is needed to assure that it can be provided;~~

Page 4.9-1

Sixth bullet

- ~~Except as noted above, t~~The proposed project would comply with all applicable federal, state and local laws, ordinances, regulations and standards and potentially significant impacts would be mitigated through the preparation and implementation of various construction and operating plans and compliance with local ordinances.

Pages 4.9-3 and 4.9-4

The proposed Avenal Energy project is a 600 MW natural gas-fired, combined cycle electric generating facility (Avenal Energy 2008a). The project would incorporate dry cooling, Zero Liquid Discharge (ZLD), dry NOx reduction and closed loop inlet air chillers to minimize water use. The proposed site is located within the Westside Groundwater Basin on the western edge of the San Joaquin Valley in Kings County, California. The site is situated approximately 200 miles north of Los Angeles, about 200 miles south of San Francisco, and about six miles northeast of the residential and commercial districts of the city of Avenal. The site lies approximately two miles east of Interstate 5 and adjacent to the right bank of the State Water Project's San Luis Canal. All lands adjacent to the power plant site are currently open farmland except for a water

treatment facility owned and operated by the city of Avenal that is located at the northeast corner of the site, and the USBR right-of-way for the San Luis Canal. The proposed power plant site occupies a 148 acre parcel that is currently zoned industrial within the jurisdiction of city of Avenal, Kings County.

~~Construction laydown~~ Permanent project facilities would occupy approximately 34.8 acres of the 148 acre site. Construction activities would require temporary use of an additional approximately ~~85~~ 39.3 acres of the 148 acre site.

Page 4.9-11

Construction of the proposed Avenal Energy facility would ~~disturb five areas that total 53.67 acres.~~ permanently disturb approximately 34.8 acres onsite and 1.2 acres offsite. During construction, there would be additional temporary disturbance of approximately 39.3 acres onsite and 9 acres offsite According to the AFC, it will take a 27 month period to complete project construction (AFC, Page 2-46). The earth work will consist of primarily cut and fill grading with excavation for foundations and underground systems (Avenal Energy 2008a, page 2-48). The Applicant has indicated to Staff that no temporary disturbance will extend more than 24 months.

Page 4.9-20

Avenal Energy estimates the maximum annual water use for plant operation to be 104 AF. By averaging, the maximum monthly consumptive water use for the Avenal Energy power plant operation is estimated to be less than 8.7 AF/month. ~~Avenal Energy expects that, if the backup water supply is ever needed, it will be for a relatively short duration (less than a month). Therefore, the volume of groundwater required (<8.7 AF/month) for back up supply will be less than significant when compared with historic groundwater withdrawals.~~

The Applicant has demonstrated that the San Luis Canal that provides water to the City of Avenal is a reliable source. It is expected that there would be few events during a 30 year operational period during which the back up water supply may be needed. Potentially foreseeable events include short-term turbidity spikes or low water availability, either of which would likely be rare and likely to be resolved in a matter of several days to a month (See Response to Staff Data Request Nos. 40 and 41). If the backup supply is needed, the applicant proposes to use groundwater that would be pumped from neighboring agricultural wells and piped to the facility. ~~Ownership and use of the groundwater wells is unclear. The applicant must provide additional information demonstrating ownership and agreement for use of the wells to provide backup water supply for power plant operations. Staff believes that if the applicant complies with Condition of Certification **Soil & Water-5**, use of the water would be secured and there would be no significant impacts to water resources during operation of the Avenal Energy facility.~~

Should groundwater be used for backup supply, the applicant has stated that groundwater use will be entirely offset through existing conservation measures.(Avenal

Energy 2008a, Section 6.5.2.4). The applicant stated that the offsetting water conservation measures would be accomplished using crop rotation and irrigation conservation measures and that those efforts would be described and presented to the Energy Commission in the project's Annual Report. Therefore, the volume of groundwater required (<8.7 AF/month) for back up supply will be less than significant when compared with historic groundwater withdrawals. Staff believes that if the applicant complies with Condition of Certification **Soil & Water-5**, use of the water would be secured and there would be no significant impacts to water resources during operation of the Avenal Energy facility.

In the applicant's response to Data Request #48, it is stated that Kochergen Farms installed drip irrigation systems and microsprinklers on almond orchards in the immediate vicinity of the Avenal Energy site shortly after Kochergen Farms received payment of option agreement funds from Avenal Energy in association with the Water Supply Agreement between Avenal Energy and Kochergen Farms dated May 1, 2001. Avenal Energy states that this water conservation method is saving approximately 0.50 acre-foot per acre annually over approximately 280 acres of Kochergen Farms property, or 140 acre-feet of water per year (Avenal Energy 2008b). In addition, the proposed project will permanently remove ~~25~~ approximately 34.8 acres of land from irrigation at site. Taken together, these measures will save more water each year than the project will use, even when compared to a maximum use scenario, and will result in a net reduction in groundwater pumping from the specified wells.

Page 4.9-24

- ~~The applicant has not demonstrated that the necessary backup water supply for project operation is available. Additional documentation is needed to assure that it can be provided;~~

Page 4.9-24

- ~~Except as noted above, t~~The proposed project would comply with all applicable federal, state and local laws, ordinances, regulations and standards and potentially significant impacts would be mitigated through the preparation and implementation of various construction and operating plans and compliance with local ordinances.

Page 4.9-28

SOIL & WATER-6: The project owner shall treat all routine process waste water streams with a zero liquid discharge (ZLD) system that results in a residual solid waste. The solid waste shall be disposed of in the appropriate class of landfill suitable for the constituent concentrations in the waste. Surface or subsurface ~~disposal~~ discharge of process wastewater from the Avenal Energy power plant is prohibited. The project owner shall operate the ZLD system in accordance with a ZLD management plan approved by the CPM. The ZLD management plan shall include the following elements:

TRAFFIC AND TRANSPORTATION

General Comments

1. In Table 2 on Page 4.10-4, the source of the LOS information is not clear. The source identified in the footnote does not include LOS information, and some of the LOS information shown in Table 2 conflicts with the Applicant's information provided AFC Table 6.11-3. Furthermore, for the traffic volume shown in the table, the I-5 road segment should be referenced as "I-5- Kings County Line to Jayne Avenue."

2. Traffic and Transportation Figure 2 shows a Kings Area Rural Transit District (KART) bus route along Avenal Cutoff Road. KART staff have indicated to the Applicant that there is no KART route on Avenal Cutoff Road (Ron Hughes, KART, 559-582-3211, rhughes@co.kings.ca.gov). A map of their routes in the area is attached to these comments.

Specific Comments

APC suggests that modifications be considered as shown below.

Page 4.10-3

The Avenal Airport, a private facility, is located about seven miles southwest~~north~~ of the Avenal Energy site. Additional aviation facilities include Harris Ranch Airport (fifteen miles northwest), and Lemoore Naval Air Station (fifteen miles northeast) [Avenal Power 2008a, pg. 6.11-3]. The project site is not in the landing or take-off pattern of any of these facilities. However, the project would be located beneath the Military Operational Airspace of the Lemoore facility. There are no agricultural airstrips in the project area.

Page 4.10-5

To determine the amount of vehicle trips to the project site during average and peak construction, the applicant assumed that workers would commute ~~alone~~ during the morning and afternoon peak intervals (7 to 9 AM and 4 to 6 PM). Project construction workers would operate in two shifts; 6*:30 a.m. to 3:00 p.m. and 7:30 a.m. to 4:00 p.m.* The average number of construction workers would be approximately 320, while the peak workforce would consist of 550 workers during a two month period (months 19 and 20). A 15 percent carpool rate was used for construction worker traffic analysis. Given experience with previous projects, staff believes that the estimated construction traffic trips and assumptions about peak construction activity are reasonable. Based on regional demographics and availability of skilled laborers, the construction workers would probably come from Fresno County. However, staff believes that some workers could come from Kern and Kings Counties.

Page 4.10-6

Considering the 320-person average construction workforce and the 15 percent carpool rate estimated by the Applicant, the ~~T~~total average construction traffic impact (workforce

and trucks) would be ~~350~~302 vehicle trips (272~~320~~ worker trips plus 30 PCE for trucks and deliveries), or 604~~700~~ one-way vehicle trips. Total peak construction traffic impact with 15 percent carpooling would be ~~880~~798 vehicle trips (~~550~~468 workers plus 330 PCE for trucks and deliveries), or ~~1760~~1596 one-way vehicle trips. The average construction total is about a ~~7~~12 percent increase in traffic (when compared to 2007 average daily traffic counts (5,000). Peak construction total is about a ~~35~~32 percent increase. Staff believes the LOS C on Avenal Cutoff Road would not degrade during construction, which is consistent with the applicant's projected level of service (Avenal Power 2008a, Table 6.11-4A). Staff is proposing Condition of Certification **TRANS-2** to repair any damage to Avenal Cutoff Road from construction traffic, particularly heavy trucks.

Page 4.10-7

As noted earlier, the Reef-Sunset School District provides school bus service between the city of Avenal and Kettleman City. The bus route includes Avenal Cutoff Road at 7 a.m., 3:15 p.m., and 3:30 p.m. Staff has proposed condition of certification TRANS-1, in part, to assure that there is coordination with the school district for the project's traffic safety plan, so that the District is aware of project traffic and has the opportunity to provide input to traffic controls when school busses are operating on Avenal Cutoff Road. ~~is concerned that construction worker and truck traffic could interfere with the school bus service or compromise the safety of the bus or school children. This issue will be discussed at the PSA workshop and revisited in the FSA.~~

Page 4.10-8

Project operation would require use of hazardous substances including sulfuric acid and cleaning and water treatment chemicals. It is estimated that there would be ~~a maximum of five~~ an average of approximately seven truck trips per month including four deliveries per month of aqueous ammonia. ~~In addition, there would be 27 additional truck trips of various hazardous materials every year.~~ A licensed hazardous waste transporter would haul any hazardous waste from the project site to one of three Class 1 hazardous waste landfills in western Kern County near the communities of Buttonwillow and Kettleman City, and in Imperial County near the community of Westmoreland. The handling and disposal of hazardous substances are also addressed in the **WASTE MANAGEMENT, WORKER SAFETY AND FIRE PROTECTION** and **HAZARDOUS MATERIALS** sections of this assessment.

As noted earlier, the Avenal Airport, a private facility, is located about seven miles southwest~~north~~ of the Avenal Energy site, and the Lemoore Naval Air Station is located fifteen miles northeast. The project site is not in the landing or take-off pattern of either of these facilities. However, the project would be located within the Military Operational Airspace of the Lemoore facility. There are no agricultural airstrips in the project area.

Page 4.10-12

TRANS-1 The project owner shall, in coordination with the city of Avenal and Kings County, and in consultation with the Reef-Sunset Unified School District (RSUSD), develop and implement a construction traffic control plan prior to construction site mobilization. Specifically, the traffic control plan shall include the following:

- Ensure that the construction of the linears uses appropriate mitigation such as cones, signs, trailer-mounted camera, and flagmen/traffic officer to avoid unnecessary disruption of traffic flows on Avenal Cutoff Road;

- Prior to site mobilization activities, the project owner shall provide the Kings county Public Works Department for review and comment, and the CPM for review and approval, a traffic mitigation plan to maintain the existing LOS during the afternoon peak on the SR-198 eastbound ramp on Avenal Cutoff Road.

- Traffic safety measures for ingress/egress to Avenal Cutoff Road including, at minimum, a stop sign full time, and a flag person during shift changes and during heavy equipment ingress/egress.

Verification At least 90 days prior to the start of site mobilization activities, the project owner shall submit a construction traffic control plan to the city of Avenal and the Kings County Public Works Department for review and comment, and to the CPM for review and approval, to ensure that the construction of the linears and the increase in construction traffic would not adversely affect traffic flow on Avenal Cutoff Road, and would not degrade existing LOS on the SR-198 eastbound ramp at Avenal Cutoff Road. ~~The plan shall also describe how workers will be advised to avoid arriving and departing the Avenal Energy site when the school bus uses Avenal Cutoff Road.~~ The project owner shall provide RSUSD with a copy of the plan and opportunity to review and comment on the project's traffic control measures for school bus safety. The project owner shall provide the CPM with a copy of any comments received regarding the construction traffic control plan within 15 days of receipt.

GEOLOGY AND PALEONTOLOGY

Specific Comments

APC suggests that modifications be considered as shown below.

Page 5.2-3

Avenal Energy would be a primary power generating facility capable of producing 600 MW of electricity from a combined cycle natural gas fired combustion turbine generator and steam turbine generator system. Ancillary facilities would include a ~~1.3~~2.5 mile natural gas pipeline, and a ~~4.5~~6.4-mile above-ground electrical transmission connection to the existing PG&E electrical grid west of the site. Primary water supply would be provided by the City of Avenal via the San Luis Canal located adjacent to the site with ~~a 1.6-mile~~ two backup water supply pipelines connecting to existing water supply wells in the project area. Other onsite improvements would include a water supply treatment plant, control and administrative buildings, a zero liquid discharge system for treatment of process water, a septic system, and various smaller outbuildings and facilities.

Page 5.2-6

Overall, staff considers the probability that paleontological resources will be encountered during site construction activities to be low. However, if construction includes significant amounts of grading or deep foundation excavation and utility trenching the potential for exposure of paleontological resources will increase with depth and volume of the excavations. This assessment is based on SVP criteria and the ~~confidential~~ paleontological report appended to the AFC (APC, 2008). Proposed Conditions of Certification **PAL-1** to **PAL-7** are designed to mitigate paleontological resource impacts, as discussed above, to less than significant levels. These conditions essentially require a worker education program in conjunction with the monitoring of earthwork activities by a qualified professional paleontologist (a paleontologic resource specialist, or PRS).

Page 5.2-12

As noted above, no viable geologic or mineralogic resources are known to exist in the vicinity of the proposed construction site. No paleontologic resources have been identified at the potential site. ~~although older~~The shallow geologic materials expected to be disturbed by the project have been identified to be of Indeterminant sensitivity based on the Society of Vertebrate Paleontology classification system (AFC p. 6.8-3). ~~alluvium and lakebed deposits beneath the site are considered to have a high sensitivity for paleontologic impacts.~~ Construction of the proposed project will include grading, foundation excavation, and utility trenching. Based on the soils profile, SVP assessment criteria, and the depth of the potentially fossiliferous geologic units, staff considers the probability of encountering paleontological resources to be low. ~~unless drilled shaft foundation borings, or other excavations, reach greater than 5 feet below existing ground surface.~~ Given the ~~small diameter of the foundation borings (24 inches), and the~~ general scarcity of significant fossils, the chances of intersecting fossil bearing strata

would seem remote. Utility trenching or large turbine-generator foundations, extending 5 feet or more below existing grade, would be the most likely situation where meaningful fossils could be found.

Page 5.2-17

PAL-4 Prior to ground disturbance and for the duration of construction activities involving ground disturbance, the project owner and the PRS shall prepare and conduct ~~weekly~~ CPM-approved training at a frequency to be outlined in a Worker Environmental Awareness Program (WEAP) for the following workers: project managers, construction supervisors, foremen and general workers involved with or who operate ground-disturbing equipment or tools. Workers shall not excavate in sensitive units prior to receiving CPM-approved worker training. Worker training shall consist of a CPM-approved video or in-person presentation. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern. No ground disturbance shall occur prior to CPM approval of the ~~Worker Environmental Awareness Program (~~WEAP~~)~~, unless specifically approved by the CPM.

Page 5.2-18

PAL-5 The project owner shall ensure that the PRS and PRM(s) monitor consistent with the PRMMP all construction-related grading, excavation, trenching, and augering in areas where potential fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the project. In the event that the PRS determines ~~full-time~~ monitoring can be reduced from that described in the approved PRMMP ~~is not necessary~~ in locations that were identified as potentially fossil bearing in the PRMMP, the project owner shall notify and seek the concurrence of the CPM.

VISUAL RESOURCES

General Comments

1. A revised site layout drawing and revised estimates of disturbed acres are provided with these comments to the PSA. The revised layout should be used in place of the former project layout shown in Visual Resources – Figure 4.

2. Paragraph 7 of the Conclusions section (p. 4.12-20) appears to be inconsistent with the visible plume analysis on PSA pgs. 4.12-13 and 4.12-14.

3. Paragraph 8 of the Conclusions section (p. 4.12-20) appears to be an overstatement based on the minority population description on PSA p. 4.8-3.

Specific Comments

APC suggests that modifications be considered as shown below:

Page 4.12-2

The proposed Avenal Energy would be constructed on an approximate ~~25~~34.8-acre (facility site) portion of a 148-acre property (**Visual Resources Figure 2** – Project Elevation View, **Visual Resources Figure 3** – Isometric View Conceptual Design and Major Project Features).

Page 4.12-3

Transmission Line – An approximate ~~5~~6.4-mile long, 230kV transmission line with approximately forty three 120-foot tall tubular steel poles from Avenal Energy to the PG&E Gates Substation.

Process Water - A backup water supply would be provided from existing Well 24-5 located approximately 2700 feet west of the site, and Well 18-1 and Well 18-4 approximately 1,000 feet and 3,000 feet north of the project site. The water pipelines would be installed underground.

Natural Gas – Natural gas would be supplied from the Kettleman Compressor Station by means of a ~~two~~2.5-mile underground pipeline.

Construction Laydown and other temporary disturbances~~Area~~ – In addition to the approximately 34.8 acres of permanent facilities on the site, ~~The approximate total of 35 acres of~~ construction laydown and parking ~~area~~ and other short-term disturbances would ~~be~~ total 39.3 acres on the 148-acre project site (**Visual Resources Figure 4** – Proposed Construction Parking and Laydown Areas). Construction laydown facilities are to be removed after completion of project construction and the area is to be replanted in row crops.

Page 4.12-13

Transmission Lines -An approximate ~~5~~6.4-mile long, 230kV transmission line with approximately forty three 120-foot tall tubular steel poles would connect Avenal Energy to the PG&E Gates substation. The new transmission poles would be located within a new 120-foot wide transmission line easement that would parallel three existing lines of transmission lattice towers alignments (see **Visual Resources Figure 10**). Project transmission lines near road crossings would be noticeable to motorists.

Page 4.12-22

VIS-3 The project owner shall color and finish the surfaces of all project structures and buildings visible to the public to ensure that they: (1) minimize visual intrusion and contrast by blending with the landscape; (2) minimize glare; and (3) comply with local design policies and ordinances. The transmission line conductors and insulators shall be non-specular ~~and non-reflective, and the insulators shall be non-reflective and non-refractive~~with low reflectance.

WASTE MANAGEMENT

General Comments

On Page 4.13-8 staff states that Kochergen Farms was certified organic on March 15, 2003. The Applicant is not aware of Kochergen Farms being certified organic on this date. Based on Exhibit C 6 submitted by the Applicant in response to CURE Data Requests, Kochergen Farms was certified organic on August 7, 2008.

Specific Comments

APC suggests that modifications be considered as shown below.

Page 4.13-5

As noted in the **Project Description** section of this document, the proposed Avenal Energy would consist of the construction and operation of a 600-megawatt (MW) natural gas electrical generation facility and associated linear facilities in the city of Avenal, Kings County. The project site is a 148-acre parcel, of which ~~25~~ approximately 34.8 acres will be occupied by the power plant and ancillary facilities.

Page 4.13-6

Tin addition to the main power plant, the project would include construction and maintenance of an underground natural gas pipeline, ~~an 8~~a 6.4 mile long electrical transmission line, and water supply pipelines.

Page 4.13-12

Approximately 6.75 tons of hazardous waste will be generated during construction of Avenal Energy (Avenal Energy 2008a, p 6.14-10) and disposed of in a Class I Landfill. An average of approximately ~~168~~ six tons of hazardous waste will be generated per year in the course of operation (Avenal Energy 2008a. p 6.14-11) and disposed of in a Class I Landfill. The operations waste will total approximately 168 tons over the 30-year project life. Hazardous wastes generated during construction and operation would be recycled to the extent possible and practical. Section 6.14.1.2 and Table 6.14-1 of the project AFC provide information on treatment, storage, or disposal facilities (TSDFs); landfills; recycling facilities; and transfer stations that could be used to manage project wastes. Any wastes that cannot be recycled would be transported off site to a permitted TSDF or landfill.

Three hazardous waste (Class I) disposal facilities are currently accepting waste and could be used to manage Avenal Energy wastes: the Clean Harbors Buttonwillow Landfill in Kern County, the Clean Harbors Westmorland facility in Imperial County and the Chemical Waste Management Kettleman Hills Landfill in Kings County. The Kettleman Hills facility also accepts Class II and Class III wastes. ~~In total, T~~there is ~~In excess of 17~~ on the order of one million cubic yards of remaining hazardous waste disposal capacity at Kettleman Hills alone, and the Buttonwillow and Westmoreland

facilities identified by the applicant represent approximately 14 million cubic yards of Class I capacity (AFC p. 6.14-3 and 6.14-4).

Page 4.13-13

- ~~Evidence of past or present hazardous substance use, storage or disposal was not documented or observed on the project site during the site reconnaissance conducted for t~~The ESA conducted for the project site did not identify any evidence of the presence or likely presence of any hazardous substance on the site under conditions that would indicate an existing release, past release, or material threat of release into the ground, groundwater or surface water. This finding indicates that there is limited potential for construction crews to encounter contaminated soil or groundwater at the power plant site;

- An ESA was conducted for the project's linear corridors. The ESA conducted for the linear corridors did not identify any evidence of the presence or likely presence of any ~~Evidence of past or present~~ hazardous substance ~~use, storage or disposal was not documented or observed~~ within the linear corridors for the water and natural gas lines~~ the project site during the site reconnaissance conducted for the ESA~~ under conditions that would indicate an existing release, past release, or material threat of release into the ground, groundwater or surface water. However, along the transmission line corridor, the ESA indicated that soil staining was observed on the Carberry Farms property. The ESA considered the history of site use and the observation of stained surface soil and identified the Carberry Farms property as a recognized environmental condition (REC). If project elements are proposed for construction in this area, additional site evaluation should be conducted.

- The management of project wastes generated during project construction and operation would not result in significant impacts provided that staff's proposed conditions of certification are implemented;

- The volume of hazardous and non-hazardous liquid waste will ~~have~~ not have a significant impact on existing landfills or transfer and disposal facilities.

TRANSMISSION SYSTEM ENGINEERING

General Comments

With regard to the proposed Condition of Certification TSE-1, the Applicant will provide the required data as provided by the CAISO and PG&E, no later than 60 days prior to the start of construction (or a lesser number of days mutually agreed to by the Applicant and the CBO).

ALTERNATIVES

General Comments

1. Revised estimates of disturbed acres for the proposed project are provided with these comments to the PSA.

2. In various locations, the Alternatives section addresses the issue of the setback distance from the USBR ROW, and an alternative project design that would move the project's storm water evaporation/percolation basin from its planned location to allow for a 300-foot setback (p. 6-1, 6-4, 6-5, 6-8, and 6-14). As discussed during the February 18, 2009 workshop, the Applicant has agreed to the 300-foot setback measured from the USBR ROW. A revised project layout to accommodate the 300-foot setback is included with the Applicant's comments to the PSA. With the 300-foot setback resolved, it is the Applicant's opinion is that all of the references to this alternative and the setback issue are superfluous in the Alternatives section and can be deleted.

Specific Comments

APC suggests that modifications be considered as shown below.

Page 6-1

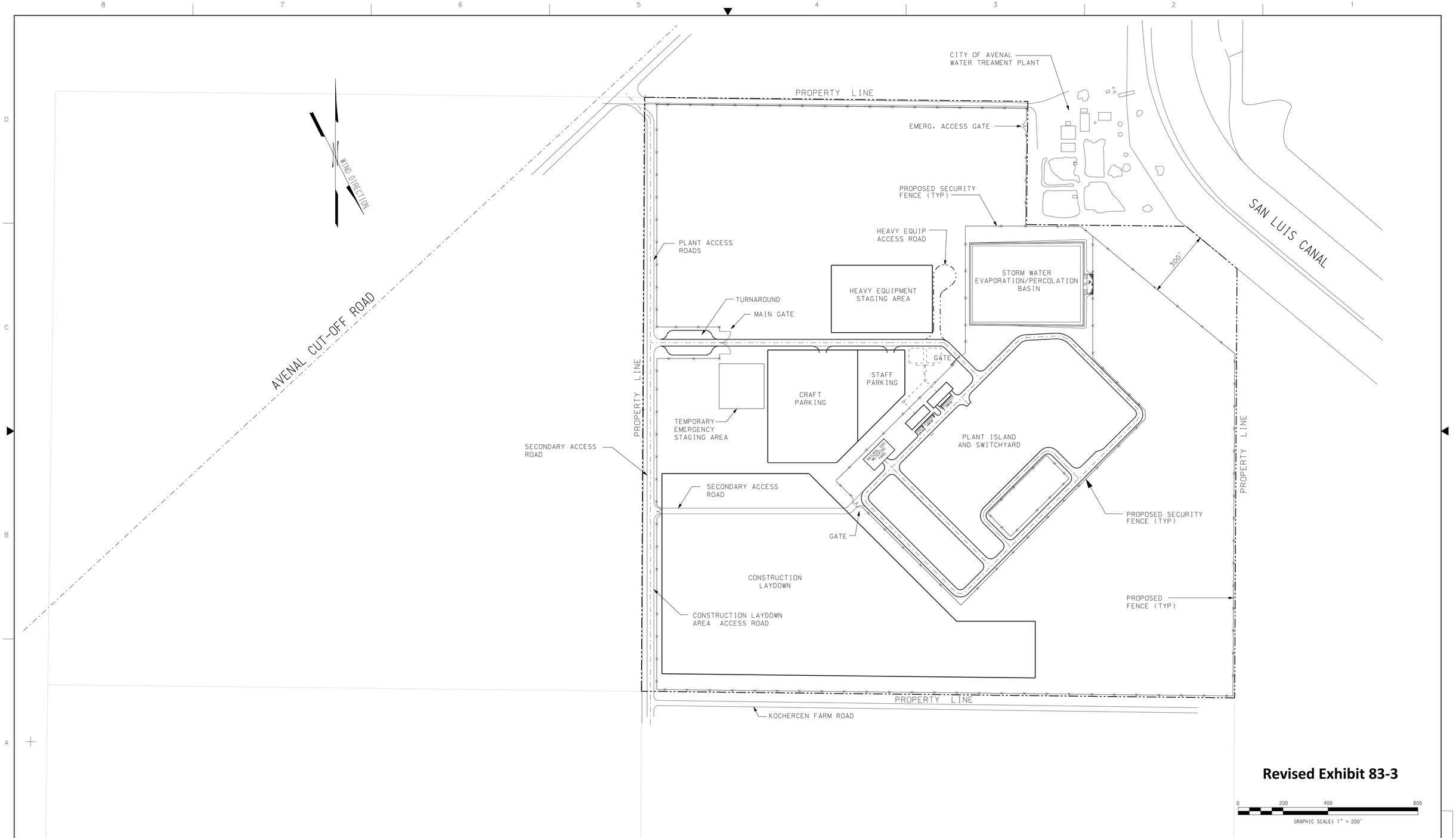
Avenal Energy would result in the conversion of 34.8 acres of ~~land~~ the 148-acre site that is designated as "Prime Farmland" by the California Department of Conservation. The Applicant has agreed to preserve prime agricultural land acreage at another location at a 1:1 ratio for the long term site disturbance. ~~Since the project site, switch yard and storm water evaporative/percolation basin are currently being used for agricultural crops and have the required productive soil characteristics, staff has concluded that the project will have a significant adverse impact on agricultural resources and recommends that mitigation be required.~~ Although alternatives sites west of Interstate 5, currently used for cattle grazing, would avoid impacts to prime farmland, the development of these sites could lead to significant impacts to kit fox habitat and are outside the area zoned for industrial development.

Page 6-2

The project would be built on approximately 34.8 acres of a 148-acre site just south of the Fresno County line, and about two miles east of Interstate 5.

ATTACHMENT 2

REVISED EXHIBIT 83-3



Revised Exhibit 83-3

0 200 400 800

GRAPHIC SCALE: 1" = 200'

REV	DATE	REVISION DESCRIPTION	BY	CHK	APPV	REV	DATE	REVISION DESCRIPTION	BY	CHK	APPV	REFERENCE DWG NUMBER	REFERENCE DRAWINGS
A	02/12/09	ISSUED FOR CEC AFC	DRM	BRE									
B	02/16/09	ISSUED FOR CEC AFC	DRM	BRE									
C	02/17/09	ISSUED FOR CEC AFC	DRM	BRE									

FLUOR®

CONTRACT	A3DV
DESIGNED BY	D. MARTINEZ
CHECKED BY	B. EISENBISE
SUPERVISOR	B. EISENBISE — APP DATE 02/12/09
LEAD ENGR/SPEC.	B. EISENBISE — APP DATE 02/12/09
FLUOR	APP DATE
CLIENT	APP DATE

FEDERAL POWER AVENAL, LLC
AVENAL ENERGY PROJECT
AVENAL, CALIFORNIA

300 FOOT WILDLIFE MIGRATORY BUFFER

SCALE	DRAWING NUMBER	REV
1"=200'	A3DV01-0-SK-0-CT-03	C

SAP NWA

DIST CODE

PLOT DATE:

XREF ATTACHED - YES ☐ NO ☐ MANUAL CHANGES MADE - YES ☐ NO ☐ DWG FILE UPDATED - YES ☐ NO ☐ MODEL UPDATED - YES ☐ NO ☐

CAD FILE NAME a3dv010sk0ct03 .DGN

ATTACHMENT 3

REVISED EXHIBIT 83-2

REVISED EXHIBIT 83-2

AVENAL ENERGY DISTURBANCE CALCULATIONS

Permanent Disturbance		**On Site**	**Off Site**
Power Generation (1)		31.9 acres	0 acres
Access Roads (2)		2.9 acres	0 acres
Easements			
	Transmission line	0 acres	1.2 acres
	Natural Gas pipeline	0 acres	0 acres
	Water pipelines	0 acres	0 acres
	Total Permanent Disturbance	34.8 acres	1.2 acres
	Total Permanent Mitigation Proposed	*36 acres x 1.1 = 39.6 acres*	
Incremental Temporary Disturbance		**On Site**	**Off Site**
Construction			
	Laydown	23.5 acres	0 acres
	Staff/craft parking	6 acres	0 acres
	Heavy equipment staging area	3.1 acres	0 acres
	Emergency staging area	.9 acres	0 acres
Access Roads (3)		2.4 acres	0 acres
Pipeline Construction			
	Natural Gas pipeline (4)	1.3 acres	1.2 acres
	Raw water pipeline (5)	.63 acres	0 acres
	Potable water pipeline (6)	1.4 acres	0 acres
	Backup well pipeline from wells 18-1 and 18-4 (7)	0 acres	2.4 acres
	Backup well pipeline from well 24-5 (8)	0 acres	3 acres
Transmission line construction (9)		0 acres	2.4 acres
	Total Incremental Temporary Disturbance	39.3 acres	9 acres
	Total Temporary Mitigation Proposed	*48.3 acres x .3 = 14.5 acres*	

Description

(1) Includes all acreage inside the security fence and drainage swales surrounding security fence.

(2) Includes 20-foot wide permenent access road from Avenal Cutoff Road to the power block entrance (1.8 acres), and 20-foot wide permenent secondary access road (1.1 acres).

(3) Includes all temporary construction disturbance for the plant access road (1.2 acres), secondary access road outside the construction laydown area (0.3 acres), and and heavy equipment staging area access roads (0.9 acres). Temporary disturbance for access roads is the incremental amount beyond what is permenent.

(4) Offsite disturbance reflects approximately 2000 linear feet of gas pipeline that will occur outside of existing disturbed areas. The remainder of the offsite portion of the pipeline will be placed in existing roadways and road shoulders with no farmland or habitat disturbance. On site disturbance reflects approximately 2,300 linear feet of gas pipeline construction onsite and outside of other construction disturbances. Disturbance width is 25 feet.

(5) Raw water pipeline will be installed on site from adjacent City of Avenal Water Plant for a total length of 1,100 feet and a width of 25 feet.

(6) No offiste disturbance for the new potable water pipeline because the offsite portion of this pipeline will be located within existing shoulder of Avenal Cutoff Road that is not farmland or habitat. On site the pipeline will be installed for a distance of 2,400 feet and a width of 25 feet.

(7) No onsite disturbance for backup water pipeline from wells 18-1 and 18-4 because the onsite portion of this pipeline will be installed in the same 25 foot wide construction trench as the raw water pipeline from the City of Avenal Water Plant, so the on site disturbance is already counted above.

(8) No onsite disturbance for the backup water pipeline from well 24-5 because the onsite portion of this pipeline will be installed in the same 25 foot wide construction trench as the potable water pipeline, so the onsite disturbance is already counted above.

(9) Estimated average of 2,400 square feet of temporary disturbance will occur for each transmission line pole.

ATTACHMENT 4

KETTLEMAN HILLS FACILITY
CUMULATIVE IMPACT CONSIDERATIONS

ATTACHMENT 4

KETTLEMAN HILLS FACILITY CUMULATIVE IMPACT CONSIDERATIONS

The Kettleman Hills Facility (KHF) is an existing hazardous waste treatment, storage and disposal facility and municipal solid waste landfill facility located 10 miles south of Avenal Energy near the ridgeline of the Kettleman Hills. The KHF is currently proposing to increase the capacity of an existing hazardous waste landfill at the facility (B-18) and to construct a new hazardous waste landfill (B-20) to open once B-18 has reached capacity. The proposed activities will involve the same waste transport and disposal activities as currently occur for waste disposal at the existing B-18 landfill. No new operations are planned; only new landfill space within the existing KHF facility boundaries. The final Environmental Impact Report (EIR) for this landfill expansion project is expected in 2009. The Applicant evaluated each environmental resource area as shown below and determined that the KHF does not have the potential for significant cumulative impacts with Avenal Energy.

RESOURCE AREA	**KEY FACTORS**[1]
Air Quality	Potential cumulative air quality impact from the proposed project and expansion of the KHF would be less than significant because of the distance between the two facilities, and the rapid decrease with distance of ground-level concentrations from a stationary source. For example, the maximum potential contribution of NOx from the Project to the ground-level 1-hour concentration of NO_2 at KHF is approximately 5 µg/m^3 compared to the maximum ground-level impact of 190 µg/m^3 and the most stringent ambient air quality standard of 339 µg/m^3. The KHF expansion, if accompanied by a criteria pollutant emission increase, will be subject to the same requirement of an air quality impact analysis as the Project, and a requirement to demonstrate that no cumulative air quality impacts would be significant. It is the rapid reduction of ground-level concentrations with distance from a source that supports the California Energy Commission (CEC) use of a 6-mile threshold to select projects that might require an air quality impact analysis to quantify potential cumulative air quality impact. The CEC would require analysis only as follows: “a cumulative air

[1] Except where noted, source of information on KHF is *Draft Subsequent Environmental Impact Report B-18/B-20 Hazardous Waste Disposal Project, Kettleman Hills Facility, Chemical Waste Management, Inc*., SCH 2005041064. March 2008.

	quality modeling impacts analysis of the project's typical operating mode in combination with other stationary source emissions sources within a six-mile radius which have received construction permits but are not yet operating, or are in the permitting process."[2] The Project and KHF are separated by approximately 10 miles.
Biological Resources	The proposed KHF expansion will result in approximately 103 acres of new habitat disturbance within the existing KHF site. Avenal Energy is fully mitigating project impacts to habitat so there will be no cumulative impact to habitat. The KHF also is consulting with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act to assure that project impacts are mitigated. The KHF does not occur on the canal and does not have the potential for kit fox corridor issues, since it is located in undeveloped terrain. No significant cumulative impacts would occur.
Cultural Resources	Both Avenal Energy and the KHF have conducted cultural resource studies and neither Avenal Energy nor the KHF expansion will impact any known significant cultural resource. Therefore, there is no evidence of a potential for significant cumulative impacts.
Hazardous Materials Management	Due to the distance between Avenal Energy and the KHF, there is no potential for a cumulative hazardous materials impact.
Land Use	Neither Avenal Energy nor the KHF conflict with any land use policy. There is no potential for a significant land use impact.
Noise And Vibration	Due to the distance between Avenal Energy and the KHF, there is no potential for cumulative noise or vibration impact.
Public Health	Potential cumulative health impact from the proposed project and expansion of the KHF would be less than significant because of the rapid decrease with distance of ground-level concentrations from a stationary source. Ground-level concentrations of the toxic air contaminants addressed in the Project's public health risk rapidly decrease with distance at the same rate as criteria pollutant ground-level concentrations, such as the NO_2 described above under air quality. Because of the 10-mile distance between the two facilities, the maximum potential cancer risk from the Project in the vicinity of KHF and Kettleman City would be approximately 0.028 in one million, compared to the maximum cancer risk of 0.46 in

[2] CEC. ATTACHMENT B - ENERGY COMMISSION STAFF'S DATA ADEQUACY WORKSHEET for Air Quality., Energy Facilities Siting Division, March 2007.

	one million, both risks being less than significant compared to the significance threshold of 10 in one million. Again, as mentioned above under air quality, it is the rapid reduction of ground-level concentrations with distance from a source that supports the CEC use of a 6-mile threshold to select projects that might require an air quality impact analysis to quantify potential cumulative air quality impact. In addition, the significance criteria and thresholds for public health impact analysis, such as a cancer risk of 10 in one million for a project using Toxics Best Available Control Technology, are for a project, not for the total risk experienced by a person from all causes.
Socioeconomics	No significant cumulative impact would occur. Since the KHF expansion represents a continuation of ongoing activities, jobs, spending and tax revenues from the KHF may be extended, but there would be no potential for significant population growth, or related cumulative impacts. The Project would extend employment at existing levels but would not result in additional long-term job positions (Henry 2009). Construction crews for the expansion work will be relatively small, typically less than 50 workers (Henry 2009). The lateral expansion of existing landfill B-19 is planned to be constructed by September 2010 and construction of the B-20 landfill is not planned until approximately 2018 (Henry 2009). With the small size of these construction crews expected for KHF and the distance between KHF and the Avenal Energy site, the temporary construction work does not have the potential for any significant adverse socioeconomic impact.
Soil and Water Resources	The KHF is located in an upland setting near the crest of the Kettleman Hills in an area with low permeability bedrock outside of the San Joaquin Valley groundwater basins. Therefore, there is no potential for cumulative impacts related to ground water. Soil and Hydrologic regimes are very different from the Avenal Energy site area, with different soil types. Both projects will be required to implement drainage control and storm water quality protection measures in accordance with the State General Permits for construction activities and Industrial activities. Considering these factors and the distance between the sites, there is no potential for significant cumulative impacts.
Traffic and Transportation	Planned KHF expansion activities are not expected to increase long-term traffic in the area, since the expansion represents an extension of ongoing activities. Short-term

	construction for the KHF expansion is expected to entail less than 50 workers (Henry 2009). Considering the small construction work force and distance from the Avenal Energy site, there is no potential for significant cumulative impacts to traffic or transportation.
Transmission Line Safety and Nuisance	The proposed KHF expansion does not involve any high voltage transmission. Therefore, there is no potential for cumulative impact.
Visual Resources	The KHF is in a different viewshed than Avenal Energy. There will be no cumulative visual impact.
Waste Management	The KHF is a waste management facility. The KHF expansion will provide additional waste management capacity to the market. Since the KHF is a waste treatment and disposal facility whereas Avenal Energy is a waste-generating facility, there will be no cumulative impact. Furthermore, the existing permitted landfill capacity in the region is adequate to meet the needs of Avenal Energy. Considering these factors, there is no cumulative impact to waste management.
Worker Safety	No potential for cumulative impact due to distance from Avenal Energy and independent nature of the projects.
Geology and Paleontology	No potential for cumulative impact since the KHF is distant and in a different geologic regime. The projects are too distant to have any cumulative impact related to geologic hazards. The potential fossil-bearing bedrock at the KHF located near the ridge of the Kettleman Hills is much older than any geologic material that would be disturbed by the project. Paleontological resources at the KHF and Avenal Energy sites, if encountered, would represent different geologic conditions and different geologic epochs. Therefore, there is no potential for a cumulative impact.
Transmission System Engineering	The KHF will not impact transmission systems. Therefore, there is no potential for cumulative impacts.

REFERENCES

Henry, Bob 2009. Waste Management Kettleman Hills Facility (telephone number 559-318-0201). Personal communication with Joe Stenger, TRC, March 3, 2009.